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As filed with the Securities and Exchange Commission on November 12, 2014

Registration No. 333-199069

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

Amendment No. 5
to
Form S-1
REGISTRATION STATEMENT
UNDER
THE SECURITIES ACT OF 1933

FibroGen, Inc.

(Exact name of registrant as specified in its charter)

Delaware	2834	77-0357827
(State or other jurisdiction of incorporation or organization)	(Primary Standard Industrial Classification Code Number)	(I.R.S. Employer Identification Number)

409 Illinois St.
San Francisco, CA 94158
(415) 978-1200
(Address, including zip code, and telephone number, including area code, of registrant's principal executive offices)

Thomas B. Neff
Chief Executive Officer
FibroGen, Inc.
409 Illinois Street
San Francisco, CA 94158
(415) 978-1200
(Name, address, including zip code, and telephone number, including area code, of agent for service)

Copies to:

Glen Sato	Michael Lowenstein	John L. Savva
Michael E. Tenta	Vice President, Legal Affairs	Sullivan & Cromwell LLP
Cooley LLP	FibroGen, Inc.	1870 Embarcadero Road
3175 Hanover Street	409 Illinois Street	Palo Alto, CA 94303
Palo Alto, CA 94304	San Francisco, CA 94158	(650) 461-5600
(650) 843-5000	(415) 978-1200	

Approximate date of commencement of proposed sale to the public: As soon as practicable after the effective date of this Registration Statement.

If any of the securities being registered on this Form are to be offered on a delayed or continuous basis pursuant to Rule 415 under the Securities Act of 1933, check the following box. ☐

If this Form is filed to register additional securities for an offering pursuant to Rule 462(b) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. ☐

If this Form is a post-effective amendment filed pursuant to Rule 462(c) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. ☐

If this Form is a post-effective amendment filed pursuant to Rule 462(d) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. ☐

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or a smaller reporting company. See the definitions of "large accelerated filer," "accelerated filer" and "smaller reporting company" in Rule 12b-2 of the Exchange Act. (Check one):

Large accelerated filer	☐	Accelerated filer	☐
Non-accelerated filer	☒ (Do not check if a smaller reporting company)	Smaller reporting company	☐

The Registrant hereby amends this Registration Statement on such date or dates as may be necessary to delay its effective date until the Registrant shall file a further amendment which specifically states that this Registration Statement shall thereafter become effective in accordance with Section 8(a) of the Securities Act of 1933, as amended, or until the Registration Statement shall become effective on such date as the Commission, acting pursuant to said Section 8(a), may determine.

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The information in this preliminary prospectus is not complete and may be changed. These securities may not be sold until the registration statement filed with the Securities and Exchange Commission is effective. This preliminary prospectus is not an offer to sell nor does it seek an offer to buy these securities in any jurisdiction where the offer or sale is not permitted.

Subject to Completion. Dated November 12, 2014.

7,100,000 Shares

FIBROGEN

Common Stock

This is an initial public offering of shares of common stock of FibroGen, Inc. All of the 7,100,000 shares of common stock are being sold by the company.

Prior to this offering, there has been no public market for the common stock. It is currently estimated that the initial public offering price per share will be between $16.00 and $19.00. We intend to list our common stock on the NASDAQ Global Select Market under the symbol "FGEN".

We are an "emerging growth company" as that term is used in the Jumpstart Our Business Startups Act of 2012 and, as such, may elect to comply with certain reduced public company reporting requirements in future reports after the completion of this offering.

AstraZeneca, one of our collaboration partners, has agreed to purchase from us concurrently with the closing of this offering in a private placement shares of our common stock with an aggregate purchase price of $20 million at a price per share equal to the initial public offering price.

See "Risk Factors" on page 18 to read about factors you should consider before buying shares of the common stock.

Neither the Securities and Exchange Commission nor any other regulatory body has approved or disapproved of these securities or passed upon the accuracy or adequacy of this prospectus. Any representation to the contrary is a criminal offense.

	Per Share	Total
Initial public offering price	$	$
Underwriting discount[1]	$	$
Proceeds, before expenses, to us	$	$

1 See "Underwriting" for a description of the compensation payable to the underwriters.

To the extent that the underwriters sell more than 7,100,000 shares of common stock, the underwriters have the option to purchase up to an additional 1,065,000 shares from FibroGen at the initial price to public less the underwriting discount.

The underwriters expect to deliver the shares against payment in New York, New York on , 2014.

Goldman, Sachs & Co. **Citigroup** **Leerink Partners**

RBC Capital Markets **Stifel** **William Blair**

Prospectus dated , 2014.

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Prospectus

Through and including , 2014 (the 25th day after the date of this prospectus), all dealers effecting transactions in these securities, whether or not participating in this offering, may be required to deliver a prospectus. This is in addition to a dealer's obligation to deliver a prospectus when acting as an underwriter and with respect to an unsold allotment or subscription.

We have not authorized anyone to provide any information or to make any representations other than those contained in this prospectus or in any free writing prospectuses we have prepared. We take no responsibility for, and can provide no assurance as to the reliability of, any other information that others may give you. This prospectus is an offer to sell only the shares offered hereby, but only under circumstances and in jurisdictions where it is lawful to do so. The information contained in this prospectus is current only as of its date.

PROSPECTUS SUMMARY

This summary highlights information contained elsewhere in this prospectus and does not contain all of the information that you should consider in making your investment decision. Before investing in our common stock, you should carefully read this entire prospectus, including our consolidated financial statements and the related notes thereto and the information set forth under the sections "Risk Factors" and "Management's Discussion and Analysis of Financial Condition and Results of Operations."

Unless the context otherwise requires, we use the terms "FibroGen," "company," "we," "us" and "our" in this prospectus to refer to FibroGen, Inc. and, where appropriate, our consolidated subsidiaries.

Company Overview

We are a research-based biopharmaceutical company focused on the discovery, development and commercialization of novel therapeutics to treat serious unmet medical needs. We have capitalized on our extensive experience in fibrosis and hypoxia-inducible factor, or HIF, biology to generate multiple programs targeting various therapeutic areas. Our most advanced product candidate, roxadustat, or FG-4592, is an oral small molecule inhibitor of HIF prolyl hydroxylases, or HIF-PHs, in Phase 3 clinical development for the treatment of anemia in chronic kidney disease, or CKD. Our second product candidate, FG-3019, is a monoclonal antibody in Phase 2 clinical development for the treatment of idiopathic pulmonary fibrosis, or IPF, pancreatic cancer and liver fibrosis. We have taken a global approach to the development and future commercialization of our product candidates, and this includes development and commercialization in the People's Republic of China, or China.

Roxadustat, the first HIF-PH inhibitor to enter Phase 3 clinical development, acts by stimulating the body's natural pathway of erythropoiesis, or red blood cell production. Roxadustat represents a new paradigm for the treatment of anemia in CKD patients, and has the potential to offer a safer, more effective, more convenient and more accessible therapy than the current standard of care, injectable erythropoiesis stimulating agents, or ESAs. 1,449 subjects have participated in 26 completed Phase 1 and 2 clinical studies for roxadustat in North America, Europe and Asia. These studies have demonstrated roxadustat's potential for a favorable safety and efficacy profile in anemic CKD patients, both those who are dialysis-dependent, or DD-CKD, and those who are not dialysis-dependent, or NDD-CKD. We, along with our collaboration partners Astellas Pharma Inc., or Astellas, and AstraZeneca AB, or AstraZeneca, have designed a global Phase 3 program to support regulatory approval of roxadustat in both NDD-CKD and DD-CKD patients in multiple geographies. Based on its multiple potential advantages, we believe there is a significant opportunity for roxadustat to address markets currently served by injectable ESAs. According to IMS Health, 2013 global ESA sales in all anemia indications totaled $8.6 billion. Further, roxadustat could expand access to anemia treatment for the growing global CKD population that is not adequately served by ESAs, and over time, address other anemia indications.

FG-3019 is our fully-human monoclonal antibody that inhibits the activity of connective tissue growth factor, or CTGF, a critical common element in the progression of fibrosis and associated serious diseases. In an animal model of lung fibrosis, FG-3019 reversed fibrosis. In Phase 2 IPF clinical studies, FG-3019 demonstrated the potential for stabilization of disease and, for the first time in human studies, reversal of lung fibrosis in some patients. In an open-label Phase 2 pancreatic cancer study of FG-3019 plus gemcitabine and erlotinib, FG-3019 demonstrated a dose-dependent improvement in one year survival rate. In ten Phase 1 and Phase 2 clinical studies of FG-3019 to date involving over 340 subjects, FG-3019 has been well tolerated across a wide range of doses studied, and there have been no dose-limiting toxicities observed to date.

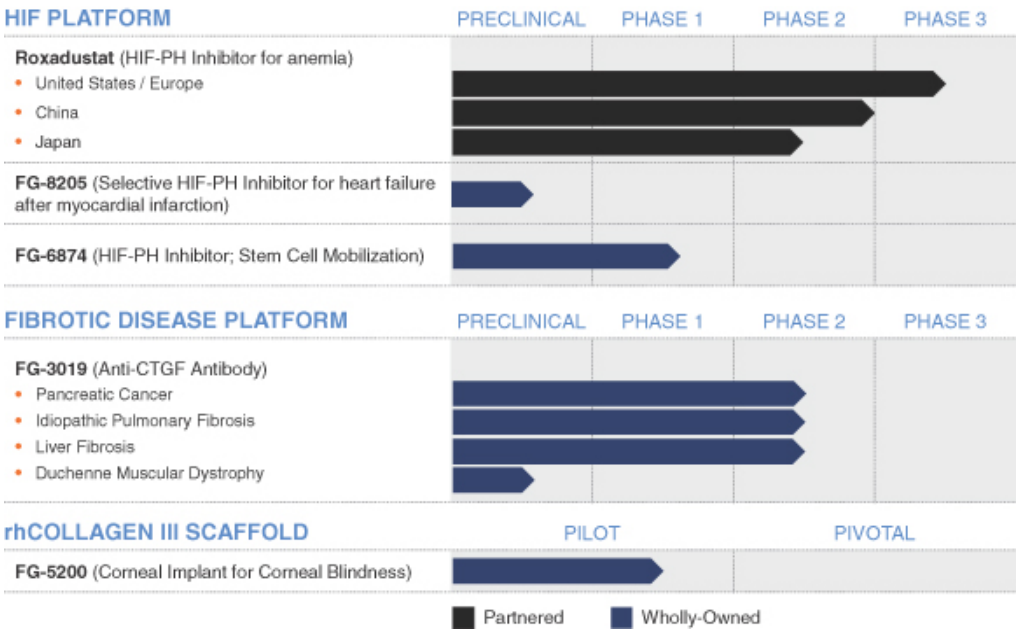
In IPF, average life expectancy at the time of confirmatory diagnosis is estimated to be between 3 to 5 years, with approximately two-thirds of IPF patients dying within five years of diagnosis. Decision Resources Group estimates that there will be approximately $4.6 billion in U.S. and European sales of IPF drugs in 2020. There is one drug that

has been approved in Europe, Canada, Japan and the United States, and a second drug that has been approved in the United States and submitted for accelerated approval in the European Union. However, we believe that FG-3019 could be the first product with disease-modifying activity.

In pancreatic ductal adenocarcinoma, or pancreatic cancer, the fourth leading cause of cancer deaths in the United States, average life expectancy with currently available anti-cancer agents is approximately six to nine months and 94% of patients die within five years of diagnosis. Decision Resources Group estimates that there will be approximately $1.3 billion in sales of pancreatic cancer drugs in 2022.

If FG-3019 can be shown in future clinical studies to safely and effectively address either IPF or pancreatic cancer, we believe that the commercial potential for this product candidate can be significant. To date, we have retained worldwide rights for FG-3019.

The chart below is a summary of our most advanced product candidates:



We are also currently pursuing the use of our proprietary type III recombinant human collagens in our biosynthetic corneal implant product candidate, FG-5200, for treatment of corneal blindness resulting from partial thickness corneal damage in China, and potentially other territories. FG-5200 is designed to serve as a temporary scaffold to allow for regeneration of the native corneal tissue. Our China subsidiary, FibroGen (China) Medical Technology Development Co., Ltd., or FibroGen China, has submitted a device classification application to the China Food and Drug Administration, or CFDA, to designate FG-5200 as a Domestic Class III medical device.

Overview of Roxadustat—Treatment of Anemia in CKD

Roxadustat is an orally administered small molecule that corrects anemia by a mechanism of action different from that of ESAs. Roxadustat activates a response that is naturally activated when the body responds to reduced oxygen

levels in the blood, such as when a person adapts to high altitude. The response activated by roxadustat involves the regulation of multiple, complementary processes to promote erythropoiesis and increase the blood's oxygen carrying capacity. This coordinated erythropoietic response includes both the stimulation of red blood cell progenitors by increasing the body's production of erythropoietin, or EPO, and an increase in iron availability for hemoglobin, or Hb, synthesis. Patients taking roxadustat typically have EPO levels within or near the physiologic range naturally experienced by people adapting to hypoxic conditions such as at high altitude, following blood donation or impaired lung function, such as pulmonary edema. By contrast, ESAs act only to stimulate red blood cell progenitors without a corresponding increase in iron availability, and are typically dosed well above the natural physiologic range of EPO. We believe these high ESA doses are a main cause of the significant safety issues that have been attributed to ESAs. Accordingly, the differentiated pharmacologic action of roxadustat has the potential to provide a safer and more effective treatment of anemia in CKD and potentially in other disorders.

Anemia is a serious medical condition in which patients have insufficient red blood cells and low levels of Hb, a protein in red blood cells that carries oxygen to cells throughout the body. Anemia is associated with increased risks of hospitalization, cardiovascular complications, need for blood transfusion, exacerbation of other serious medical conditions and death. In addition, anemia frequently leads to significant fatigue, cognitive dysfunction and decreased quality of life. The more severe the anemia, as measured by lower Hb levels, the greater the health impact on patients. Severe anemia is common in patients with CKD, cancer, myelodysplastic syndrome, or MDS, inflammatory diseases and other serious illnesses. Even when it accompanies these prevalent and serious diseases, anemia is often not effectively treated.

Anemia is particularly prevalent in patients with CKD, which is a critical healthcare problem that affects over 200 million people worldwide, and anemia significantly increases healthcare costs for those patients. CKD is generally a progressive disease characterized by the gradual loss of kidney function that may eventually lead to kidney failure, also known as end stage renal disease, or ESRD. Patients with ESRD require renal replacement therapy – either dialysis treatment or kidney transplantation. More advanced stages of kidney disease are associated with greater rates of anemia and more severe anemia. However, patients typically do not receive treatment for their anemia until they initiate dialysis, and as a result there is a significant need for a safe and effective therapy for patients with anemia in less advanced stages of CKD.

Currently available therapies to treat anemia in CKD include ESAs and blood transfusions. ESAs are currently the standard of care for effectively treating anemia in patients with CKD and must be administered intravenously or subcutaneously. ESAs are all synthetic recombinant versions of human EPO, a hormone that binds to receptors on red blood cell precursors in the bone marrow, thereby stimulating erythropoiesis and increasing Hb levels. Intravenous, or IV, iron is often required to supplement ESAs in dialysis patients in an effort to achieve adequate Hb response and to avoid iron depletion in the course of anemia therapy.

While injectable ESAs have been one of the most commercially successful drug classes, significant safety concerns have emerged from studies published in 2006 to 2009, resulting in several changes to ESA labeling. The package insert for ESAs currently includes a "Black Box" warning, which was mandated by the U.S. Food and Drug Administration, or FDA, and states that ESAs increase the risk of death and major adverse cardiovascular events, such as myocardial infarction, stroke, venous thromboembolism and thrombosis of vascular access. Tumor progression or recurrence in patients with cancer has also been associated with ESAs and is reflected in the Black Box warning. Secondary analyses of these studies suggest that the safety concerns associated with ESAs, particularly the increased cardiovascular risk, may result from the high ESA doses or circulating levels of ESAs, rather than the achieved Hb levels.

Potential Advantages of Roxadustat Over the Current Standard of Care

Cardiovascular Safety Advantages

In addition to being linked to an increased incidence of major adverse cardiovascular events as described above, ESAs are associated with an increased risk for new onset hypertension and exacerbation of pre-existing hypertension, increased platelet counts and thromboembolic events, including stroke, vascular access thrombosis (where the dialysis access shunt is blocked due to clotting) and blood clots in the leg.

Safety analyses of our Phase 2 trials did not reveal any association between the roxadustat dose or the associated rate of Hb rise or Hb level and the rates of cardiovascular events, new onset hypertension, exacerbation of pre-existing hypertension, increased platelet counts or thrombosis. In addition, we observed a reduction in average total cholesterol and an improvement in average HDL / LDL ratio versus baseline.

Correcting Anemia within or near Physiologic EPO Levels

In order to be effective, ESAs typically require doses well above physiologic range. By contrast, our clinical trials to date have shown that roxadustat can treat anemia in CKD by causing an increase of blood EPO levels that are typically within or near the physiologic range observed in people who are adapting to high altitude, following blood donation or impaired lung function, such as pulmonary edema. The ability of roxadustat to treat anemia without causing supraphysiologic blood levels of EPO may provide significant safety benefits over ESAs.

Anemia Correction for Patient Populations That are Hyporesponsive to ESAs

CKD patients receive a wide range of ESA doses. Higher doses, and thus higher circulating levels of ESAs, are typically required for patients within the first four months of initiating dialysis, or incident dialysis, suffering from chronic inflammation, undergoing surgery or with acute illness. These higher doses are not only associated with increased safety risks, but also may not be sufficient to effectively raise Hb levels to target in some patients.

In our Phase 2 studies, doses of roxadustat that corrected anemia in incident dialysis patients and patients with elevated markers for inflammation were similar to doses that corrected anemia in non-incident, or stable, dialysis patients and patients without elevated markers for inflammation. We believe effective doses of roxadustat are likely to be comparable in these CKD patient subsets because roxadustat can overcome the direct suppressive effects of inflammatory cytokines on erythropoiesis, can increase iron availability through an increase in iron absorption from the gastrointestinal, or GI, tract, and can increase the release of iron from intracellular stores and the transport of iron to the bone marrow.

Anemia Correction Without the Need for IV Iron

Our Phase 2 studies have shown roxadustat to correct anemia without the need for concomitant administration of IV iron. We believe this benefit results from roxadustat’s effects on iron metabolism described above. In these studies, roxadustat corrected anemia without IV iron in stable and incident dialysis patients and patients with elevated markers for inflammation. In contrast, IV iron supplementation is required to support anemia correction in a majority of U.S. dialysis patients receiving ESAs, and IV iron is associated with a variety of risks, including hypersensitivity (which can be life-threatening), infection, skin problems, hypotension and gastrointestinal symptoms.

Reimbursement and Convenience Advantages

ESAs and oral equivalents of ESAs are included in the bundled payment system in the DD-CKD setting and reimbursed under Medicare Part B in the NDD-CKD setting. Based on roxadustat’s differentiated mechanism of action and therapeutic effects, it is not known whether it will be included in or excluded from the bundle in the DD-CKD setting. Agents that have no IV equivalent in the bundle are currently expected to be excluded from the bundle until 2024.

In the NDD-CKD setting, we expect that roxadustat, an oral treatment, should be subject to Medicare Part D, which would allow physicians to prescribe roxadustat without the financial and reimbursement risk associated with purchasing and storing injectable ESAs. We believe that this should encourage significantly greater usage outside of the dialysis setting.

In addition to safety, labeling, reimbursement and efficacy limitations, ESAs must be administered intravenously or subcutaneously, often with IV iron in order to be effective at treating to target Hb levels. Roxadustat, in contrast, is a small molecule administered orally and is therefore more convenient, particularly for the NDD-CKD population, the peritoneal dialysis population and other non-CKD anemia patients who are not already regularly visiting hospitals or dialysis centers.

We also believe that roxadustat's potential pharmacoeconomic advantages over ESAs may include safety (due to a potential decrease in cardiovascular events and consequently lower associated treatment costs), lower administrative cost, and reduction or elimination of the cost of IV iron and potentially other medications. These pharmacoeconomic advantages may help support reimbursement worldwide, including in Europe and China.

Overview of Roxadustat Clinical Studies and Development Strategy

In our completed Phase 2 studies, we accomplished the following critical objectives:

- Identified optimal roxadustat dosing regimens for anemia correction and maintenance of Hb response.
- Demonstrated roxadustat's potential efficacy in the treatment of anemia in both NDD-CKD and DD-CKD patients, including incident dialysis patients, the most unstable and high risk CKD patient population.
- Generated substantial safety data indicating that roxadustat is well tolerated, appears safe and could offer an improved cardiovascular profile relative to ESAs. Including our Phase 1, 2 and 3 studies, 1,503 subjects have been exposed to roxadustat.

In support of our initial efforts for regulatory approval in the United States and Europe, we have initiated with our partners our global Phase 3 clinical program for roxadustat in North America, Europe and Asia Pacific, with plans for expanding to other regions. We currently expect FibroGen China to begin a separate Phase 3 program in China in the first half of 2015, and Astellas is responsible for Phase 3 studies upon completion of Phase 2 studies in Japan. We believe that our ongoing global Phase 3 program, with a combined target enrollment of approximately 7,000 – 8,000 patients, is the largest Phase 3 program ever conducted for an anemia product candidate. Most of the primary and secondary efficacy measures that we plan to evaluate in our Phase 3 studies were evaluated previously in our Phase 2 studies. Our Phase 3 program will study multiple patient populations, including stable dialysis and incident dialysis, and will include multiple NDD-CKD studies comparing roxadustat against placebo. Our Phase 3 program is also designed and sized for, and will incorporate, major adverse cardiac events, or MACE, composite safety endpoints that we believe will be required for approval in the United States for all new anemia therapies. Additionally, our Phase 3 studies will incorporate dosing regimens that were extensively tested in our six Phase 2 studies.

Our Collaboration Partnerships for Roxadustat

We are currently developing and commercializing roxadustat for anemia globally in collaboration with our partners. We have two agreements under which we provided Astellas the right to develop and commercialize roxadustat and other compounds for anemia in Japan, Europe, the Commonwealth of Independent States, or CIS, the Middle East and South Africa.

We also have two agreements under which we provided AstraZeneca the right to develop and commercialize roxadustat for anemia, one for China, and one for the United States and all other countries not previously licensed to Astellas, or the U.S. / RoW. Payments under these agreements include over $500 million in upfront, non-contingent and other payments received or expected to be received prior to the first United States approval, excluding development cost reimbursement.

So long as the collaboration agreements remain in effect, we expect our CKD anemia program to be fully funded through launch of roxadustat through the payment of upfront, non-contingent and milestone payments, and development cost reimbursement. The total payments to us under these agreements are summarized in the following table:

	Astellas	**AstraZeneca**
Territories	Japan, Europe, CIS, Middle East, South Africa	U.S., China, RoW
Upfront and Milestone Payments		
Upfront and other non-contingent payments	$360.1M	$402.2M*
Potential Milestone Payments:		
Development and Regulatory	$542.5M	$571.0M*
Commercial-based	$15.0M	$652.5M
Total	$557.5M	$1,223.5M
Total Potential Upfront, Non-contingent and Milestone Payments	$917.6M	$1,625.7M
Development Cost Reimbursement		
(for territorial approval)	*Japan*: 100% *Europe:* 50%**	*China*: 50% *U.S.:* 50% up to FibroGen cap of $116.5M *** 100% above $116.5M *RoW:* 100%***
Consideration for Product Sales		
Transfer Price Payments	Low 20% of net sales	*U.S. / RoW:* Low-mid single digit % of net sales
Royalty Payments	N/A	*U.S. / RoW:* Low 20% of net sales
Profit Share		*China:* 50/50 profit share
Equity Investment		$20.0M****

* *A $62 million time-based development milestone became non-contingent as of July 30, 2014*

** *Includes 50% of U.S. costs under agreed development plan*

*** *Includes U.S. and Europe costs not borne by Astellas; $116.5 million is less than 50% of the expected CKD anemia development costs*

**** *Concurrent private placement of our common stock with an aggregate purchase price of $20 million at a price per share equal to the initial public offering price*

In addition, Astellas has separately invested a total of $80.5 million in the preferred stock of FibroGen, Inc. to date.

Roxadustat for Treatment of Anemia in China

We believe there is a particularly significant unmet medical need for the treatment of anemia in CKD in China. Anemia is undertreated in the rapidly growing DD-CKD population due in part to the significant safety concerns relating to the high doses of ESAs required to treat some patients to target Hb levels, the lack of IV iron use and reimbursement limitations. Anemia is largely not treated in the NDD-CKD population, which includes patients who are eligible for dialysis but are not dialyzed, due in part to logistical and financial barriers to treatment with ESAs, as well as the insufficient dialysis infrastructure.

In the context of the rapidly growing Chinese pharmaceutical market, we believe that the demand for anemia therapy will continue to grow as a result of an expanding CKD population, and the central government's mandate to make dialysis, which is still in the early stages of infrastructure development, more available through expansion of government reimbursement and build-out of dialysis facilities. We believe that roxadustat is a particularly promising product candidate for this market.

We plan to seek product approval from the CFDA as a Domestic "Class 1.1" Drug through our China subsidiary, FibroGen (China) Medical Technology Development Co., Ltd., or FibroGen China. We believe the domestic pathway represents the fastest route for bringing roxadustat to market.

We have completed our Phase 1 and Phase 2 clinical trials in China and expect to start our Phase 3 clinical trials in China in the first half of 2015. These Phase 3 trials are expected to continue to be conducted in parallel with, but independently of, the other trials conducted in the global development program, although all available safety data from the global program will be submitted for the China NDA. We plan to perform two Phase 3 trials in China to support approval of roxadustat for the treatment of anemia in DD-CKD and NDD-CKD patients. Based on discussions with the CFDA, the Phase 3 trials are designed to confirm Phase 2 results and have similar trial design and endpoints, except that they are expected to include more patients and longer dosing durations.

Overview of FG-3019

FG-3019 was developed by FibroGen to inhibit the activity of CTGF and its central role in the progression of serious diseases associated with fibrosis. Our data to date indicate that FG-3019 is a promising and highly differentiated product candidate with broad potential to treat a number of fibrotic diseases and cancers. FG-3019 has received orphan drug designation in IPF in the United States.

We are currently conducting an extension study for an open-label Phase 2 trial in IPF, a randomized, double-blind, placebo-controlled Phase 2 trial in IPF, a randomized, open-label Phase 2 trial in pancreatic cancer and a randomized trial in liver fibrosis. We have completed the initial one-year treatment portion of our open-label Phase 2 trial in IPF and an open-label, dose escalation Phase 2 trial in pancreatic cancer. In ten Phase 1 and Phase 2 clinical studies involving FG-3019 to date, including more than 340 patients who were treated with FG-3019 (146 patients dosed for more than 6 months), FG-3019 has been well tolerated across the range of doses studied, and there have been no dose-limiting toxicities seen thus far.

To date, we have retained exclusive worldwide rights for FG-3019. We plan to retain commercial rights to FG-3019 in North America and will also continue to evaluate the opportunities to establish co-development partnerships for FG-3019 as well as commercialization collaborations for territories outside of North America.

Idiopathic Pulmonary Fibrosis

Idiopathic pulmonary fibrosis, or IPF, is a form of progressive pulmonary fibrosis, or abnormal scarring, which destroys the structure and function of the lungs. Current approved therapies are unable to reverse this fibrotic process. Over a period of just a few years, patients with IPF experience debilitating symptoms, including shortness of breath and difficulty performing routine functions, such as walking and talking. Other symptoms include chronic

dry, hacking cough, fatigue, weakness, discomfort in the chest, loss of appetite, and rapid weight loss. Average life expectancy at the time of confirmatory diagnosis of IPF is estimated to be between 3 to 5 years, with approximately two-thirds of patients dying within five years of diagnosis. Thus, the survival rates are comparable to some of the most deadly cancers. The United States prevalence and incidence of IPF are estimated to be 44,000 to 135,000 cases and 21,000 new cases per year, respectively. We believe that with the availability of technology to enable more accurate diagnoses, the number of individuals diagnosed with IPF annually will continue to increase.

Pirfenidone has been approved to treat IPF in Europe, Canada, Japan and the United States. According to the FDA advisory committee submission by its sponsor, pirfenidone has been shown to have a modest effect on slowing down the progression of the disease as measured by forced vital capacity, or FVC, in a minority (less than 15%) of patients. Nintedanib has also been approved in the United States and has been submitted for accelerated approval in the EU. We believe there remains an unmet need for a product like FG-3019 which has the potential to stabilize or reverse lung fibrosis and thus slow or stop the deterioration of, or improve, lung function in patients with IPF.

We have completed one year of dosing in two dose-cohorts in an open-label Phase 2 study of FG-3019 in patients with IPF. In addition to monitoring changes in pulmonary function, we incorporated the use of quantitative high resolution computed tomography, or HRCT, to assess changes in fibrosis over the course of the study. Recent publications based on similar quantitative HRCT methods have identified an association between worsening pulmonary fibrosis (as measured by HRCT) and mortality in IPF. The data from the open-label Phase 2 FG-3019 trial show that fibrosis was reversed or stabilized in a substantial subset of IPF patients (38%) after 48 weeks of treatment. To our knowledge, this is the first demonstration of pulmonary fibrosis reversal in any clinical study of IPF.

We are currently conducting a randomized, double-blind, placebo-controlled Phase 2 study to evaluate the safety and efficacy of FG-3019 in approximately 136 IPF patients with mild to moderate disease. As with our ongoing open-label Phase 2 trial, the primary efficacy endpoint is change in FVC from baseline. Secondary endpoints are extent of pulmonary fibrosis as measured by quantitative HRCT, other pulmonary function assessments and measures of health-related quality of life. The study is currently enrolling.

Pancreatic Cancer

Pancreatic cancer has a historic median survival of approximately six to nine months when treated with currently approved drugs. In desmoplastic, or fibrotic, cancers such as pancreatic cancer, we believe that CTGF expression in tumor-associated fibrous tissue promotes abnormal proliferation of stromal cells and tumor cells, induces extracellular-matrix, or ECM, deposition that provides a substrate for tumor cell adherence, promotes angiogenesis and promotes metastasis by enhancing cell motility, invasion and survival. Studies in a transgenic mouse model of pancreatic cancer indicate that treatment with FG-3019 in combination with chemotherapy can enhance the efficacy of chemotherapy and significantly improve survival.

Pancreatic cancer is the fourth leading cause of cancer deaths in the United States. In the United States, the prevalence of pancreatic cancer is estimated to be 44,000 and there are projected to be approximately 46,000 new cases of pancreatic cancer and approximately 39,000 deaths from the disease in 2014. Pancreatic cancer is aggressive and typically not diagnosed until it is incurable. Most patients are diagnosed after the age of 45, and 94% of patients die within five years from diagnosis.

The majority of pancreatic cancer patients are treated with chemotherapy, but this cancer is highly resistant to chemotherapy. Approximately 20% are treated with surgery; however, even for those with successful surgical resection, the median survival is approximately 2 years. Radiation may be used for locally advanced tumors, but it is not curative.

Several anti-cancer agents have been approved to treat pancreatic cancer. However, the duration of effect of these treatments is limited. In 1996, gemcitabine was approved for pancreatic cancer based on the demonstrated improvement in median overall survival from four to six months. Erlotinib was approved in 2005 after demonstrating an additional 10 days of survival. Nab-paclitaxel in combination with gemcitabine was recently approved by the FDA for the treatment of pancreatic cancer, having demonstrated median survival of 8.5 months. The limitations of these drugs illustrate that progress in pancreatic cancer has been slow and incremental, and there remains a need for substantial improvement in patient survival and quality of life.

We have completed an open-label Phase 2 dose finding trial of FG-3019 combined with gemcitabine plus erlotinib in patients with previously untreated locally advanced (stage 3) or metastatic (stage 4) pancreatic cancer. FG-3019 demonstrated a dose-dependent improvement in one year survival rate. We have recently begun an open-label, randomized Phase 2 trial of FG-3019 combined with gemcitabine plus nab-paclitaxel chemotherapy versus the chemotherapy regimen alone in patients with marginally inoperable pancreatic cancer that has not been previously treated. Approximately 40 patients are expected to be treated and the number may be increased based on preliminary results. The overall goal of the trial is to determine whether FG-3019 in combination with other drug treatments can convert inoperable pancreatic cancer to operable cancer. Tumor removal is the only chance for cure of pancreatic cancer, but only 15% to 20% of patients are eligible for surgery. The use of an anti-fibrotic agent in combination with chemotherapy may shrink the tumor size enough to enable surgical removal without compromising major blood vessels or other important anatomic structures.

We also plan to perform a randomized Phase 2 trial of FG-3019 combined with gemcitabine and nab-paclitaxel compared to the chemotherapy regimen alone to assess disease progression and survival in patients with previously untreated metastatic pancreatic cancer. The overall goal is to confirm our open-label Phase 2 data that suggest combinations of FG-3019 and chemotherapy may increase survival. We plan to open the study for enrollment in the first half of 2015.

Our Strategy

We intend to leverage our extensive experience in fibrosis and HIF biology to build a successful biopharmaceutical company with a strong pipeline of products and product candidates for the treatment of anemia, fibrosis, cancer, corneal blindness and other serious unmet medical needs. Our near-term and long-term strategies include:

- Develop and, if approved, commercialize roxadustat with the assistance of our collaboration partners in the United States, Europe, China and Japan and the rest of the world, including enrolling and completing our global Phase 3 program in CKD anemia and seeking regulatory approval for roxadustat in multiple geographies, including as a Domestic Class 1.1 therapeutic in China.
- Enroll and complete our Phase 2 clinical studies of FG-3019 in IPF and pancreatic cancer, and initiate, enroll, and complete subsequent Phase 3 pivotal studies of FG-3019 in IPF and pancreatic cancer in the United States and potentially outside of the United States.
- Continue to pursue an extensive and multi-layered patent portfolio to protect our technologies and product candidates.
- Explore potential partnering opportunities for the development and commercialization of FG-3019 in certain territories.
- Develop FG-5200 for treatment of corneal blindness resulting from partial thickness corneal damage in China and elsewhere in the world.
- Strategically invest in the research and development of additional anemia indications for roxadustat, which may include chemotherapy-induced anemia, anemia relating to inflammatory diseases, myelodysplastic syndrome and surgical procedures requiring transfusions.

- Use our extensive HIF platform to increase our pipeline by exploring proof-of-concept with our HIF-PH selective inhibitors, such as FG-8205, and our other HIF-PH inhibitors, including FG-6874 (which has completed single and multiple ascending dose Phase 1 clinical studies in Singapore), in indications such as hematopoietic stem cell mobilization, peri-operative anemia, heart failure post-myocardial infarction, inflammatory bowel disease, diabetes, cancer and wound healing.
- Expand our efforts in fibrosis by pursuing additional indications for FG-3019, which may include Duchenne muscular dystrophy, scleroderma lung disease, liver fibrosis associated with graft injection, non-alcoholic steatohepatitis, diabetic nephropathy, focal segmental glomerular sclerosis, congestive heart failure, pulmonary arterial hypertension and cancers such as melanoma, ovarian, breast, and squamous cell lung carcinoma.

Financial Overview

Our revenue to date has been generated primarily from collaboration and license revenue pursuant to our collaboration agreements with Astellas and AstraZeneca. We have not generated any commercial product revenue. As of September 30, 2014, we had $175.5 million of cash, cash equivalents and short-term investments and an accumulated deficit of $271.7 million.

Risk Factors Summary

Our business is subject to numerous risks and uncertainties, including those highlighted in the section entitled “Risk Factors” immediately following this prospectus summary. These risks include, among others, the following:

- We have incurred significant losses since our inception and anticipate that we will continue to incur losses for the foreseeable future; we may require additional financings in order to fund our operations;
- All of our recent revenue has been received from our roxadustat collaboration partners; if any of the agreements with these collaboration partners were to terminate we would require substantial additional funding;
- If we are unable to achieve development and regulatory milestones under our collaboration agreements, our revenues may decrease and our activities may fail to lead to commercialized products;
- We are substantially dependent on the success of our lead product candidate, roxadustat, and our second compound in development, FG-3019, and their clinical and commercial success will depend on a number of factors, many of which are beyond our control;
- We may be unable to obtain regulatory approval for our product candidates, or such approval may be delayed or limited, due to a number of factors, many of which are beyond our control;
- Our Phase 2 results to date for roxadustat and FG-3019 may not be indicative of the results that may be obtained in larger clinical studies required for approval;
- We do not know whether our ongoing or planned Phase 3 clinical studies in roxadustat or Phase 2 clinical studies in FG-3019 will need to be redesigned based on interim results, be able to achieve sufficient enrollment or be completed on schedule, if at all;
- Our product candidates may cause, or have attributed to them, undesirable side effects or have other properties that delay or prevent their regulatory approval or limit their commercial potential;
- If we or third party manufacturers on which we rely cannot manufacture our product candidates and/or products at sufficient yields, we may experience delays in development, regulatory approval and commercialization;

- If our collaborations with Astellas or AstraZeneca were terminated, or if Astellas of AstraZeneca were to prioritize other initiatives over their collaborations with us, whether as a result of a change of control or otherwise, our ability to successfully develop and commercialize our lead product candidate, roxadustat, would suffer;
- We currently rely, and expect to continue to rely, on third parties to conduct many aspects of our clinical studies, and these third parties may not perform satisfactorily;
- Certain of the components of our product candidates are acquired from single-source suppliers and have been purchased without long-term supply agreements;
- If our efforts to protect our proprietary technologies are not adequate, we may not be able to compete effectively in our market;
- Intellectual property disputes with third parties and competitors may be costly and time consuming, and may negatively affect our competitive position;
- We are establishing international operations and seeking approval to commercialize our product candidates outside of the United States, in particular in China, and a number of risks associated with international operations could materially and adversely affect our business;
- We are building our own manufacturing facility in China to produce roxadustat and clinical trial material for our corneal program; as an organization, we have limited experience in the construction or operation of a manufacturing plant; accordingly, we cannot assure you we will be able to meet regulatory requirements to operate our plant and to sell our products;
- Our decision to seek approval in China for roxadustat as a domestic new drug may not be accepted, which would result in additional delay and expense; and
- The market price of our common stock may be highly volatile, and you may not be able to resell your shares at or above the initial public offering price.

Concurrent Private Placement

AstraZeneca, one of our collaboration partners, has agreed to purchase from us concurrently with the closing of this offering in a private placement shares of our common stock with an aggregate purchase price of $20 million at a price per share equal to the initial public offering price.

Our Corporate Information

We were incorporated in 1993 in Delaware. Our headquarters are located at 409 Illinois Street, San Francisco, CA 94158 and our telephone number is (415) 978-1200. Our website address is www.FibroGen.com. The information contained on, or that can be accessed through, our website is not part of, and is not incorporated into, this prospectus.

We are an “emerging growth company,” as defined in the Jumpstart Our Business Startups Act of 2012, or the JOBS Act. As such, we are eligible for exemptions from various reporting requirements applicable to other public companies that are not emerging growth companies, including, but not limited to, not being required to comply with the auditor attestation requirements of Section 404 of the Sarbanes-Oxley Act of 2002 and reduced disclosure obligations regarding executive compensation. Under the JOBS Act, emerging growth companies can delay adopting new or revised accounting standards issued subsequent to the enactment of the JOBS Act until such time as those standards apply to private companies. We have irrevocably elected not to avail ourselves of this exemption from new or revised accounting standards, and, therefore, will be subject to the same new or revised accounting standards as other public companies that are not emerging growth companies. We will remain an emerging growth

company until the earliest of (1) the last day of the fiscal year (a) following the fifth anniversary of this offering, (b) in which we have total annual gross revenue of at least $1.0 billion, or (c) in which we are deemed to be a large accelerated filer, which means we have been public for at least twelve months and the market value of our common stock that is held by non-affiliates exceeds $700 million as of the prior June 30th, and (2) the date on which we have issued more than $1.0 billion in non-convertible debt securities during the prior three-year period.

“FibroGen,” the FibroGen logo and other trademarks or service marks of FibroGen, Inc. appearing in this prospectus are the property of FibroGen, Inc. This prospectus contains additional trade names, trademarks and service marks of others, which are the property of their respective owners. We do not intend our use of display of other companies’ trade names, trademarks or service marks to imply a relationship with, or endorsement or sponsorship of us by, these other companies.

The Offering	
Common stock offered by us	7,100,000 shares
Common stock sold in the concurrent private placement	AstraZeneca, one of our collaboration partners, has agreed to purchase from us concurrently with the closing of this offering in a private placement shares of our common stock with an aggregate purchase price of $20 million at a price per share equal to the initial public offering price, or 1,142,857 shares assuming an initial public offering price of $17.50 per share, which is the midpoint of the range set forth on the cover page of this prospectus. We will receive the full proceeds from the sale and will not pay any underwriting discounts or commissions with respect to the shares that are sold in the private placement. The sale of these shares to AstraZeneca will not be registered in this offering and these shares will be subject to a 180-day lock-up agreement with the underwriters in this offering as well as restrictions on sale for two years pursuant to AstraZeneca's agreement with us. We refer to the private placement of these shares of common stock as the "concurrent private placement".
Common stock to be outstanding after this offering and the concurrent private placement	55,671,852 shares (56,736,852 shares if the underwriters' option to purchase additional shares is exercised in full)
Underwriters' option to purchase additional shares of common stock offered by us	1,065,000 shares
Use of proceeds	We estimate the net proceeds to us from this offering, excluding the proceeds from the concurrent private placement, to be approximately $111.8 million, assuming an initial public offering price of $17.50 per share, which is the midpoint of the range set forth on the cover page of this prospectus, after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us. Our proceeds from the sale of common stock sold in the concurrent private placement will be $20 million. See the section of the prospectus captioned "Use of Proceeds." The principal purposes of this offering are to create a public market for our common stock and thereby facilitate access to the public equity markets, increase our visibility in the marketplace and obtain additional capital. We believe our existing cash and cash equivalents, short-term and long-term investments and payments due under our license and collaboration agreements will be sufficient to meet our anticipated working capital and capital expenditure needs for at least the next 12 months. Additionally, if roxadustat is successful in further clinical development, based on our current development plans, expected payments under our existing license and collaboration agreements may be sufficient to fund our development of roxadustat through commercialization. We intend to use a portion of the net proceeds

	from this offering and the concurrent private placement to commercialize our unpartnered product candidates such as FG-3019, corneal implants and other HIF-PH inhibitors, as well as for general corporate purposes. These uses include meeting any short term liquidity needs pending receipt of amounts due or subject to reimbursement under our license and collaboration agreements. If the development cost of roxadustat were to exceed our expectations and not be funded by our collaboration partners, or collaboration receipts were less than we anticipate, or if a portion of our existing cash and cash equivalents are used to develop other product candidates, we may use a more substantial portion of the net proceeds from this offering and the concurrent private placement to fund our roxadustat development costs through commercialization. We may also use a portion of the net proceeds to acquire complementary businesses, products or technologies, although we have no present commitments or agreements for any specific acquisitions. Accordingly, we will have broad discretion over the uses of the net proceeds from this offering and the concurrent private placement.
Directed Share Program	At our request, the underwriters have reserved up to 5% of the shares being offered by this prospectus for sale at the initial public offering price to certain individuals who are associated with us through a directed share program. None of our directors, executive officers or employees will participate in the directed share program. The number of shares available for sale to the general public will be reduced by the number of directed shares purchased by participants in the program. Any directed shares not purchased will be offered by the underwriters to the general public on the same basis as all other shares offered.
Risk factors	See the section of the prospectus captioned “Risk Factors” beginning on page 18 and the other information included in this prospectus for a discussion of factors you should carefully consider before deciding to invest in our common stock.
Proposed Listing and Trading symbol	We intend to list our common stock on the NASDAQ Global Select Market under the symbol “FGEN”.

The number of shares of our common stock to be outstanding after this offering and the concurrent private placement is based on 47,428,995 shares of common stock outstanding as of September 30, 2014, which reflects and assumes the conversion of all shares of convertible preferred stock (Senior Preferred Stock and Junior Preferred Stock) and excludes the following shares:

- 12,970,404 shares of common stock issuable upon the exercise of outstanding stock options issued as of September 30, 2014 pursuant to our 1999 and 2005 Stock Plans at a weighted-average exercise price of $5.56 per share;
- 1,600,000 shares of common stock to be reserved for future issuance under our 2014 Employee Stock Purchase Plan, or ESPP, as of the date the registration statement of which this prospectus forms a part if declared effective by the SEC, as well as any automatic increases in the number of shares of common stock reserved for future issuance under ESPP;

- 7,606,104 shares of common stock to be reserved for future issuance under our 2014 Plan as of the date the registration statement of which this prospectus forms a part is declared effective by the SEC (which shares are as of September 30, 2014 and are currently reserved for future grant under our 2005 Plan and will cease to be reserved under our 2005 Plan immediately prior to the time our 2014 Plan becomes effective) as well as any automatic increases in the number of shares of common stock reserved for future issuance under the 2014 Plan;
- 173,116 shares of common stock issuable upon exercise of common stock warrants outstanding as of September 30, 2014 at a weighted-average exercise price of $7.58 per share; and
- 958,996 shares of common stock issuable upon the exchange of outstanding preferred stock issued by our European subsidiary, FibroGen Europe Oy, or FibroGen Europe.

Unless otherwise indicated, all information in this prospectus reflects and assumes the following:

- an initial public offering price of $17.50 per share (which represents the midpoint of the estimated offering price range set forth on the cover of this prospectus)
- the conversion of all outstanding shares of our convertible preferred stock (Senior Preferred Stock and Junior Preferred Stock) into an aggregate of 33,919,954 shares of our common stock, which will occur immediately prior to the completion of this offering;
- no exercise by the underwriters of their option to purchase up to 1,065,000 additional shares of our common stock in this offering; and
- the filing and effectiveness of our amended and restated certificate of incorporation immediately prior to the completion of this offering.

On November 10, 2014, the Company effected a 1-for-2.5 reverse split of its common stock. Upon the effectiveness of the reverse stock split, (i) every 2.5 shares of outstanding common stock were combined into one share of common stock, (ii) the number of shares of common stock for which each outstanding option or warrant to purchase common stock is exercisable was proportionally decreased on a 1-for-2.5 basis, (iii) the exercise price of each outstanding option or warrant to purchase common stock was proportionately increased on a 1-for-2.5 basis, (iv) the exchange ratio for each share of outstanding FibroGen Europe share of stock which is exchangeable into the Company’s common stock was proportionately reduced on a 1-for-2.5 basis, and (v) the conversion ratio for each share of outstanding preferred stock which is convertible into the Company’s common stock was proportionately reduced on a 1-for-2.5 basis. All of the outstanding common stock share numbers (including shares of common stock which the Company’s outstanding preferred stock shares are convertible into), common stock warrants, share prices, exercise prices and per share amounts have been adjusted in this prospectus, on a retroactive basis, to reflect this 1-for-2.5 reverse stock split for all periods presented. The par value per share and the authorized number of shares of common stock and preferred stock were not adjusted as a result of the reverse stock split.

Summary Financial Data

The following tables summarize our financial data and should be read together with the sections in this prospectus entitled "Selected financial data" and "Management's Discussion and Analysis of Financial Condition and Results of Operations" and our financial statements and related notes included elsewhere in this prospectus.

We have derived the consolidated statement of operations data for the years ended December 31, 2012 and 2013 from our audited financial statements included elsewhere in this prospectus. We have derived the statement of operations data for the nine months ended September 30, 2013 and 2014 and the balance sheet data as of September 30, 2014 from our unaudited interim consolidated financial statements included elsewhere in this prospectus. We have prepared the unaudited interim consolidated financial statements on the same basis as the audited financial statements and have included, in our opinion, all adjustments, consisting only of normal recurring adjustments, that we consider necessary for a fair statement of the financial information set forth in those statements. Our historical results are not necessarily indicative of the results that should be expected in the future, and our unaudited interim results are not necessarily indicative of the results that should be expected for the full year or any other period.

	Years ended December 31,		Nine Months ended September 30,	
	2012	2013	2013	2014
	(in thousands, except per share data)			
Result of Operations				
Revenue:				
License and milestone revenue	$ 62,845	$ 94,961	$86,035	$ 106,175
Collaboration services and other revenue	3,088	7,209	3,745	15,321
Total revenue	65,933	102,170	89,780	121,496
Operating expenses:				
Research and development (1)	74,222	85,710	56,276	99,536
General and administrative (1)	18,934	24,409	16,498	24,088
Total operating expenses	93,156	110,119	72,774	123,624
Income (loss) from operations	(27,223)	(7,949)	17,006	(2,128)
Total interest and other, net	(5,448)	(6,994)	(5,176)	(6,816)
Income (loss) before income taxes	(32,671)	(14,943)	11,830	(8,944)
Benefit from income taxes	100	—	—	—
Net income (loss)	$(32,571)	$ (14,943)	$11,830	$ (8,944)
Net income (loss) per share—basic (2)	$ (2.48)	$ (1.13)	$ 0.04	$ (0.67)
Net income (loss) per share—diluted (2)	$ (2.48)	$ (1.13)	$ 0.03	$ (0.67)
Weighted-average number of common shares used in net income (loss) per share—basic (2)	13,128	13,186	13,181	13,355
Weighted-average number of common shares used in net income (loss) per share—diluted (2)	13,128	13,186	19,919	13,355
Pro forma net loss per share—basic (unaudited) (3)		$ (0.32)		$ (0.19)
Pro forma net loss per share—diluted (unaudited) (3)		$ (0.32)		$ (0.19)
Pro forma weighted-average number of common shares used in net loss per share—basic (unaudited) (3)		47,106		47,275
Pro forma weighted-average number of common shares used in net loss per share—diluted (unaudited) (3)		47,106		47,275

(1) Stock-based compensation expense is included in our results of operations as follows (in thousands):

	Years Ended December 31,		Nine Months Ended September 30,	
	2012	2013	2013	2014
Research and development	$2,277	$1,925	$ 1,446	$ 5,775
General and administrative	2,284	1,519	1,170	3,959
Total stock-based compensation expense	$4,561	$3,444	$ 2,616	$ 9,734

(2) See Note 10 to our consolidated financial statements appearing elsewhere in this prospectus for a description of the method used to calculate basic and diluted net income (loss) per share of common stock.

(3) Pro forma basic and diluted net loss per share of common stock is calculated by dividing net loss attributable to common stockholders, by the pro forma weighted-average number of common shares outstanding. The pro forma weighted-average number of common shares includes the weighted-average shares of common stock used to compute basic net loss per share plus the assumed conversion of all outstanding convertible preferred stock. The pro forma weighted-average number of common shares do not include the effect of 958,996 shares of preferred stock held by investors in FibroGen Europe that are exchangeable at the option of the holders into FibroGen, Inc. common stock.

The pro forma balance sheet data set forth below give effect to an assumed conversion as of September 30, 2014 of all outstanding shares of our Senior Preferred Stock and Junior Preferred Stock into 33,919,954 shares of our common stock. See Note 10 to our consolidated financial statements appearing elsewhere in this prospectus for a description of the method used to calculate pro forma basic and diluted net income (loss) per share.

The pro forma as adjusted balance sheet data set forth below give further effect to our issuance and sale of 8,242,857 shares of our common stock in this offering and the concurrent private placement at an assumed initial public offering price of $17.50 per share, which is the midpoint of the range set forth on the cover page of this prospectus, after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us.

	As of September 30, 2014		
	Actual	Pro forma	Pro forma as adjusted
		(in thousands)	
Balance Sheet Data:			
Cash and cash equivalents	$ 153,889	$ 153,889	$ 287,829(1)
Short-term and long-term investments	21,826	21,826	21,826
Working capital	146,545	146,545	281,112
Total assets	344,383	344,383	473,308
Deferred revenue	71,486	71,486	71,486
Lease financing obligations	96,975	96,975	96,975
Product development obligations	17,094	17,094	17,094
Senior Preferred Stock	168,436	—	—
Junior Preferred Stock	136,313	—	—
Accumulated deficit	(271,723)	(271,723)	(271,723)
Total stockholders' equity (deficit)	(86,662)	81,774	213,520
Non-controlling interests	27,875	27,875	27,875
Total equity (deficit)	(58,787)	109,649	241,395

(1) Pro forma as adjusted cash and cash equivalents reflects $2.2 million of deferred offering costs that had been paid as of September 30, 2014.

RISK FACTORS

Investing in our common stock involves a high degree of risk. You should carefully consider the risks described below, as well as the other information in this prospectus, including our financial statements and the related notes and "Management's Discussion and Analysis of Financial Condition and Results of Operations," before deciding whether to invest in our common stock. The occurrence of any of the events or developments described below could harm our business, financial condition, results of operations and growth prospects. In such an event, the market price of our common stock could decline, and you may lose all or part of your investment. Although we have discussed all known material risks, the risks described below are not the only ones that we may face. Additional risks and uncertainties not presently known to us or that we currently deem immaterial may also impair our business operations.

Risks Related to Our Financial Condition and History of Operating Losses

We have incurred significant losses since our inception and anticipate that we will continue to incur losses for the foreseeable future and may never achieve or sustain profitability. We may require additional financings in order to fund our operations.

We are a clinical-stage biopharmaceutical company with two lead product candidates in clinical development, roxadustat, or FG-4592 in anemia in CKD, and FG-3019 in idiopathic pulmonary fibrosis, or IPF, pancreatic cancer and liver fibrosis. Pharmaceutical product development is a highly risky undertaking. To date, we have focused our efforts and most of our resources on hypoxia-inducible factor, or HIF, and fibrosis biology research, as well as developing our lead product candidates. We are not profitable and, other than in 2006 and 2007 due to income received from our Astellas collaboration, have incurred losses in each year since our inception. We have not generated any significant revenue based on product sales to date. We continue to incur significant research and development and other expenses related to our ongoing operations. Our net loss for the years ended December 31, 2012 and 2013 was approximately $32.6 million and $14.9 million, respectively. For the nine months ended September 30, 2014 we had a net loss of $8.9 million. As of September 30, 2014, we had an accumulated deficit of $271.7 million. As of September 30, 2014, we had capital resources consisting of cash, cash equivalents and short-term investments of $175.5 million. Despite contractual development and cost coverage commitments from our collaboration partners, AstraZeneca AB, or AstraZeneca, and Astellas Pharma Inc., or Astellas, and the potential to receive milestone and other payments from these partners, we anticipate we will continue to incur losses for the foreseeable future, and we anticipate these losses will increase as we continue our development of, and seek regulatory approval for our product candidates. If we do not successfully develop and obtain regulatory approval for our existing or any future product candidates and effectively manufacture, market and sell any product candidates that are approved, we may never generate product sales, and even if we do generate product sales, we may never achieve or sustain profitability on a quarterly or annual basis. Our prior losses, combined with expected future losses, have had and will continue to have an adverse effect on our stockholders' equity and working capital. Our failure to become and remain profitable would depress the market price of our common stock and could impair our ability to raise capital, expand our business, diversify our product offerings or continue our operations.

We believe that we will continue to expend substantial resources for the foreseeable future as we continue late-stage clinical development of roxadustat, grow our operations in China, expand our clinical development efforts on FG-3019, seek regulatory approval and prepare for the commercialization of our product candidates, and pursue additional indications. These expenditures will include costs associated with research and development, conducting preclinical trials and clinical trials, obtaining regulatory approvals in various jurisdictions, and manufacturing and supplying products and product candidates for ourselves and our partners. In particular, in our planned Phase 3 clinical trial program for roxadustat, which we believe will be the largest Phase 3 program ever conducted for an anemia product candidate, we are expecting to enroll approximately 7,000 to 8,000 patients worldwide. We are conducting this Phase 3 program in conjunction with Astellas and AstraZeneca, and we are substantially dependent on Astellas and AstraZeneca for the funding of this large program. The outcome of any

clinical trial and/or regulatory approval process is highly uncertain and we are unable to fully estimate the actual costs necessary to successfully complete the development and regulatory approval process for our compounds in development and any future product candidates. We believe that the net proceeds from this offering and the concurrent private placement, together with our expected third party collaboration revenues and existing cash, cash equivalents and short-term investments, will allow us to fund our operating plans through at least the next 12 months. Our operating plans or third party collaborations may change as a result of many factors, which are discussed in more detail below, and other factors that may not currently be known to us, and we therefore may need to seek additional funds sooner than planned, through offerings of public or private securities, debt financings or other sources, such as royalty monetization or other structured financings. Such financings may result in dilution to stockholders, imposition of debt covenants and repayment obligations, or other restrictions that may adversely affect our business. We may also seek additional capital due to favorable market conditions or strategic considerations even if we currently believe that we have sufficient funds for our current or future operating plans.

Our future funding requirements will depend on many factors, including, but not limited to:

- the rate of progress in the development of our product candidates;
- the costs of development efforts for our product candidates, such as FG-3019, that are not subject to reimbursement from our collaboration partners;
- the costs necessary to obtain regulatory approvals, if any, for our product candidates in the United States, China and other jurisdictions, and the costs of post-marketing studies that could be required by regulatory authorities in jurisdictions where approval is obtained;
- the continuation of our existing collaborations and entry into new collaborations;
- the time and unreimbursed costs necessary to commercialize products in territories in which our product candidates are approved for sale;
- the revenues from any future sales of our products as well as revenue earned from profit share, royalties and milestones;
- the level of reimbursement or third party payor pricing available to our products;
- the costs of establishing and maintaining manufacturing operations and obtaining third party commercial supplies of our products, if any, manufactured in accordance with regulatory requirements;
- the costs we incur in maintaining domestic and foreign operations, including operations in China;
- the costs associated with being a public company; and
- the costs we incur in the filing, prosecution, maintenance and defense of our extensive patent portfolio and other intellectual property rights.

Additional funds may not be available when we require them, or on terms that are acceptable to us. If adequate funds are not available to us on a timely basis, we may be required to delay, limit, reduce or terminate our research and development efforts or other operations or activities that may be necessary to commercialize our product candidates.

All of our recent revenue has been received from collaboration partners for our product candidates under development.

During the past two years, substantially all of our revenues were from our collaboration partners, including $90.8 million received under our current collaborations with Astellas and $76.5 million received under our current collaborations with AstraZeneca, constituting 99% and 100% of our revenues for 2012 and 2013, respectively.

We will require substantial additional capital to achieve our development and commercialization goals, which for our lead product candidate, roxadustat, is currently contemplated to be provided under our existing third party collaborations with Astellas and AstraZeneca.

If either or both of these collaborations were to be terminated, we could require significant additional capital in order to proceed with development and commercialization of our product candidates, or we may require additional partnering in order to help fund such development and commercialization. If adequate funds or partners are not available to us on a timely basis or on favorable terms, we may be required to delay, limit, reduce or terminate our research and development efforts or other operations.

If we are unable to continue to progress our development efforts and achieve milestones under our collaboration agreements, our revenues may decrease and our activities may fail to lead to commercial products.

Substantially all of our revenues to date have been, and a significant portion of our future revenues are expected to be, derived from our existing collaboration agreements. Revenues from research and development collaborations depend upon continuation of the collaborations, reimbursement of development costs, the achievement of milestones and royalties and profits from our product sales, if any, derived from future products developed from our research. If we are unable to successfully advance the development of our product candidates or achieve milestones, revenues under our collaboration agreements will be substantially less than expected.

Risks Related to the Development and Commercialization of Our Product Candidates

We are substantially dependent on the success of our lead product candidate, roxadustat, and our second compound in development, FG-3019.

To date, we have invested a substantial portion of our efforts and financial resources in the research and development of roxadustat, which is currently our lead product candidate. Roxadustat is our only product candidate that has advanced into a potentially pivotal trial, and it may be years before the studies required for its approval are completed, if ever. Our other product candidates are less advanced in development and may never enter into pivotal studies. We have completed 26 Phase 1 and 2 clinical studies with roxadustat in North America, Europe and Asia, in which 1,449 subjects have participated and for which we reported favorable primary and secondary safety and efficacy endpoint results. Based on our discussions with the United States Food and Drug Administration, or FDA, we believe that we have an acceptable plan for the conduct of our global Phase 3 clinical trial program. We have also had discussions with China regulatory authorities regarding the conduct of Phase 3 clinical trials in China, which are part of our global Phase 3 clinical trial program for safety data. We have also discussed our Phase 3 clinical development program with three national health authorities in the EU and obtained scientific advice from the European Medicines Agency. Our near-term prospects, including maintaining our existing collaborations with Astellas and AstraZeneca, will depend heavily on successful Phase 3 development and commercialization of roxadustat.

Our other lead product candidate, FG-3019, is currently in clinical development for IPF, pancreatic cancer and liver fibrosis. FG-3019 requires substantial further development and investment. In ten Phase 1 and 2 clinical trials, over 340 subjects have been treated with FG-3019 to date. We do not have a collaboration partner for support of this compound, and, while we have promising open-label safety data and potential signals of efficacy, we would need to complete larger and more extensive controlled clinical trials to validate the results to date in order to continue further development of this product candidate. In addition, although there are many potentially promising indications beyond IPF, pancreatic cancer and liver fibrosis, we are still exploring indications for which further development of, and investment for, FG-3019 may be appropriate. Accordingly, the costs and time to complete development and related risks are currently unknown. Moreover, FG-3019 is a monoclonal antibody, which may require experience and expertise that we may not currently possess as well as financial resources that are potentially greater than those required for our small molecule lead compound, roxadustat.

The clinical and commercial success of roxadustat and FG-3019 will depend on a number of factors, many of which are beyond our control, and we may be unable to complete the development or commercialization of roxadustat or FG-3019.

The clinical and commercial success of roxadustat and FG-3019 will depend on a number of factors, including the following:

- the timely initiation, continuation and completion of our Phase 3 clinical trials for roxadustat, which will depend substantially upon requirements for such trials imposed by the FDA and other regulatory agencies and bodies and the continued commitment and coordinated and timely performance by our third party collaboration partners, AstraZeneca and Astellas;
- the timely initiation and completion of our Phase 2 clinical trials for FG-3019, including in IPF and pancreatic cancer;
- our ability to demonstrate the safety and efficacy of our product candidates to the satisfaction of the relevant regulatory authorities;
- whether we are required by the FDA or other regulatory authorities to conduct additional clinical trials, and the scope and nature of such clinical trials, prior to approval to market our products;
- the timely receipt of necessary marketing approvals from the FDA and foreign regulatory authorities, including pricing and reimbursement determinations;
- the ability to successfully commercialize our product candidates, if approved, for marketing and sale by the FDA or foreign regulatory authorities, whether alone or in collaboration with others;
- our ability and the ability of our third party manufacturing partners to manufacture quantities of our product candidates at quality levels necessary to meet regulatory requirements and at a scale sufficient to meet anticipated demand at a cost that allows us to achieve profitability;
- our success in educating health care providers and patients about the benefits, risks, administration and use of our product candidates, if approved;
- acceptance of our product candidates, if approved, as safe and effective by patients and the healthcare community;
- the success of efforts to enter into relationships with large dialysis organizations involving the administration of roxadustat to dialysis patients;
- the achievement and maintenance of compliance with all regulatory requirements applicable to our product candidates;
- the maintenance of an acceptable safety profile of our products following any approval;
- the availability, perceived advantages, relative cost, relative safety, and relative efficacy of alternative and competitive treatments;
- our ability to obtain and sustain an adequate level of pricing or reimbursement for our products by third party payors;
- our ability to enforce successfully our intellectual property rights for our product candidates and against the products of potential competitors; and
- our ability to avoid or succeed in third party patent interference or patent infringement claims.

Many of these factors are beyond our control. Accordingly, we cannot assure you that we will ever be able to achieve profitability through the sale of, or royalties from, our product candidates. If we or our collaboration partners are not successful in obtaining approval for and commercializing our product candidates, or are delayed in completing those efforts, our business and operations would be adversely affected.

We may be unable to obtain regulatory approval for our product candidates, or such approval may be delayed or limited, due to a number of factors, many of which are beyond our control.

The clinical trials and the manufacturing of our product candidates are and will continue to be, and the marketing of our product candidates will be, subject to extensive and rigorous review and regulation by numerous government authorities in the United States and in other countries where we intend to develop and, if approved, market any product candidates. Before obtaining regulatory approval for the commercial sale of any product candidate, we must demonstrate through extensive preclinical trials and clinical trials that the product candidate is safe and effective for use in each indication for which approval is sought. The regulatory review and approval process is expensive and requires substantial resources and time, and in general very few product candidates that enter development receive regulatory approval. Accordingly, we may be unable to successfully develop or commercialize roxadustat or FG-3019 or any of our other product candidates.

We have not obtained regulatory approval for any of our product candidates and it is possible that roxadustat and FG-3019 will never receive regulatory approval in any country. Regulatory authorities may delay, limit or deny approval of roxadustat or FG-3019 for many reasons, including, among others:

- our failure to adequately demonstrate to the satisfaction of regulatory authorities that roxadustat is safe and effective in treating anemia in chronic kidney disease, or CKD, or that FG-3019 is safe and effective in treating IPF, pancreatic cancer or liver fibrosis;
- our failure to demonstrate that a product candidate’s clinical and other benefits outweigh its safety risks;
- the determination by regulatory authorities that additional clinical trials are necessary to demonstrate the safety and efficacy of roxadustat or FG-3019, or that ongoing clinical trials need to be modified in design, size, conduct or implementation;
- our product candidates may exhibit an unacceptable safety signal as they advance through clinical trials, in particular controlled Phase 3 trials;
- the contract research organizations, or CROs, that conduct clinical trials on our behalf may take actions outside of our control that materially adversely impact our clinical trials;
- we or third party contractors manufacturing our product candidates may not maintain current good manufacturing practices, or cGMP, successfully pass inspection or meet other applicable manufacturing regulatory requirements;
- regulatory authorities may not agree with our interpretation of the data from our preclinical trials and clinical trials;
- collaboration partners may not perform or complete their clinical programs in a timely manner, or at all; or
- principal investigators may determine that one or more serious adverse events, or SAEs, is related or possibly related to roxadustat, and any such determination may adversely affect our ability to obtain regulatory approval, whether or not the determination is correct.

Any of these factors, many of which are beyond our control, could jeopardize our or our collaboration partners’ abilities to obtain regulatory approval for and successfully market roxadustat. Because our business and operations in the near-term are almost entirely dependent upon roxadustat, any significant delays or impediments to regulatory approval could have a material adverse effect on our business and prospects.

Furthermore, in both the United States and China, we also expect to be required to perform additional clinical trials in order to obtain approval or as a condition to maintaining approval due to post-marketing requirements. If the FDA requires a risk evaluation and mitigation strategy, or REMS, for any of our product candidates if approved, the substantial cost and expense of complying with a REMS or other post-marketing requirements may limit our ability to successfully commercialize our product candidates.

Our Phase 2 clinical trial results to date for roxadustat may not be indicative of the results that may be obtained in larger, controlled Phase 3 clinical trials required for approval.

Clinical development is expensive and can take many years to complete, and its outcome is inherently uncertain. Failure can occur at any time during the clinical trial process. Success in preclinical and early clinical trials may not be predictive of similar results in larger, controlled clinical trials, and successful results from early or small clinical trials may not be replicated or show as favorable an outcome, even if successful. For example, in the past we developed an earlier generation product candidate aimed at treating anemia in CKD that resulted in a clinical hold for a safety signal seen in that product in Phase 2 clinical trials. The clinical hold applied to that product candidate and roxadustat and was lifted for both product candidates after submission of the requested data to the FDA. While we have not seen similar safety concerns involving roxadustat to date, our Phase 2 clinical trials have involved a relatively small number of patients exposed to roxadustat for a relatively short period of time compared to the Phase 3 clinical trials that we will be conducting, and only a fraction of the patients in the Phase 2 clinical trials were randomized to placebo. Accordingly, the Phase 2 clinical trials that we have conducted may not have uncovered safety issues, even if they exist. In addition, some of the safety concerns associated with the treatment of patients with anemia in CKD using erythropoiesis stimulating agents, or ESAs, did not emerge for many years until placebo-controlled studies had been conducted in large numbers of patients. The biochemical pathways that we believe are affected by roxadustat are implicated in a variety of biological processes and disease conditions, and it is possible that the use of roxadustat to treat larger numbers of patients will demonstrate unanticipated adverse effects, including possible drug interactions, which may negatively impact the safety profile, use and market acceptance of roxadustat. We studied the potential interaction between roxadustat and three statins (atorvastatin, rosuvastatin and simvastatin), which are used to lower levels of lipids in the blood. An adverse effect associated with increased statin plasma concentration is myopathy, which typically presents in a form of myalgia. The studies indicated the potential for increased exposure to those statins when roxadustat is taken simultaneously with those statins and suggested the need for statin dose reductions for patients receiving higher statin doses. We are planning additional clinical pharmacology studies to evaluate if the effect of any such interaction can be minimized or eliminated by a modification of the dosing schedule that would separate the administration of roxadustat and the statin. It is possible that the potential for interaction between roxadustat and statins could lead to label provisions for statins or roxadustat relating, for example, to dose scheduling or recommended statin dose limitations. In CKD patients statin therapy is often initiated earlier than treatment for anemia, and risks of myopathy have been shown to decrease with increased time on drug. While we believe the prior statin treatment history of such patients at established doses may reduce the risk of adverse effects from any interaction with roxadustat and facilitate any appropriate dose adjustments, we cannot be sure that this will be the case.

The FDA has informed us that our Phase 3 trials must include, as a safety endpoint, a major adverse cardiac events, or MACE, endpoint, which is a composite endpoint designed to identify major safety concerns, in particular relating to cardiovascular events such as cardiovascular death, myocardial infarction and stroke. In addition, we expect that our Phase 3 clinical trials supporting approval in Europe will be required to include MACE+ as a safety endpoint which, in addition to the MACE endpoints, also incorporates measurements of hospitalization rates due to heart failure or unstable angina. As a result, our ongoing and planned Phase 3 clinical trials may identify unanticipated safety concerns in the patient population under study. The FDA has also informed us that the MACE endpoint will need to be evaluated separately for our Phase 3 trials in non-dialysis dependent-CKD patients and our Phase 3 trials in dialysis dependent-CKD patients. The MACE endpoint will be evaluated in pooled analysis across Phase 3 studies of similar study populations and requires demonstration of non-inferiority relative to comparator, which means that the MACE event rate in roxadustat-treated patients must have less than a specified probability of exceeding the rate in the comparator trial by a specified hazard ratio. The number of patients necessary in order to permit a statistical analysis with adequate ability to detect the relative risk of MACE or MACE+ events in different arms of the trial, referred to as statistical power, depends on a number of factors, including the rate at which MACE or MACE+ events occur per patient-year in the trial, treatment duration of the patients, the required hazard ratio, and the required statistical power and confidence intervals.

In addition, we cannot be sure that the potential advantages that we believe roxadustat may have for treatment of patients with anemia in CKD as compared to the use of ESAs will be substantiated by our Phase 3 clinical trials or that we will be able to include a discussion of such advantages in our labeling should we obtain approval. We

believe that roxadustat may have certain benefits as compared to ESAs based on the data from our Phase 2 clinical trials conducted to date, including safety benefits, the absence of a hypertensive effect, the potential to lower cholesterol levels and the potential to correct anemia without the use of IV iron. However, our belief that roxadustat may offer those benefits is based on a limited amount of data from our Phase 2 clinical trials and our understanding of the likely mechanisms of action for roxadustat. Some of these benefits, such as those associated with the apparent effects on blood pressure and cholesterol, are not fully understood and, even if roxadustat receives marketing approval, we do not expect that it will be approved for the treatment of high blood pressure or high cholesterol based on the data from our Phase 3 trials, and we may not be able to refer to any such benefits in the labeling. While the data from our Phase 2 trials suggests roxadustat may reduce LDL, or low-density lipoprotein, and reduce the ratio of LDL to HDL, or high-density lipoprotein, the data show it may also reduce HDL, which may be a risk to patients. In addition, causes of the safety concerns associated with the use of ESAs to achieve specified target Hb levels have not been fully elucidated. While we believe that the issues giving rise to these concerns with ESAs are likely due to factors other than the Hb levels achieved, we cannot be certain that roxadustat will not be associated with similar, or more severe, safety concerns.

Many companies in the pharmaceutical and biotechnology industries have suffered significant setbacks in late-stage clinical trials after achieving positive results in early stage development, and we may face similar setbacks. In addition, the CKD patient population has many afflictions that may cause severe illness or death, which may be attributed to roxadustat in a manner that negatively impacts the safety profile of our product candidate. If the results of our ongoing or future clinical trials for roxadustat are inconclusive with respect to efficacy, if we do not meet our clinical endpoints with statistical significance, or if there are unanticipated safety concerns or adverse events that emerge during clinical trials, we may be prevented from or delayed in obtaining marketing approval for roxadustat, and even if we obtain marketing approval, any sales of roxadustat may suffer.

Our Phase 2 results to date for FG-3019 may not be indicative of the results that may be obtained in larger, controlled Phase 2 clinical trials or Phase 3 clinical trials required for approval.

We have conducted only a limited number of Phase 2 clinical trials with FG-3019. We have conducted an open-label Phase 2 dose escalation study of FG-3019 for IPF in 89 patients and a Phase 2 dose finding trial of FG-3019 combined with gemcitabine plus erlotinib in 75 patients with pancreatic cancer. We cannot be sure that the results of these trials will be substantiated in double-blinded trials with larger numbers of patients, that larger trials will demonstrate the efficacy of FG-3019 for these or other indications or that safety issues will not be uncovered in further trials. In the Phase 2 clinical trial for IPF, we used quantitative high resolution computed tomography, or HRCT, to measure the extent of lung fibrosis. While we believe that quantitative HRCT is an accurate measure of lung fibrosis, it is a novel technology that has not yet been accepted by the FDA as a primary endpoint in pivotal clinical trials. In addition, while we believe that the animal studies that we have conducted to date demonstrate that FG-3019 has the potential to arrest or reverse fibrosis and reduce tumor mass, we cannot be sure that these results will be indicative of the effects of FG-3019 in human trials. In addition, the IPF and pancreatic cancer patient populations are extremely ill and routinely experience SAEs, including death, which may be attributed to FG-3019 in a manner that negatively impacts the safety profile of our product candidate. If the additional Phase 2 clinical trials that we are planning for FG-3019 in IPF and pancreatic cancer do not show favorable efficacy results or result in safety concerns, or if we do not meet our clinical endpoints with statistical significance, or demonstrate an acceptable risk-benefit profile, we may be prevented from or delayed in obtaining marketing approval for FG-3019 in one or both of these indications.

We do not know whether our ongoing or planned Phase 3 clinical trials in roxadustat or Phase 2 clinical trials in FG-3019 will need to be redesigned based on interim results, be able to achieve sufficient enrollment or be completed on schedule, if at all.

Clinical trials can be delayed or terminated for a variety of reasons, including delay or failure to:

- address any physician or patient safety concerns that arise during the course of the trial;
- obtain required regulatory or institutional review board, or IRB, approval or guidance;

- reach timely agreement on acceptable terms with prospective CROs and clinical trial sites;
- recruit, enroll and retain patients through the completion of the trial;
- maintain clinical sites in compliance with clinical trial protocols;
- initiate or add a sufficient number of clinical trial sites; and
- manufacture sufficient quantities of product candidate for use in clinical trials.

In addition, we could encounter delays if a clinical trial is suspended or terminated by us, by the relevant IRBs at the sites at which such trials are being conducted, or by the FDA or other regulatory authorities. A suspension or termination of clinical trials may result from any number of factors, including failure to conduct the clinical trial in accordance with regulatory requirements or our clinical protocols, inspection of the clinical trial operations or trial site by the FDA or other regulatory authorities resulting in the imposition of a clinical hold, unforeseen safety issues or adverse side effects, changes in laws or regulations, or a principal investigator's determination that a serious adverse event could be related to our product candidates. Any delays in completing our clinical trials will increase the costs of the trial, delay the product candidate development and approval process and jeopardize our ability to commence marketing and generate revenues. Any of these occurrences may materially and adversely harm our business and operations and prospects.

Our product candidates may cause or have attributed to them undesirable side effects or have other properties that delay or prevent their regulatory approval or limit their commercial potential.

Undesirable side effects caused by our product candidates or that may be identified as related to our product candidates by physician investigators conducting our clinical trials or even competing products in development that utilize a similar mechanism of action or act through a similar biological disease pathway could cause us or regulatory authorities to interrupt, delay or halt clinical trials and could result in the delay or denial of regulatory approval by the FDA or other regulatory authorities and potential product liability claims. Adverse events and SAEs that emerge during treatment with our product candidates or other compounds acting through similar biological pathways may be deemed to be related to our product candidate and may result in:

- our Phase 3 clinical trial development plan becoming longer and more extensive;
- regulatory authorities increasing the data and information required to approve our product candidates and imposing other requirements; and
- our collaboration partners terminating our existing agreements.

The occurrence of any or all of these events may cause the development of our product candidates to be delayed or terminated, which could materially and adversely affect our business and prospects. See "Business—Our Development Program for Roxadustat" and "Business—FG-3019 for the Treatment of Fibrosis and Cancer" for a discussion of the adverse events and serious adverse events that have emerged in clinical trials of roxadustat and FG-3019.

Clinical trials of our product candidates may not uncover all possible adverse effects that patients may experience.

Clinical trials are conducted in representative samples of the potential patient population which may have significant variability. Clinical trials are by design based on a limited number of subjects and of limited duration for exposure to the product used to determine whether, on a potentially statistically significant basis, the planned safety and efficacy of any product candidate can be achieved. As with the results of any statistical sampling, we cannot be sure that all side effects of our product candidates may be uncovered, and it may be the case that only with a significantly larger number of patients exposed to the product candidate for a longer duration, may a more complete safety profile be identified. Further, even larger clinical trials may not identify rare serious adverse effects or the duration of such studies may not be sufficient to identify when those events may occur. There have

been other products, including ESAs, that have been approved by the regulatory authorities but for which safety concerns have been uncovered following approval. Such safety concerns have led to labelling changes or withdrawal of ESA products from the market, and any of our product candidates may be subject to similar risks. For example, roxadustat for use in anemia in CKD is being developed to address a very diverse patient population expected to have many serious health conditions at the time of administration of roxadustat, including diabetes, high blood pressure and declining kidney function.

Although to date we have not seen evidence of significant safety concerns with our product candidates currently in clinical trials, patients treated with our products, if approved, may experience adverse reactions and it is possible that the FDA or other regulatory authorities may ask for additional safety data as a condition of, or in connection with, our efforts to obtain approval of our product candidates. If safety problems occur or are identified after our product candidates reach the market, we may, or regulatory authorities may require us to amend the labeling of our products, recall our products or even withdraw approval for our products.

We may fail to enroll a sufficient number of patients in our clinical trials in a timely manner, which could delay or prevent clinical trials of our product candidates.

Identifying and qualifying patients to participate in clinical trials of our product candidates is critical to our success. The timing of our clinical trials depends on the rate at which we can recruit and enroll patients in testing our product candidates. Patients may be unwilling to participate in clinical trials of our product candidates for a variety of reasons, some of which may be beyond our control:

- severity of the disease under investigation;
- availability of alternative treatments;
- size and nature of the patient population;
- eligibility criteria for and design of the study in question;
- perceived risks and benefits of the product candidate under study;
- ongoing clinical trials of competitive agents;
- physicians' and patients' perceptions as to the potential advantages of our product candidates being studied in relation to available therapies or other products under development;
- our, our CRO's, and our trial sites' efforts to facilitate timely enrollment in clinical trials;
- patient referral practices of physicians; and
- ability to monitor patients and collect patient data adequately during and after treatment.

Patients may be unwilling to participate in our clinical trials for roxadustat due to adverse events observed in other drug treatments of anemia in CKD, and patients currently controlling their disease with existing ESAs may be reluctant to participate in a clinical trial with an investigational drug. We may not be able to successfully initiate or continue clinical trials if we cannot rapidly enroll a sufficient number of eligible patients to participate in the clinical trials required by regulatory agencies. If we have difficulty enrolling a sufficient number of patients to conduct our clinical trials as planned, we may need to delay, limit or terminate on-going or planned clinical trials, any of which could have a material and adverse effect on our business and prospects.

If we or third party manufacturers on which we rely cannot manufacture our product candidates and/or products at sufficient yields, we may experience delays in development, regulatory approval and commercialization.

Completion of our clinical trials and commercialization of our product candidates require access to, or development of, facilities to manufacture our product candidates at sufficient yields and at commercial scale. We have limited experience manufacturing, or managing third parties in manufacturing any of our product candidates

in the volumes that are expected to be necessary to support large-scale clinical trials and sales. Our efforts to establish these capabilities may not meet our requirements as to scale-up, yield, cost, potency or quality in compliance with cGMP. Our clinical trials must be conducted with product produced under applicable cGMP regulations. Failure to comply with these regulations may require us to repeat clinical trials, which would delay the regulatory approval process. Even an experienced third party manufacturer may encounter difficulties in production, which difficulties may include:

- costs and challenges associated with scale-up and attaining sufficient manufacturing yields, in particular for biologic products such as FG-3019, which is a monoclonal antibody;
- supply chain issues, including the timely availability and shelf life requirements of raw materials and supplies;
- quality control and assurance;
- shortages of qualified personnel and capital required to manufacture large quantities of product;
- compliance with regulatory requirements that vary in each country where a product might be sold;
- capacity limitations and scheduling availability in contracted facilities; and
- natural disasters that affect facilities and possibly limit production.

Any delay or interruption in the supply of our product candidates or products could have a material adverse effect on our business and operations.

Even if we are able to obtain regulatory approval of our product candidates, the label we obtain may limit the indicated uses for which our product candidates may be marketed.

With respect to roxadustat, we expect that regulatory approvals, if obtained at all, will limit the approved indicated uses for which roxadustat may be marketed, as ESAs have been subject to significant safety limitations on usage as directed by the "Black Box" warnings included in their labels. See "Business—Roxadustat For the Treatment of Anemia in Chronic Kidney Disease—Limitations of the Current Standard of Care for Anemia in CKD". In addition, in the past, an approved ESA was voluntarily withdrawn due to serious safety issues discovered after approval. The safety concerns relating to ESAs may result in labeling for roxadustat containing similar warnings even if our Phase 3 clinical trials do not suggest that roxadustat has similar safety issues. Even if the label for roxadustat does not contain all of the warnings contained in the Black Box warning for ESAs, the label for roxadustat may contain other warnings that limit the market opportunity for roxadustat. These warnings could include warnings against exceeding specified Hb targets and other warnings that derive from the lack of clarity regarding the basis for the safety issues associated with ESAs, even if our Phase 3 clinical trials do not themselves raise safety concerns.

As an organization, we have never completed a Phase 3 clinical trial or submitted a New Drug Application, or NDA, before, and may be unable to do so efficiently or at all for roxadustat or any product candidate we are developing.

We are currently conducting Phase 2 clinical trials for FG-3019 and we may need to conduct additional Phase 2 clinical trials before initiating our Phase 3 clinical trials for FG-3019. We intend to conduct Phase 3 clinical trials of roxadustat, and if our Phase 2 clinical trials are successful for FG-3019, we intend to conduct Phase 3 clinical trials for FG-3019. The conduct of Phase 3 clinical trials and the submission of a successful NDA is a complicated process. As an organization, we have not completed a Phase 3 clinical trial before, have limited experience in preparing, submitting and prosecuting regulatory filings, and have not submitted an NDA before. Consequently, we may be unable to successfully and efficiently execute and complete necessary clinical trials in a way that leads to NDA submission and approval of roxadustat or for any other product candidate we are developing, even if our earlier stage clinical trials are successful. We may require more time and incur greater

costs than our competitors and may not succeed in obtaining regulatory approvals of product candidates that we develop. Failure to commence or complete, or delays in, our planned clinical trials would prevent us from or delay us in commercializing roxadustat or any other product candidate we are developing.

If we are unable to establish sales, marketing and distribution capabilities or enter into or maintain agreements with third parties to market and sell our product candidates, we may not be successful in commercializing our product candidates if and when they are approved.

We do not have a sales or marketing infrastructure and have no experience in the sales, marketing or distribution of pharmaceutical products in any country. To achieve commercial success for any product for which we obtain marketing approval, we will need to establish sales and marketing capabilities or make and maintain our existing arrangements with third parties to perform these services at a level sufficient to support our commercialization efforts.

To the extent that we would undertake sales and marketing of any of our products directly, there are risks involved with establishing our own sales, marketing and distribution capabilities. Factors that may inhibit our efforts to commercialize our products on our own include:

- our inability to recruit, train and retain adequate numbers of effective sales and marketing personnel;
- the inability of sales personnel to obtain access to physicians or persuade adequate numbers of physicians to prescribe any future products;
- our inability to effectively manage geographically dispersed sales and marketing teams;
- the lack of complementary products to be offered by sales personnel, which may put us at a competitive disadvantage relative to companies with more extensive product lines; and
- unforeseen costs and expenses associated with creating an independent sales and marketing organization.

With respect to roxadustat, we are dependent on the commercialization capabilities of our collaboration partners, AstraZeneca and Astellas. If either such partner were to terminate its agreement with us, we would have to commercialize on our own or with another third party. We will have limited or little control over the commercialization efforts of such third parties, and either of them may fail to devote the necessary resources and attention to sell and market our products, if any, effectively. If they are not successful in commercializing our product candidates, our business and financial condition would suffer.

We face substantial competition, which may result in others discovering, developing or commercializing products before, or more successfully, than we do.

The development and commercialization of new pharmaceutical products is highly competitive. Our future success depends on our ability to achieve and maintain a competitive advantage with respect to the development and commercialization of our product candidates. Our objective is to discover, develop and commercialize new products with superior efficacy, convenience, tolerability and safety. We expect that in many cases, the products that we commercialize will compete with existing, market-leading products of companies that have large, established commercial organizations.

If roxadustat is approved and launched commercially, competing drugs are expected to include ESAs such as EPOGEN® and Aranesp®, commercialized by Amgen Inc., Procrit® and Eprex®, commercialized by Johnson & Johnson Inc., and Mircera®, which has received marketing approval in the United States, has been commercialized by Hoffmann-La Roche, or Roche, outside of the United States, and which Roche is able to commercialize in the United States beginning in mid-2014 if it chooses to do so. ESAs currently comprise the standard of care in the treatment of anemia in CKD, serving a significant majority of dialysis patients on Medicare. It may be difficult to encourage treatment providers and patients to switch from products with which

they have become familiar to roxadustat. We may also face competition from potential new anemia therapies currently in clinical development. For example, there are several other HIF product candidates in various stages of active development for anemia indications that may be in competition with roxadustat for patient recruitment and enrollment for clinical trials and may be in direct competition with roxadustat if and when it is approved and launched commercially. These candidates are being developed by such companies as Akebia Pharmaceuticals, Inc., or Akebia, Bayer Corporation, GlaxoSmithKline plc and Japan Tobacco Inc. Some of these product candidates may enter the market prior to roxadustat. There may be new therapies for renal-related diseases that could limit the market or level of reimbursement available for roxadustat if and when it is commercialized.

The introduction of biosimilars for ESAs into the market in the United States will likely also increase the competition for roxadustat if approved. A biosimilar product is a follow-on version of an existing, branded biologic product. Under current laws, an application for a biosimilar product should not be approved by the FDA until 12 years after the existing, patent-protected product was approved under a Biologics License Application, or BLA. The patents for the existing, branded product must expire in a given market before biosimilars may enter that market with limited or no risk of being sued for patent infringement. The patents for epoetin alfa, a version of EPOGEN, expired in 2004 in the European Union, and the remaining patents have expired or will expire between 2012 and 2015 in the United States. Several biosimilar versions of currently marketed ESAs are available for sale in the EU and other biosimilars are currently under development, including in the United States.

Furthermore, in the case of roxadustat, many of our existing and potential competitors have distribution relationships with leading dialysis providers and customers as well as brand recognition and reimbursement. Two of the largest operators of dialysis clinics in the United States, DaVita Healthcare Partners Inc., or DaVita, and Fresenius SE & Co. KGaA, or Fresenius, represent more than 60% of the dialysis market in the United States and have entered into long-term sales agreements with Amgen that began in January 2012, which in the case of Fresenius, includes an exclusive relationship. As a result, successful penetration of this market would require AstraZeneca to reach a significant agreement with Fresenius or DaVita, the two largest dialysis clinics in the United States, on favorable terms and on a timely basis.

If FG-3019 is approved and launched commercially to treat IPF, competing drugs are expected to include Intermune’s pirfenidone, which is approved for marketing in Europe, Canada, Japan and the United States, and Boehringer Ingelheim’s nintedanib which has been approved in the United States and has been submitted for accelerated approval in the EU. Nintedanib is also in development for non-small cell lung cancer and ovarian cancer. Other potential competitive product candidates in various stages of Phase 2 development for IPF include Gilead Sciences, Inc.’s simtuzumab, Celgene Corporation’s CC-4047 and CC-930, Janssen Biotech, Inc. and Johnson & Johnson Inc.’s CNTO-888, Sanofi’s GC-1008, Novartis’ QAX-576 and Biogen Idec’s STX-100.

If FG-3019 is approved and launched commercially to treat pancreatic cancer, we expect it to be used in combination instead of as monotherapy; and, likely competition for FG-3019 would be from other agents also seeking approval in combination with gemcitibine and nab-paclitaxel from companies such as Threshold Pharmaceuticals, Inc., Gilead Sciences, Inc. and Halozyme Therapeutics, Inc. Gemcitabine and/or nab-paclitaxel are the current standard of care in the first-line treatment of metastatic pancreatic cancer. Celgene Corporation’s Abraxane® (nab-paclitaxel) was launched in the U.S. and Europe in 2013 and 2014, respectively, and was the first drug approved in this disease in nearly a decade. Other chemotherapies include capecitabine (Xeloda®), oxaliplatin (Eloxatin®), fluorouracil or leucovorin. There are a number of product candidates in clinical trials for pancreatic cancer, many of which are in combination with existing chemotherapies, as both first-line and second-line therapy for metastatic pancreatic cancer. In a recent Phase 3 clinical trial in first-line metastatic pancreatic cancer comparing gemcitabine with the regimen known as FOLFIRINOX, which is a combination of oxaliplatin, irinotecan, fluorouracil and leucovorin. Merrimack Pharmaceuticals, Inc. is currently conducting a pivotal Phase 3 clinical trial of MM-398 for the treatment of patients with metastatic pancreatic cancer who have previously failed treatment with gemcitabine.

The success of any or all of these potential competitive products may negatively impact the development and potential for success of FG-3019. In addition, any competitive products that are on the market or in development may compete with FG-3019 for patient recruitment and enrollment for clinical trials or may force us to change our clinical trial comparators, whether placebo or active, in order to compare FG-3019 against another drug, which may be the new standard of care.

Moreover, many of our competitors have significantly greater resources than we do. Large pharmaceutical companies, in particular, have extensive experience in clinical testing, obtaining regulatory approvals, recruiting patients, manufacturing pharmaceutical products, and commercialization. In the potential anemia market for roxadustat, for example, large and established companies such as Amgen and Roche, among others, compete aggressively to maintain their market shares. In particular, these companies have greater experience and expertise in securing reimbursement, government contracts and relationships with key opinion leaders; conducting testing and clinical trials; obtaining and maintaining regulatory approvals and distribution relationships to market products; and marketing approved products. These companies also have significantly greater research and marketing capabilities than we do and may also have products that have been approved or are in later stages of development, and have collaboration agreements in our target markets with leading dialysis companies and research institutions. These competitors have in the past successfully prevented new and competing products from entering into the anemia market, and we expect that their resources will represent challenges for us and our collaboration partners, AstraZeneca and Astellas. If we and our collaboration partners are not able to compete effectively against existing and potential competitors, our business and financial condition may be materially and adversely affected.

Our future commercial success depends upon attaining significant market acceptance of our product candidates, if approved, among physicians, patients, third party payors and others in the health care community.

Even if we obtain marketing approval for roxadustat, FG-3019 or any other product candidates that we may develop or acquire in the future, these product candidates may not gain market acceptance among physicians, third party payors, patients and others in the health care community. Market acceptance of any approved product depends on a number of other factors, including:

- the clinical indications for which the product is approved and the labeling required by regulatory authorities for use with the product, including any warnings that may be required in the labeling;
- acceptance by physicians and patients of the product as a safe and effective treatment and the willingness of the target patient population to try new therapies and of physicians to prescribe new therapies;
- the cost, safety, efficacy and convenience of treatment in relation to alternative treatments;
- the restrictions on the use of our products together with other medications, if any;
- the availability of adequate coverage and reimbursement or pricing by third party payors and government authorities;
- the ability of treatment providers, such as dialysis clinics, to enter into relationships with us without violating their existing agreement; and
- the effectiveness of our sales and marketing efforts.

For example, in the case of roxadustat, two of the largest operators of dialysis clinics in the United States, DaVita and Fresenius, represent more than 60% of the dialysis market in the United States and have entered into long-term sales agreements with Amgen that began in January 2012, which in the case of Fresenius, includes an exclusive relationship.

Limited reimbursement or insurance coverage of our approved products, if any, by third party payors may render our products less attractive to patients and healthcare providers.

Market acceptance and sales of any approved products will depend significantly on reimbursement or coverage of our products by third party payors and may be affected by existing and future healthcare reform measures or the prices of related products for which reimbursement third party applies. Coverage and reimbursement by a third party payor may depend upon a number of factors, including the third party payor's determination that use of a product is:

- a covered benefit under its health plan;
- safe, effective and medically necessary;
- appropriate for the specific patient;
- cost-effective; and
- neither experimental nor investigational.

Obtaining coverage and reimbursement approval for a product from a government or other third party payor is a time consuming and costly process that could require us to provide supporting scientific, clinical and cost-effectiveness data for the use of our products to the payor, which we may not be able to provide. Furthermore, the reimbursement policies of third party payors may significantly change in a manner that renders our clinical data insufficient for adequate reimbursement or otherwise limits the successful marketing of our products. Even if we obtain coverage for our product candidates, third party payors may not establish adequate reimbursement amounts, which may reduce the demand for, or the price of, our products. If reimbursement is not available or is available only to limited levels, we may not be able to commercialize certain of our products.

In countries outside of the United States, price controls may limit the price at which products such as roxadustat, if approved, are sold. For example, reference pricing is used by various European Union member states and parallel distribution, or arbitrage between low-priced and high-priced member states, can further reduce prices. In some countries, we or our partner may be required to conduct a clinical trial or other studies that compare the cost-effectiveness of our product candidates to other available products in order to obtain or maintain reimbursement or pricing approval. Publication of discounts by third party payors or authorities may lead to further pressure on the prices or reimbursement levels within the country of publication and other countries. If reimbursement of our products is unavailable or limited in scope or amount, or if pricing is set at unacceptable levels, we or our partner may elect not to commercialize our products in such countries, and our business and financial condition could be adversely affected.

Risks Related to Our Reliance on Third Parties

If our collaborations with Astellas or AstraZeneca were terminated, or if Astellas or AstraZeneca were to prioritize other initiatives over their collaborations with us, whether as a result of a change of control or otherwise, our ability to successfully develop and commercialize our lead product candidate, roxadustat, would suffer.

We have entered into collaboration agreements with respect to the development and commercialization of our lead product candidate, roxadustat, with Astellas and AstraZeneca. These agreements provide for reimbursement of our development costs by our collaboration partners and also provide for commercialization of roxadustat throughout the major territories of the world.

Our agreements with Astellas and AstraZeneca provide each of them with the right to terminate their respective agreements with us, upon the occurrence of negative clinical results, delays in the development and commercialization of our product candidates or adverse regulatory requirements or guidance. The termination of any of our collaboration agreements would require us to fund and perform the further development and commercialization of roxadustat in the affected territory, or pursue another collaboration, which we may be

unable to do, either of which could have an adverse effect on our business and operations. In addition, each of those agreements provides our respective partners the right to terminate any of those agreements upon written notice for convenience. Moreover, if Astellas or AstraZeneca, or any successor entity, were to determine that their collaborations with us are no longer a strategic priority, or if either of them or a successor were to reduce their level of commitment to their collaborations with us, our ability to develop and commercialize roxadustat could suffer. In addition, some of our collaborations are exclusive and preclude us from entering into additional collaboration agreements with other parties in the area or field of exclusivity.

If we fail to establish and maintain strategic collaborations related to our product candidates, we will bear all of the risk and costs related to the development and commercialization of any such product candidate, and we may need to seek additional financing, hire additional employees and otherwise develop expertise at significant cost. This in turn may negatively affect the development of our other product candidates as we direct resources to our most advanced product candidates.

Conflicts with our collaboration partners could jeopardize our collaboration agreements and our ability to commercialize product candidates.

Our collaboration partners have certain rights to control decisions regarding the development and commercialization of our product candidates with respect to which they are providing funding. If we have a disagreement over strategy and activities, our plans for obtaining approval may be revised and negatively affect the anticipated timing and potential for success of our product candidates. Even if a product under a collaboration agreement is approved, we will remain substantially dependent on the commercialization strategy and efforts of our collaboration partners, and neither of our collaboration partners has experience in commercialization of a novel drug such as roxadustat in the dialysis market.

With respect to our collaboration agreements for roxadustat, there are additional complexities in that we and our collaboration partners, Astellas and AstraZeneca, must reach consensus on our Phase 3 development program. Multi-party decision-making is complex and involves significant time and effort, and there can be no assurance that the parties will cooperate or reach consensus, or that one or both of our partners will not ask to proceed independently in some or all of their respective territories or functional areas of responsibility in which the applicable collaboration partner would otherwise be obligated to cooperate with us. Any disputes or lack of cooperation with us by either Astellas or AstraZeneca may negatively impact the timing or success of our planned Phase 3 clinical studies.

We intend to conduct proprietary research programs in specific disease areas that are not covered by our collaboration agreements. Our pursuit of such opportunities could, however, result in conflicts with our collaboration partners in the event that any of our collaboration partners takes the position that our internal activities overlap with those areas that are exclusive to our collaboration agreements, and we should be precluded from such internal activities. Moreover, disagreements with our collaboration partners could develop over rights to our intellectual property. In addition, our collaboration agreements may have provisions that give rise to disputes regarding the rights and obligations of the parties. Any conflict with our collaboration partners could lead to the termination of our collaboration agreements, delay collaborative activities, reduce our ability to renew agreements or obtain future collaboration agreements or result in litigation or arbitration and would negatively impact our relationship with existing collaboration partners.

Certain of our collaboration partners could also become our competitors in the future. If our collaboration partners develop competing products, fail to obtain necessary regulatory approvals, terminate their agreements with us prematurely or fail to devote sufficient resources to the development and commercialization of our product candidates, the development and commercialization of our product candidates and products could be delayed.

We rely on third parties for the conduct of most of our preclinical and clinical trials for our product candidates, and if our third party contractors do not properly and successfully perform their obligations under our agreements with them, we may not be able to obtain or may be delayed in receiving regulatory approvals for our product candidates.

We rely heavily on university, hospital, dialysis centers and other institutions and third parties, including the principal investigators and their staff, to carry out our clinical trials in accordance with our clinical protocols and designs. We also rely on a number of third party contract research organizations, or CROs, to assist in undertaking, managing, monitoring and executing our ongoing clinical trials, including those for roxadustat. We expect to continue to rely on CROs, clinical data management organizations, medical institutions and clinical investigators to conduct our development efforts in the future, including our Phase 3 development program for roxadustat. We compete with many other companies for the resources of these third parties, and large pharmaceutical companies often have significantly more extensive agreements and relationships with such third party providers, and such third party providers may prioritize the requirements of such large pharmaceutical companies over ours. The third parties on whom we rely may terminate their engagements with us at any time, which may cause delay in the development and commercialization of our product candidates. If any such third party terminates its engagement with us or fails to perform as agreed, we may be required to enter into alternative arrangements, which would result in significant cost and delay to our product development program. Moreover, our agreements with such third parties generally do not provide assurances regarding employee turnover and availability, which may cause interruptions in the research on our product candidates by such third parties.

Moreover, while our reliance on these third parties for certain development and management activities will reduce our control over these activities, it will not relieve us of our responsibilities. For example, the FDA and foreign regulatory authorities require compliance with regulations and standards, including good clinical practices, or GCP, requirements, for designing, conducting, monitoring, recording, analyzing and reporting the results of clinical trials to ensure that the data and results from trials are credible and accurate and that the rights, integrity and confidentiality of trial participants are protected. Although we rely on third parties to conduct our clinical trials, we are responsible for ensuring that each of these clinical trials is conducted in accordance with its general investigational plan and protocol under legal and regulatory requirements. Regulatory authorities enforce these GCP requirements through periodic inspections of trial sponsors, principal investigators and trial sites. If we or any of our CROs fail to comply with applicable GCP requirements, the clinical data generated in our clinical trials may be deemed unreliable and the FDA or other regulatory authorities may require us to perform additional clinical trials before approving our marketing applications. We cannot assure you that upon inspection by a regulatory authority, such regulatory authority will determine that any of our clinical trials comply with GCP requirements.

If CROs and other third parties do not successfully carry out their duties under their agreements with us, if the quality or accuracy of the data they obtain is be compromised due to their failure to adhere to trial protocols or to regulatory requirements, or if they otherwise fail to comply with regulations and trial protocols or meet expected standards or deadlines, the trials of our product candidates may not meet regulatory requirements. If trials do not meet regulatory requirements or if these third parties need to be replaced, the development of our product candidates may be delayed, suspended or terminated, or the results may not be acceptable. If any of these events occur, we may not be able to obtain regulatory approval of our product candidates on a timely basis, at a reasonable cost, or at all.

We currently rely, and expect to continue to rely, on third parties to conduct many aspects of our product manufacturing, and these third parties may not perform satisfactorily.

We do not have any operating manufacturing facilities at this time, and our current manufacturing facility plans in China are not expected to satisfy the requirements necessary to support roxadustat development and commercialization outside of China. Other than in and for China specifically, we do not expect to independently manufacture our products. We currently rely, and expect to continue to rely, on third parties to scale-up, manufacture and supply roxadustat and our other product candidates outside of China. Risks arising from our reliance on third party manufacturers include:

- reduced control and additional burdens of oversight as a result of using third party manufacturers for all aspects of manufacturing activities, including regulatory compliance and quality control and assurance;
- termination or nonrenewal of manufacturing agreements with third parties in a manner or at a time that may negatively impact our planned development and commercialization activities;
- the possible misappropriation of our proprietary technology, including our trade secrets and know-how; and
- disruptions to the operations of our third party manufacturers or suppliers unrelated to our product, including the bankruptcy of the manufacturer or supplier or a catastrophic event affecting our manufacturers or suppliers.

Any of these events could lead to development delays or failure to obtain regulatory approval, or affect our ability to successfully commercialize our product candidates. Some of these events could be the basis for action by the FDA or another regulatory authority, including injunction, recall, seizure or total or partial suspension of production.

The facilities used by our contract manufacturers to manufacture our product candidates must pass inspections by the FDA and other regulatory authorities. Although, except for China, we do not control the manufacturing operations of, and expect to remain completely dependent on, our contract manufacturers for manufacture of drug substance and finished drug product, we are ultimately responsible for ensuring that our product candidates are manufactured in compliance with cGMP requirements. If our contract manufacturers cannot successfully manufacture material that conforms to our specifications and the regulatory requirements of the FDA or other regulatory authorities, we will not be able to secure and/or maintain regulatory approval for our product candidates. In addition, we have no control over the ability of our contract manufacturers to maintain adequate quality control, quality assurance and qualified personnel. In addition, although our longer-term agreements are expected to provide for requirements to meet our quantity and quality requirements to manufacture our products candidates for clinical studies and commercial sale, we will have minimal direct control over the ability of our contract manufacturers to maintain adequate quality control, quality assurance and qualified personnel and we expect to rely on our audit rights to ensure that those qualifications are maintained to meet our requirements. If our contract manufacturers' facilities do not pass inspection by regulatory authorities, or if regulatory authorities do not approve these facilities for the manufacture of our products, or withdraw any such approval in the future, we would need to identify and qualify alternative manufacturing facilities, which would significantly impact our ability to develop, obtain regulatory approval for or market our products, if approved. Moreover, any failure of our third party manufacturers, to comply with applicable regulations could result in sanctions being imposed on us or adverse regulatory consequences, including clinical holds, warnings or untitled letters, fines, injunctions, civil penalties, delays, suspension or withdrawal of approvals, license revocation, seizures or recalls of product candidates or products, operating restrictions and criminal prosecutions, any of which would be expected to significantly and adversely affect supplies of our products to us and our collaboration partners.

Any of our third party manufacturers may terminate their engagement with us at any time and we have not yet entered into any commercial supply agreements for the manufacture of active pharmaceutical ingredient or drug product. With respect to roxadustat, AstraZeneca and Astellas have certain rights to assume manufacturing of

roxadustat and the existence of those rights may limit our ability to enter into favorable long-term supply agreements, if at all, with other third party manufacturers. In addition, our product candidates and any products that we may develop may compete with other product candidates and products for access and prioritization to manufacture. Certain third party manufacturers may be contractually prohibited from manufacturing our product due to non-compete agreements with our competitors or a commitment to grant another party priority relative to our products. There are a limited number of third party manufacturers that operate under cGMP and that might be capable of manufacturing to meet our requirements. Due to the limited number of third party manufacturers with the contractual freedom, expertise, required regulatory approvals and facilities to manufacture our products on a commercial scale, identifying and qualifying a replacement third party manufacturer would be expensive and time-consuming and may cause delay or interruptions in the production of our product candidates or products, which in turn may delay, prevent or impair our development and commercialization efforts.

We have a letter agreement with IRIX Pharmaceuticals, Inc., or IRIX, a third party manufacturer that we have used in the past, pursuant to which we agreed to negotiate a single source manufacturing agreement that included a right of first negotiation for the cGMP manufacture of HIF-PH inhibitors, including roxadustat, provided that IRIX is able to match any third party bids within 5%. The exclusive right to manufacture extends for five years after approval of an NDA for those compounds, and any agreement would provide that no minimum amounts would be specified until appropriate by forecast, that we and a commercialization partner would have the rights to contract with independent third parties that exceed IRIX's internal manufacturing capabilities or in the event that we or our commercialization partner determines for reasons of continuity of supply and security that such a need exists, provided that IRIX would supply no less than 65% of the product if it is able to provide this level of supply. Subsequent to the letter agreement, we and IRIX have entered into several additional service agreements. IRIX has requested in writing that we honor the letter agreement with respect to the single source manufacturing agreement, and if we were to enter into any such exclusive manufacturing agreement, there can be no assurance that IRIX will not assert a claim for right to manufacture roxadustat or that IRIX could manufacture roxadustat successfully and in accordance with applicable regulations for a commercial product and the specifications of our collaboration partners.

If any third party manufacturer terminates its engagement with us or fails to perform as agreed, we may be required to find replacement manufacturers, which would result in significant cost and delay to our development programs. Although we believe that there are several potential alternative manufacturers who could manufacture our product candidates, we may incur significant delays and added costs in identifying, qualifying and contracting with any such third party or potential second source manufacturer. In any event, with any third party manufacturer we expect to enter into technical transfer agreements and share our know-how with the third party manufacturer, which can be time-consuming and may result in delays. These delays could result in a suspension or delay of our Phase 3 clinical trials or, if roxadustat is approved and marketed, a failure to satisfy patient demand.

Certain of the components of our product candidates are acquired from single-source suppliers and have been purchased without long-term supply agreements. The loss of any of these suppliers, or their failure to supply us with supplies of sufficient quantity and quality to complete our drug substance or finished drug product of acceptable quality and an acceptable price, would materially and adversely affect our business.

We do not have an alternative supplier of certain components of our product candidates. To date, we have used purchase orders for the supply of materials that we use in our product candidates. We may be unable to enter into long-term commercial supply arrangements with our vendors, or do so on commercially reasonable terms, which could have a material adverse impact upon our business. In addition, we currently rely on our contract manufacturers to purchase from third-party suppliers some of the materials necessary to produce our product candidates. We do not have direct control over the acquisition of those materials by our contract manufacturers. Moreover, we currently do not have any agreements for the commercial production of those materials.

The logistics of our supply chain, which includes shipment of materials and intermediates from countries such as China and India adds additional time and risk to the manufacture of our product candidates. While we have in the

past maintained sufficient inventory of materials, active pharmaceutical ingredient, or API, and drug product to meet our and our collaboration partners' needs for roxadustat to date, the lead time and regulatory approvals required to source from and into countries outside of the United States increases the risk of delay and potential shortages of supply.

Risks Related to Our Intellectual Property

If our efforts to protect our proprietary technologies are not adequate, we may not be able to compete effectively in our market.

We rely upon a combination of patents, trade secret protection and contractual arrangements to protect the intellectual property related to our technologies. We will only be able to protect our products and proprietary information and technology by preventing unauthorized use by third parties to the extent that our patents, trade secrets, and contractual position allow us to do so. Any disclosure to or misappropriation by third parties of our trade secrets or confidential information could compromise our competitive position. Moreover, we are involved in, have in the past been involved in, and may in the future be involved in legal or administrative proceedings involving our intellectual property and initiated by third parties, which proceedings can result in significant costs and commitment of management time and attention. As our product candidates continue in development, third parties may attempt to challenge the validity and enforceability of our patents and proprietary information and technologies.

We also are involved in, have in the past been involved in, and may in the future be involved in initiating legal or administrative proceedings involving the product candidates and intellectual property of our competitors. These proceedings can result in significant costs and commitment of management time and attention, and there can be no assurance that our efforts would be successful in preventing or limiting the ability of our competitors to market competing products.

Composition-of-matter patents relating to the active pharmaceutical ingredient are generally considered to be the strongest form of intellectual property protection for pharmaceutical products, as such patents provide protection not limited to any one method of use. Method-of-use patents protect the use of a product for the specified method(s), and do not prevent a competitor from making and marketing a product that is identical to our product for an indication that is outside the scope of the patented method. We rely on a combination of these and other types of patents to protect our product candidates, and there can be no assurance that our intellectual property will create and sustain the competitive position of our product candidates.

Biotechnology and pharmaceutical product patents involve highly complex legal and scientific questions and can be uncertain. Any patent applications that we own or license may fail to result in issued patents. Even if patents do successfully issue from our applications, third parties may challenge their validity or enforceability, which may result in such patents being narrowed, invalidated, or held unenforceable. Even if our patents and patent applications are not challenged by third parties, those patents and patent applications may not prevent others from designing around our claims and may not otherwise adequately protect our product candidates. If the breadth or strength of protection provided by the patents and patent applications we hold with respect to our product candidates is threatened, competitors with significantly greater resources could threaten our ability to commercialize our product candidates. Discoveries are generally published in the scientific literature well after their actual development, and patent applications in the United States and other countries are typically not published until 18 months after filing, and in some cases are never published. Therefore, we cannot be certain that we or our licensors were the first to make the inventions claimed in our owned and licensed patents or patent applications, or that we or our licensors were the first to file for patent protection covering such inventions. Subject to meeting other requirements for patentability, for United States patent applications filed prior to March 16, 2013, the first to invent the claimed invention is entitled to receive patent protection for that invention while, outside the United States, the first to file a patent application encompassing the invention is entitled to patent protection for the invention. The United States moved to a "first to file" system under the Leahy-Smith America Invents Act, or AIA, effective March 16, 2013. The effects of this change and other elements of the AIA

are currently unclear, as the United States Patent and Trademark Office, or USPTO, is still implementing associated regulations, and the applicability of the AIA and associated regulations to our patents and patent applications have not been fully determined. This new system also includes new procedures for challenging issued patents and pending patent applications, which creates additional uncertainty. We may become involved in opposition or interference proceedings challenging our patents and patent applications or the patents and patent applications of others, and the outcome of any such proceedings are highly uncertain. An unfavorable outcome in any such proceedings could reduce the scope of, or invalidate, our patent rights, allow third parties to commercialize our technology and compete directly with us, or result in our inability to manufacture, develop or commercialize our product candidates without infringing the patent rights of others.

In addition to the protection afforded by patents, we seek to rely on trade secret protection and confidentiality agreements to protect proprietary know-how, information, or technology that is not covered by our patents. Although our agreements require all of our employees to assign their inventions to us, and we require all of our employees, consultants, advisors and any third parties who have access to our trade secrets, proprietary know-how and other confidential information and technology to enter into appropriate confidentiality agreements, we cannot be certain that our trade secrets, proprietary know-how and other confidential information and technology will not be subject to unauthorized disclosure or that our competitors will not otherwise gain access to or independently develop substantially equivalent trade secrets, proprietary know-how and other information and technology. Furthermore, the laws of some foreign countries, in particular, China, where we have operations, do not protect proprietary rights to the same extent or in the same manner as the laws of the United States. As a result, we may encounter significant problems in protecting and defending our intellectual property globally. If we are unable to prevent unauthorized disclosure of our intellectual property related to our product candidates and technology to third parties, we may not be able to establish or maintain a competitive advantage in our market, which could materially adversely affect our business and operations.

Intellectual property disputes with third parties and competitors may be costly and time consuming, and may negatively affect our competitive position.

Our commercial success may depend on our avoiding infringement of the patents and other proprietary rights of third parties as well as on enforcing our patents and other proprietary rights against third parties. Pharmaceutical and biotechnology intellectual property disputes are characterized by complex, lengthy and expensive litigation over patents and other intellectual property rights. We may initiate or become a party to, or be threatened with, future litigation or other proceedings regarding intellectual property rights with respect to our product candidates and competing products.

As our product candidates progress toward commercialization, we or our collaboration partners may be subject to patent infringement claims from third parties. We attempt to ensure that our product candidates do not infringe third party patents and other proprietary rights. However, the patent landscape in competitive product areas is highly complex, and there may be patents of third parties of which we are unaware that may result in claims of infringement. Accordingly, there can be no assurance that our product candidates do not infringe proprietary rights of third parties, and parties making claims against us may seek and obtain injunctive or other equitable relief, which could potentially block further efforts to develop and commercialize our product candidates including roxadustat or FG-3019. Any litigation involving defense against claims of infringement, regardless of the merit of such claims, would involve substantial litigation expense and would be a substantial diversion of management time.

We intend, if necessary, to vigorously enforce our intellectual property in order to protect the proprietary position of our product candidates, including roxadustat and FG-3019. Active efforts to enforce our patents may include litigation, administrative proceedings, or both, depending on the potential benefits that might be available from those actions and the costs associated with undertaking those efforts against third parties. We carefully review and monitor publicly available information regarding products that may be competitive with our product candidates and assert our intellectual property rights where appropriate. We previously prevailed in an administrative challenge initiated by a major biopharmaceutical company regarding our intellectual property

rights, maintaining our intellectual property in all relevant scope, and will continue to protect and enforce our intellectual property rights. Moreover, third parties may continue to initiate new proceedings in the U.S. and foreign jurisdictions to challenge our patents from time to time.

We may consider administrative proceedings and other means for challenging third party patents and patent applications. Third parties may also challenge our patents and patent applications, through interference, reexamination, *inter partes* review, and post-grant review proceedings before the USPTO or through other comparable proceedings, such as oppositions or invalidation proceedings, before foreign patent offices. An unfavorable outcome in any such challenge could require us to cease using the related technology and to attempt to license rights to it from the prevailing third party, which may not be available on commercially reasonable terms, if at all, in which case our business could be harmed. Even if we are successful, participation in administrative proceedings before the USPTO or a foreign patent office may result in substantial costs and time on the part of our management and other employees. For example, on December 5, 2013, Akebia filed an opposition to our European Patent No. 1463823, or the ‘823 patent, with the European Patent Office, and Akebia and other third parties may initiate or pursue similar proceedings with the European Patent Office or other corresponding foreign jurisdictions. The granted claims of the ‘823 patent encompass the use of roxadustat for the treatment of anemia. While we believe the ‘823 patent will be upheld in its entirety, the ultimate outcome of the opposition remains uncertain, and ultimate resolution of the proceeding may take a number of years and result in substantial costs to us.

Furthermore, there is a risk that any public announcements concerning the status or outcomes of intellectual property litigation or administrative proceedings may adversely affect the price of our stock. If securities analysts or our investors interpret such status or outcomes as negative or otherwise creating uncertainty, our common stock price may be adversely affected.

Our reliance on third parties and agreements with collaboration partners requires us to share our trade secrets, which increases the possibility that a competitor may discover them or that our trade secrets will be misappropriated or disclosed.

Our reliance on third party contractors to develop and manufacture our product candidates is based upon agreements that limit the rights of the third parties to use or disclose our confidential information, including our trade secrets and know-how. Despite the contractual provisions, the need to share trade secrets and other confidential information increases the risk that such trade secrets and information are disclosed or used, even if unintentionally, in violation of these agreements. In the highly competitive markets in which our product candidates are expected to compete, protecting our trade secrets, including our strategies for addressing competing products, is imperative, and any unauthorized use or disclosure could impair our competitive position and may have a material adverse effect on our business and operations.

In addition, our collaboration partners are larger, more complex organizations than ours, and the risk of inadvertent disclosure of our proprietary information may be increased despite their internal procedures and contractual obligations in place with our collaboration partners. Despite our efforts to protect our trade secrets and other confidential information, a competitor’s discovery of such trade secrets and information could impair our competitive position and have an adverse impact on our business.

We have an extensive worldwide patent portfolio. The cost of maintaining our patent protection is high and maintaining our patent protection requires continuous review and compliance in order to maintain worldwide patent protection. We may not be able to effectively maintain our intellectual property position throughout the major markets of the world.

The USPTO and foreign patent authorities require maintenance fees and payments as well as continued compliance with a number of procedural and documentary requirements. Noncompliance may result in abandonment or lapse of the subject patent or patent application, resulting in partial or complete loss of patent

rights in the relevant jurisdiction. Non-compliance may result in reduced royalty payments for lack of patent coverage in a particular jurisdiction from our collaboration partners or may result in competition, either of which could have a material adverse effect on our business.

We have made, and will continue to make, certain strategic decisions in balancing costs and the potential protection afforded by the patent laws of certain countries. As a result, we may not be able to prevent third parties from practicing our inventions in all countries throughout the world, or from selling or importing products made using our inventions in and into the United States or other countries. Third parties may use our technologies in territories in which we have not obtained patent protection to develop their own products and, further, may infringe our patents in territories which provide inadequate enforcement mechanisms, even if we have patent protection. Such third party products may compete with our product candidates, and our patents or other intellectual property rights may not be effective or sufficient to prevent them from competing.

The laws of some foreign countries do not protect proprietary rights to the same extent as do the laws of the United States, and we may encounter significant problems in securing and defending our intellectual property rights outside the United States.

Many companies have encountered significant problems in protecting and defending intellectual property rights in certain countries. The legal systems of certain countries, particularly certain developing countries such as China, do not always favor the enforcement of patents, trade secrets, and other intellectual property rights, particularly those relating to pharmaceutical and biotechnology products, which could make it difficult for us to stop infringement of our patents, misappropriation of our trade secrets, or marketing of competing products in violation of our proprietary rights. In China, our intended establishment of significant operations will depend in substantial part on our ability to effectively enforce our intellectual property rights in that country. Proceedings to enforce our intellectual property rights in foreign countries could result in substantial costs and divert our efforts and attention from other aspects of our business, and could put our patents in these territories at risk of being invalidated or interpreted narrowly, or our patent applications at risk of not granting, and could provoke third parties to assert claims against us. We may not prevail in all legal or other proceedings that we may initiate and, if we were to prevail, the damages or other remedies awarded, if any, may not be commercially meaningful. Accordingly, our efforts to enforce our intellectual property rights around the world may be inadequate to obtain a significant commercial advantage from the intellectual property that we develop or license.

Intellectual property rights do not address all potential threats to any competitive advantage we may have.

The degree of future protection afforded by our intellectual property rights is uncertain because intellectual property rights have limitations, and intellectual property rights may not adequately protect our business or permit us to maintain our competitive advantage. The following examples are illustrative:

- Others may be able to make compounds that are the same as or similar to our current or future product candidates but that are not covered by the claims of the patents that we own or have exclusively licensed.
- We or any of our licensors or strategic partners might not have been the first to make the inventions covered by the issued patent or pending patent application that we own or have exclusively licensed.
- We or any of our licensors or strategic partners might not have been the first to file patent applications covering certain of our inventions.
- Others may independently develop similar or alternative technologies or duplicate any of our technologies without infringing our intellectual property rights.
- The prosecution of our pending patent applications may not result in granted patents.
- Granted patents that we own or have exclusively licensed may not provide us with any competitive advantages, or may be held invalid or unenforceable, as a result of legal challenges by our competitors.

- Patent protection on our product candidates may expire before we are able to develop and commercialize the product, or before we are able to recover our investment in the product.
- Our competitors might conduct research and development activities in the United States and other countries that provide a safe harbor from patent infringement claims for such activities, as well as in countries in which we do not have patent rights, and may then use the information learned from such activities to develop competitive products for sale in markets where we intend to market our product candidates.

The existence of counterfeit pharmaceutical products in pharmaceutical markets may damage our brand and reputation and have a material adverse effect on our business, operations and prospects.

Counterfeit products, including counterfeit pharmaceutical products, are a significant problem, particularly in China. Counterfeit pharmaceuticals are products sold under the same or very similar brand names and/or having a similar appearance to genuine products, but which are sold without proper licenses or approvals. Such products divert sales from genuine products, often are of lower cost, often are of lower quality (having different ingredients or formulations, for example), and have the potential to damage the reputation for quality and effectiveness of the genuine product. If counterfeit pharmaceuticals illegally sold under our brand name result in adverse side effects to consumers, we may be associated with any negative publicity resulting from such incidents. In addition, consumers may buy counterfeit pharmaceuticals that are in direct competition with our pharmaceuticals, which could have an adverse impact on our revenues, business and results of operations. With respect to China, although the government has recently been increasingly active in policing counterfeit pharmaceuticals, there is not yet an effective counterfeit pharmaceutical regulation control and enforcement system in China. As a result, we may not be able to prevent third parties from selling or purporting to sell our products in China. The proliferation of counterfeit pharmaceuticals has grown in recent years and may continue to grow in the future. The existence of and any increase in the sales and production of counterfeit pharmaceuticals, or the technological capabilities of counterfeiters, could negatively impact our revenues, brand reputation, business and results of operations.

Risks Related to Government Regulation

The regulatory approval process is highly uncertain and we may not obtain regulatory approval for the commercialization of our product candidates.

The time required to obtain approval by the FDA and comparable foreign regulatory authorities is unpredictable, but typically takes many years following the commencement of preclinical studies and clinical trials and depends upon numerous factors, including the substantial discretion of the regulatory authorities. In addition, approval policies, regulations, or the type and amount of clinical data necessary to gain approval may change during the course of a product candidate's clinical development and may vary among jurisdictions. We have not obtained regulatory approval for any product candidate, and it is possible that neither roxadustat nor FG-3019, nor any future product candidates we may discover, in-license or acquire and seek to develop in the future, will ever obtain regulatory approval.

Our product candidates could fail to receive regulatory approval from the FDA or other regulatory authorities for many reasons, including:

- disagreement over the design or implementation of our clinical trials;
- failure to demonstrate that a product candidate is safe and effective for its proposed indication;
- failure of clinical trials to meet the level of statistical significance required for approval;
- failure to demonstrate that a product candidate's clinical and other benefits outweigh its safety risks;
- disagreement over our interpretation of data from preclinical studies or clinical trials;

- disagreement over whether to accept efficacy results from clinical trial sites outside the United States where the standard of care is potentially different from that in the United States;
- the insufficiency of data collected from clinical trials of our present or future product candidates to support the submission and filing of an NDA or other submission or to obtain regulatory approval;
- disapproval of the manufacturing processes or facilities of either our manufacturing plant or third party manufacturers with whom we contract for clinical and commercial supplies; or
- changes in the approval policies or regulations that render our preclinical and clinical data insufficient for approval.

The FDA or other regulatory authorities may require more information, including additional preclinical or clinical data to support approval, which may delay or prevent approval and our commercialization plans, or we may decide to abandon the development program altogether. Even if we do obtain regulatory approval, our product candidates may be approved for fewer or more limited indications than we request, approval may be contingent on the performance of costly post-marketing clinical trials, or approval may require labeling that does not include the labeling claims necessary or desirable for the successful commercialization of that product candidate. In addition, if our product candidates produce undesirable side effects or safety issues, the FDA may require the establishment of REMS or other regulatory authorities may require the establishment of a similar strategy, that may, restrict distribution of our approved products, if any, and impose burdensome implementation requirements on us. Any of the foregoing scenarios could materially harm the commercial prospects for our product candidates.

Even if we believe our current or planned clinical trials are successful, regulatory authorities may not agree that our completed clinical trials provide adequate data on safety or efficacy. Approval by one regulatory authority does not ensure approval by any other regulatory authority. However, a failure or delay in obtaining regulatory approval in one country may have a negative effect on the regulatory process in others. We may not be able to file for regulatory approvals and even if we file we may not receive the necessary approvals to commercialize our product candidates in any market.

If our product candidates obtain marketing approval, we will be subject to more extensive healthcare laws, regulation and enforcement and our failure to comply with those laws could have a material adverse effect on our results of operations and financial condition.

If we obtain approval for any of our product candidates, the regulatory requirements applicable to our operations, in particular our sales and marketing efforts, will increase significantly with respect to our operations and the potential for civil and criminal enforcement by the federal government and the states and foreign governments will increase with respect to the conduct of our business. The laws that may affect our operations in the United States include:

- the federal Anti-Kickback Statute, which prohibits, among other things, persons from knowingly and willfully soliciting, receiving, offering or paying remuneration, directly or indirectly, to induce, or in return for, the purchase or recommendation of an item or service reimbursable under a federal healthcare program, such as the Medicare and Medicaid programs;
- federal civil and criminal false claims laws and civil monetary penalty laws, which prohibit, among other things, individuals or entities from knowingly presenting, or causing to be presented, claims for payment from Medicare, Medicaid, or other third party payors that are false or fraudulent;
- the federal Health Insurance Portability and Accountability Act of 1996, or HIPAA, which created new federal criminal statutes that prohibit executing a scheme to defraud any healthcare benefit program and making false statements relating to healthcare matters;
- HIPAA, as amended by the Health Information Technology and Clinical Health Act, or HITECH, and its implementing regulations, which imposes certain requirements relating to the privacy, security, and transmission of individually identifiable health information;

- the federal physician sunshine requirements under PPACA, which requires manufacturers of drugs, devices, biologics, and medical supplies to report annually to the Centers for Medicare and Medicaid Services, or CMS, information related to payments and other transfers of value to physicians, other healthcare providers, and teaching hospitals, and ownership and investment interests held by physicians and other healthcare providers and their immediate family members;
- foreign and state law equivalents of each of the above federal laws, such as the U.S. Foreign Corrupt Practices Act, or FCPA, anti-kickback and false claims laws that may apply to items or services reimbursed by any third party payor, including commercial insurers; state laws that require pharmaceutical companies to comply with the pharmaceutical industry's voluntary compliance guidelines and the applicable compliance guidance promulgated by the federal government, or otherwise restrict payments that may be made to healthcare providers and other potential referral sources; state laws that require drug manufacturers to report information related to payments and other transfers of value to physicians and other healthcare providers or marketing expenditures; and state laws governing the privacy and security of health information in certain circumstances, many of which differ from each other in significant ways, thus complicating compliance efforts.

The scope of these laws and our lack of experience in establishing the compliance programs necessary to comply with this complex and evolving regulatory environment increases the risks that we may violate the applicable laws and regulations. If our operations are found to be in violation of any of such laws or any other governmental regulations that apply to us, we may be subject to penalties, including civil and criminal penalties, damages, fines, the curtailment or restructuring of our operations, the exclusion from participation in federal and state healthcare programs and imprisonment, any of which could materially adversely affect our ability to operate our business and our financial results.

The impact of recent United States healthcare reform and other changes in the healthcare industry and in healthcare spending is currently unknown, and may adversely affect our business model.

The commercial potential for our approved products, if any, could be affected by changes in healthcare spending and policy in the United States and abroad. We operate in a highly regulated industry and new laws, regulations or judicial decisions, or new interpretations of existing laws, regulations or decisions, related to healthcare availability, the method of delivery or payment for healthcare products and services could negatively impact our business, operations and financial condition.

In the United States, the Medicare Prescription Drug, Improvement, and Modernization Act of 2003, also called the MMA, altered Medicare coverage and payments for pharmaceutical products. The legislation expanded Medicare coverage for drug purchases by the elderly and introduced a new reimbursement methodology based on average sales prices for physician-administered drugs. The MMA also provided authority for limiting the number of drugs that will be covered in any therapeutic class and as a result, we expect that there will be additional pressure to reduce costs. For example, the CMS in implementing the MMA has enacted regulations that reduced capitated payments to dialysis providers. These cost reduction initiatives and other provisions of the MMA could decrease the scope of coverage and the price that may be received for any approved dialysis products and could seriously harm our business and financial condition. While the MMA applies only to drug benefits for Medicare beneficiaries, private payors often follow Medicare coverage policies and payment limitations in setting their own reimbursement rates, and any reduction in reimbursement that results from the MMA may cause a similar reduction in payments from private payors. Similar regulations or reimbursement policies have been enacted in many international markets which could similarly impact the commercial potential for our products.

Under the Medicare Improvements for Patients and Providers Act, or MIPPA, a basic case-mix adjusted composite, or bundled, payment system commenced in January 2011 and transitioned fully by January 2014 to a single reimbursement rate for drugs and all services furnished by renal dialysis centers for Medicare beneficiaries with end-stage renal disease. Specifically, under MIPPA the bundle now covers drugs, services, lab tests and supplies under a single treatment base rate for reimbursement by CMS based on the average cost per treatment,

including the cost of ESAs and IV iron doses, typically without adjustment for usage. It is unknown whether roxadustat will be included in the payment bundle. If roxadustat is included in the bundle, it may reduce the price that could be charged for roxadustat, and therefore potentially limit our profitability. On the other hand, it is possible that exclusion from the bundle may limit or delay market penetration of roxadustat.

More recently, the Patient Protection and Affordable Care Act, as amended by the Health Care and Education Reconciliation Act, or collectively PPACA, was enacted in 2010 with a goal of reducing the cost of healthcare and substantially changing the way healthcare is financed by both government and private insurers. The PPACA, among other things, increases the minimum Medicaid rebates owed by manufacturers under the Medicaid Drug Rebate Program and extends the rebate program to individuals enrolled in Medicaid managed care organizations, establishes annual fees and taxes on manufacturers of certain branded prescription drugs, and creates a new Medicare Part D coverage gap discount program, in which manufacturers must agree to offer 50% point-of-sale discounts off negotiated prices of applicable brand drugs to eligible beneficiaries during their coverage gap period as a condition for the manufacturer's outpatient drugs to be covered under Medicare Part D. In addition, other legislative changes have been proposed and adopted in the United States since the PPACA was enacted. On August 2, 2011, the Budget Control Act of 2011 created measures for spending reductions by Congress. A Joint Select Committee on Deficit Reduction, tasked with recommending a targeted deficit reduction of at least $1.2 trillion for the years 2013 through 2021, was unable to reach required goals, thereby triggering the legislation's automatic reduction to several government programs. This includes aggregate reductions of Medicare payments to providers of up to 2% per fiscal year, which went into effect on April 1, 2013.

It is likely that federal and state legislatures within the United States and foreign governments will continue to consider changes to existing healthcare legislation. We cannot predict the reform initiatives that may be adopted in the future or whether initiatives that have been adopted will be repealed or modified. The continuing efforts of the government, insurance companies, managed care organizations and other payors of healthcare services to contain or reduce costs of healthcare may adversely affect:

- the demand for any products that may be approved for sale;
- the price and profitability of our products;
- pricing, coverage and reimbursement applicable to our products;
- the ability to successfully position and market any approved product; and
- the taxes applicable to our pharmaceutical product revenues.

We may not be able to conduct, or contract others to conduct, animal testing in the future, which could harm our research and development activities.

Certain laws and regulations relating to drug development require us to test our product candidates on animals before initiating clinical trials involving humans. Animal testing activities have been the subject of controversy and adverse publicity. Animal rights groups and other organizations and individuals have attempted to stop animal testing activities by pressing for legislation and regulation in these areas and by disrupting these activities through protests and other means. To the extent the activities of these groups are successful, our research and development activities may be interrupted or delayed.

Our employees may engage in misconduct or other improper activities, including noncompliance with regulatory standards and requirements, which could result in significant liability for us and harm our reputation.

We are exposed to the risk of employee fraud or other misconduct, including intentional failures to comply with FDA regulations or similar regulations of comparable foreign regulatory authorities, provide accurate information to the FDA or comparable foreign regulatory authorities, comply with manufacturing standards we have established, comply with federal and state healthcare fraud and abuse laws and regulations and similar laws

and regulations established and enforced by comparable foreign regulatory authorities, comply with the FCPA and other anti-bribery laws, report financial information or data accurately or disclose unauthorized activities to us. Employee misconduct could also involve the improper use of information obtained in the course of clinical trials, which could result in regulatory sanctions, delays in clinical trials, or serious harm to our reputation. We will adopt a code of conduct for our directors, officers and employees, or the Code of Business Conduct and Ethics, which will be effective as of consummation of this offering, but it is not always possible to identify and deter employee misconduct, and the precautions we take to detect and prevent this activity may not be effective in controlling unknown or unmanaged risks or losses or in protecting us from governmental investigations or other actions or lawsuits stemming from a failure to be in compliance with such laws or regulations. If any such actions are instituted against us, and we are not successful in defending ourselves or asserting our rights, those actions could harm our business, results of operations, financial condition and cash flows, including through the imposition of significant fines or other sanctions.

If we fail to comply with environmental, health and safety laws and regulations, we could become subject to fines or penalties or incur costs that could harm our business.

We are subject to numerous environmental, health and safety laws and regulations, including those governing laboratory procedures and the handling, use, storage, treatment and disposal of hazardous materials and wastes. Our operations involve the use of hazardous and flammable materials, including chemicals and biological materials. Our operations also produce hazardous waste products. We contract with third parties for the disposal of these materials and wastes. We cannot eliminate the risk of contamination or injury from these materials. In the event of contamination or injury resulting from our use of hazardous materials, we could be held liable for any resulting damages, and any liability could exceed our resources. We also could incur significant costs associated with civil or criminal fines and penalties for failure to comply with such laws and regulations. We do not maintain insurance for environmental liability or toxic tort claims that may be asserted against us in connection with our storage or disposal of biological, hazardous or radioactive materials.

In addition, we may incur substantial costs in order to comply with current or future environmental, health and safety laws and regulations applicable to our operations in the United States and foreign countries. These current or future laws and regulations may impair our research, development or manufacturing efforts. Our failure to comply with these laws and regulations also may result in substantial fines, penalties or other sanctions.

Risks Related to Our International Operations

We are establishing international operations and seeking approval to commercialize our product candidates outside of the United States, in particular in China, and a number of risks associated with international operations could materially and adversely affect our business.

We expect to be subject to a number risks related with our international operations, many of which may be beyond our control. These risks include:

- different regulatory requirements for drug approvals in foreign countries;
- different standards of care in various countries that could complicate the evaluation of our product candidates;
- different United States and foreign drug import and export rules;
- reduced protection for intellectual property rights in certain countries;
- unexpected changes in tariffs, trade barriers and regulatory requirements;
- different reimbursement systems and different competitive drugs indicated to treat the indications for which our product candidates are being developed;
- economic weakness, including inflation, or political instability in particular foreign economies and markets;

- compliance with tax, employment, immigration and labor laws for employees living or traveling abroad;
- compliance with the FCPA, and other anti-corruption and anti-bribery laws;
- foreign taxes, including withholding of payroll taxes;
- foreign currency fluctuations, which could result in increased operating expenses and reduced revenues, and other obligations incident to doing business in another country;
- workforce uncertainty in countries where labor unrest is more common than in the United States;
- production shortages resulting from any events affecting raw material supply or manufacturing capabilities abroad;
- potential liability resulting from development work conducted by foreign distributors; and
- business interruptions resulting from geopolitical actions, including war and terrorism, or natural disasters.

The pharmaceutical industry in China is highly regulated and such regulations are subject to change.

The pharmaceutical industry in China is subject to comprehensive government regulation and supervision, encompassing the approval, registration, manufacturing, packaging, licensing and marketing of new drugs. See “Business—Government Regulation—Regulation in China” for a discussion of the regulatory requirements that are applicable to our current and planned business activities in China. In recent years, the regulatory framework in China regarding the pharmaceutical industry has undergone significant changes, and we expect that it will continue to undergo significant changes. Any such changes or amendments may result in increased compliance costs on our business or cause delays in or prevent the successful development or commercialization of our product candidates in China. Chinese authorities have become increasingly vigilant in enforcing laws in the pharmaceutical industry, in some cases launching industry-wide investigations, oftentimes appearing to focus on foreign companies. The costs and time necessary to respond to an investigation can be material. Any failure by us or our partners to maintain compliance with applicable laws and regulations or obtain and maintain required licenses and permits may result in the suspension or termination of our business activities in China.

Patients’ use of traditional Chinese medicine in violation of study protocols in our China studies may lead the CFDA and regulators in other jurisdictions in which are seeking approval to suspend our studies, reject our study data and withhold approval for roxadustat.

A common issue encountered in conducting clinical studies in China is patients’ use of traditional Chinese medicine in violation of study protocols. We believe that many patients with anemia in CKD are currently being treated with traditional Chinese medicine, and it is possible that such patients may continue their use of traditional Chinese medicine after enrollment in our studies and in violation of study protocols. If the patients participating in our China clinical studies do not comply with study protocols and continue to use traditional Chinese medicine, adverse events may emerge in our studies that are due to such traditional Chinese medicine or the interaction between such traditional Chinese medicine and roxadustat. In addition, the use of traditional Chinese medicine by patients in our studies may confound our study results. The occurrence of such adverse events or the confounding our study results may lead the China Food and Drug Administration, or CFDA, and regulators in other jurisdictions in which we are seeking approval to, among other things, suspend our studies, reject our study data and withhold approval for roxadustat.

We are building our own manufacturing facility in China to produce roxadustat and clinical trial material for our corneal implant program. As an organization, we have limited experience in the construction or operation of a manufacturing plant, and, accordingly we cannot assure you we will be able to meet regulatory requirements to operate our plant and to sell our products.

We recently received a Pharmaceutical Production Permit, a general manufacturing license, for our facility in China in which we intend to manufacture roxadustat and FG-5200 in support of the clinical development and

potential commercialization of these product candidates in China. However, we have not yet received a license to commercially manufacture either roxadustat or FG-5200. As an organization, we have limited experience building a manufacturing facility in the past and our facility must be constructed, licensed and operated in conformity with applicable cGMP requirements. We will be obligated to comply with continuing cGMP requirements and there can be no assurance that we will receive and maintain all of the appropriate licenses required to manufacture our product candidates for clinical and commercial use in China. In addition, we and our product suppliers must continually spend time, money and effort in production, record-keeping and quality assurance and appropriate controls in order to ensure that any products manufactured in our facility meet applicable specifications and other requirements for product safety, efficacy and quality and there can be no assurance that our efforts will succeed for licensure or continue to be successful in meeting these requirements. Moreover, our facility, even if approved for the manufacture of roxadustat, would require separate approval for the separate suite being constructed for the manufacture of FG-5200, whether it is categorized as a medical device or other product under CFDA guidelines. For FG-5200, we expect to convert our existing manufacturing process to an automated process which would require us to show that implants from our new manufacturing process are comparable to the implants from our existing manufacturing process. There can be no assurance that we will successfully receive licensure and maintain approval for the manufacture of either or both of roxadustat or FG-5200, either of which would be expected to delay or preclude our ability to develop and commercialize those product candidates in China and may materially adversely affect our business and operations and prospects in China.

Manufacturing facilities in China are subject to periodic unannounced inspections by the CFDA and other regulatory authorities. We expect to depend on these facilities for our product candidates and business operations in China. Natural disasters or other unanticipated catastrophic events, including power interruptions, water shortages, storms, fires, earthquakes, terrorist attacks, government appropriation of our facility, and wars, could significantly impair our ability to operate our manufacturing facility and certain equipment, records and other materials located in these facilities would be difficult to replace or require substantial replacement lead time that would impact our ability to successfully commercialize our product candidates in China. The occurrence of any such event could materially and adversely affect our business, financial condition, results of operations, cash flows and prospects.

Our decision to seek approval in China for roxadustat as a domestic new drug may not be accepted, which would result in additional delay and expense.

Our Chinese subsidiary, FibroGen (China) Medical Technology Development Co., Ltd., or FibroGen China plans to seek approval for roxadustat in China as a Domestic Class 1.1 Drug, which is not a typical route to approval in China for enterprises with headquarters outside of China. Our submission for review of a New Drug Application under domestic drug regulations rather than under the imported drug regulations may not result in approval, or the regulatory authorities may determine that we are not eligible for approval as a domestic drug, which would require us to obtain approval for roxadustat first in the United States or in Europe and then to prepare and submit a new application for approval of roxadustat in China as an imported drug. This would result in significant delay in our commercialization plans for roxadustat. While we plan to provide the China-only clinical trial data required of a domestic drug, the size of our trial in China and the additional safety data from our global roxadustat Phase 3 program may not be deemed sufficient to receive approval. Elements of our plan for approval of roxadustat and other product candidates in China are based on communications with the CFDA and not on formal written regulations, findings or determinations. Accordingly, while we believe we have understandings with the CFDA regarding the domestic drug approval process and the clinical data currently required for approval, the regulatory authorities may later determine that changes are required in the drug approval process, that additional or different clinical data must be generated, or that the domestic drug route may not be available to FibroGen China, any of which could significantly delay approval of roxadustat or any of our other product candidates, and materially and adversely affect our plans and operations in China.

Even if roxadustat is approved in China, we and our collaboration partner in China, AstraZeneca, may experience difficulties in successfully generating sales of roxadustat in China.

We and AstraZeneca have a profit sharing arrangement with respect to roxadustat in China. Even if roxadustat is approved for sale in China, we and AstraZeneca may experience difficulties in our marketing, commercialization and sales efforts in China, and our business and operations could be adversely affected. In particular, sales of roxadustat in China may be limited due to the complex nature of the healthcare system, low average personal income, lack of patient cost reimbursement, pricing controls, poorly developed infrastructure and potentially rapid competition from other products.

The market for treatments of anemia in CKD in China is highly competitive.

Even if roxadustat is approved in China, it will face intense competition in the market for treatments of anemia in CKD. Roxadustat would compete with ESAs, which are offered by established multinational pharmaceutical companies such as Kirin Brewery Company Limited and Roche and Chinese pharmaceutical companies such as 3SBio Inc. and Di'ao Group Chengdu Diao Jiuhong Pharmaceutical Factory. Many of these competitors have substantially greater name recognition, scientific, financial and marketing resources as well as established distribution capabilities than we do. Many of our competitors have more resources to develop or acquire, and more experience in developing or acquiring, new products and in creating market awareness for those products. Many of these competitors have significantly more experience than we have in navigating the Chinese regulatory framework regarding the development, manufacturing and marketing of drugs in China, as well as in marketing and selling anemia products in China. Additionally, we believe that most patients with anemia in CKD in China are currently being treated with traditional Chinese medicine, which is widely accepted and highly prevalent in China. Traditional Chinese medicine treatments are often oral and thus convenient and low-cost, and practitioners of traditional Chinese medicine are numerous and accessible in China. As a result, it may be difficult to persuade patients with anemia in CKD to switch from traditional Chinese medicine to roxadustat.

There is no assurance that roxadustat will be included in the Medical Insurance Catalogs.

Eligible participants in the national basic medical insurance program in China, which consists of mostly urban residents, are entitled to reimbursement from the social medical insurance fund for up to the entire cost of medicines that are included in the Medical Insurance Catalogs. See "Business—Government Regulation—Regulation in China." We believe that the inclusion of a drug in the Medical Insurance Catalogs can substantially improve the sales of a drug. The Ministry of Labor and Social Security in China, or the MLSS, together with other government authorities, select medicines to be included in the Medical Insurance Catalogs based on a variety of factors, including treatment requirements, frequency of use, effectiveness and price. The MLSS also occasionally removes medicines from such catalogs. There can be no assurance that roxadustat will be included, and once included, remain in the Medical Insurance Catalogs. The exclusion or removal of roxadustat from the Medical Insurance Catalogs may materially and adversely affect sales of roxadustat.

We may not be successful in the tender processes for the purchase of medicines by state-owned and state-controlled hospitals.

Most hospitals in China participate in collective tender processes for the purchase of medicines listed in the Medical Insurance Catalogs and medicines that are consumed in large volumes and commonly prescribed for clinical uses. During a collective tender process, the hospitals will establish a committee consisting of recognized pharmaceutical experts. The committee will assess the bids submitted by the various participating pharmaceutical manufacturers, taking into consideration, among other things, the quality and price of the drug product and the service and reputation of the manufacturer. Only drug products that have been selected in the collective tender processes may be purchased by participating hospitals. If we are unable to win purchase contracts through the collective tender processes in which we decide to participate, there will be limited demand for roxadustat, and sales revenues from roxadustat will be materially and adversely affected.

We plan to seek approval for FG-5200 as a medical device, with respect to which we have no development and manufacturing experience. Even if FG-5200 can be manufactured successfully and achieve regulatory approval, we may not achieve commercial success.

We plan to seek regulatory approval for FG-5200 as a medical device, with respect to which we have no development and manufacturing experience. There can be no assurance that we will achieve medical device designation or receive approval for FG-5200. In addition, we have not yet used the material planned for our clinical trials of FG-5200 in any previous clinical trials and because we have not yet received a license to manufacture FG-5200 in our China manufacturing facility or at scale, we will have to show that FG-5200 from our China manufacturing facility meets the applicable regulatory requirements. There can be no assurance that we can meet these requirements or that FG-5200 can be approved for development, manufacture and sale in China.

Even if we are able to manufacture and develop FG-5200 as a medical device in China, the size and length of any potential clinical trials required for approval are uncertain and we are unable to predict the time and investment required to obtain regulatory approval. Moreover, even if FG-5200 can be successfully developed for approval in China, our product candidate would require extensive training and investment in assisting physicians in the use of FG-5200.

The retail prices of any product candidates that we develop may be subject to control, including periodic downward adjustment, by Chinese government authorities.

The price for pharmaceutical products is highly regulated in China, both at the national and provincial level. Price controls may reduce prices to levels significantly below those that would prevail in less regulated markets or limit the volume of products which may be sold, either of which may have a material and adverse effect on potential revenues from sales of roxadustat in China. Moreover, the process and timing for the implementation of price restrictions is unpredictable, which may cause potential revenues from the sales of roxadustat to fluctuate from period to period.

If our planned business activities in China fall within a restricted category under China Catalog for Guidance for Foreign Investment, we will need to operate in China through a variable interest entity structure.

The China Catalog for Guidance for Foreign Investment sets forth the industries and sectors that the Chinese government encourages and restricts foreign investment and participation. The Catalog for Guidance for Foreign Investment is subject to revision from time to time by China Ministry of Commerce. While we currently do not believe the development and marketing of roxadustat falls within a restricted category under the Catalog for Guidance for Foreign Investment, if roxadustat does fall under such a restricted category, we will need to operate in China through a variable interest entity, or VIE, structure. A VIE structure involves a wholly foreign-owned enterprise that would control and receive the economic benefits of a domestic Chinese company through various contractual relationships. Such a structure would subject us to a number of risks that may have an adverse effect on our business, including that China government may determine that such contractual arrangements do not comply with applicable regulations, Chinese tax authorities may require us to pay additional taxes, shareholders of our VIEs may have potential conflicts of interest with us, and we may lose the ability to use and enjoy assets held by our VIEs that are important to the operations of our business if such entities go bankrupt or become subject to dissolution or liquidation proceedings. VIE structures in China have come under increasing scrutiny from accounting firms and the SEC staff. If we do attempt to use a VIE structure and are unsuccessful in structuring it so as to qualify as a VIE, we would not be able to consolidate the financial statements of the VIE with our financial statements, which could have a material adverse effect on our operating results and financial condition.

FibroGen China would be subject to restrictions on paying dividends or making other payments to us, which may restrict our ability to satisfy our liquidity requirements.

We plan to conduct all of our business in China through FibroGen China. We may rely on dividends and royalties paid by FibroGen China for a portion of our cash needs, including the funds necessary to service any

debt we may incur and to pay our operating expenses. The payment of dividends by FibroGen China is subject to limitations. Regulations in China currently permit payment of dividends only out of accumulated profits as determined in accordance with accounting standards and regulations in China. FibroGen China is not permitted to distribute any profits until losses from prior fiscal years have been recouped and in any event must maintain certain minimum capital requirements. FibroGen China is also required to set aside at least 10.0% of its after-tax profit based on Chinese accounting standards each year to its statutory reserve fund until the cumulative amount of such reserves reach 50.0% of its registered capital. Statutory reserves are not distributable as cash dividends. In addition, if FibroGen China incurs debt on its own behalf in the future, the agreements governing such debt may restrict its ability to pay dividends or make other distributions to us.

Any capital contributions from us to FibroGen China must be approved by the Ministry of Commerce in China, and failure to obtain such approval may materially and adversely affect the liquidity position of FibroGen China.

The Ministry of Commerce in China or its local counterpart must approve the amount and use of any capital contributions from us to FibroGen China, and there can be no assurance that we will be able to complete the necessary government registrations and obtain the necessary government approvals on a timely basis, or at all. If we fail to do so, we may not be able to contribute additional capital to fund our Chinese operations, and the liquidity and financial position of FibroGen China may be materially and adversely affected.

We may be subject to currency exchange rate fluctuations and currency exchange restrictions with respect to our operations in China, which could adversely affect our financial performance.

If roxadustat is approved for sale in China, most of our product sales will occur in local Chinese currency and our operating results will be subject to volatility from currency exchange rate fluctuations. To date, we have not hedged against the risks associated with fluctuations in exchange rates and, therefore, exchange rate fluctuations could have an adverse impact on our future operating results. Changes in value of the Renminbi against the U.S. dollar, Euro and other currencies is affected by, among other things, changes in China's political and economic conditions. Currently, the Renminbi is permitted to fluctuate within a narrow and managed band against a basket of certain foreign currencies. Any significant currency exchange rate fluctuations may have a material adverse effect on our business and financial condition.

In addition, China government imposes controls on the convertibility of the Renminbi into foreign currencies and the remittance of foreign currency out of China for certain transactions. Shortages in the availability of foreign currency may restrict the ability of FibroGen China to remit sufficient foreign currency to pay dividends or other payments to us, or otherwise satisfy their foreign currency-denominated obligations. Under existing Chinese foreign exchange regulations, payments of current account items, including profit distributions, interest payments and balance of trade, can be made in foreign currencies without prior approval from the State Administration of Foreign Exchange, or SAFE, by complying with certain procedural requirements. However, approval from SAFE or its local branch is required where Renminbi is to be converted into foreign currency and remitted out of China to pay capital expenses such as the repayment of loans denominated in foreign currencies. The China government may also at its discretion restrict access in the future to foreign currencies for current account transactions. If the foreign exchange control system prevents us from obtaining sufficient foreign currency to satisfy our operational requirements, our liquidity and financial position may be materially and adversely affected.

Because FibroGen China's funds are held in banks that do not provide insurance, the failure of any bank in which FibroGen China deposit its funds could adversely affect our business.

Banks and other financial institutions in China do not provide insurance for funds held on deposit. As a result, in the event of a bank failure, FibroGen China may not have access to funds on deposit. Depending upon the amount of money FibroGen China maintains in a bank that fails, its inability to have access to cash could materially impair its operations.

We may be subject to tax inefficiencies associated with our offshore corporate structure.

The tax regulations of the United States and other jurisdictions in which we operate are extremely complex and subject to change. New laws, new interpretations of existing laws, or limitations on our ability to structure our operations and intercompany transactions may lead to inefficient tax treatment of our revenue, profits, royalties and distributions, if any are achieved. For example, under the Internal Revenue Code, certain types of income derived by our foreign subsidiaries that are controlled foreign corporations could give rise to a current inclusion of income to FibroGen, Inc., for U.S. tax purposes.

In addition, we and our foreign subsidiaries have various intercompany transactions. We may not be able to obtain certain benefits under relevant tax treaties to avoid double taxation on certain transactions among our subsidiaries. If we are not able to avail ourselves of the tax treaties we could be subject to additional taxes, which could adversely affect our financial condition and results of operations.

The enactment of legislation implementing changes in the U.S. taxation of international business activities or the adoption of other tax reform policies could materially impact our financial position and results of operations.

The current Administration has proposed, and Congress has introduced, legislation to reform the U.S. taxation of international business activities, including, but not limited to, limiting the ability of taxpayers to claim and utilize foreign tax credits, limiting the check-the-box regime, revising the rules applicable to transfers of intangible property, and deferring certain tax deductions until non-U.S. earnings are repatriated to the United States. The current Administration has made public statements indicating that it has made the issue a priority, and key members of the U.S. Congress have conducted hearings and proposed legislation. Accordingly, depending on the final form of legislation enacted, if any, the consequences of changes to the U.S. taxation of international business activities may be significant for our China Business and other offshore activities. If any of these proposals are enacted into legislation, they could have material adverse consequences on our effective tax rate, the amount of tax we pay and our financial position and results of operations.

We have implemented a corporate structure taking into consideration our international operations and potentially applicable tax impact on our worldwide operations, and any changes in applicable tax laws and regulations may negatively impact our financial condition and operating results.

We have developed our corporate structure to be closely aligned with the international nature of our business. There can be no assurance that the applicable tax laws and regulations will continue in effect or that the taxing authorities in any or all of the applicable jurisdictions will not challenge one or more aspects or characterizations of our corporate structure and the treatment of transactions or agreements within our corporate structure, or determine that the manner in which we operate our business is not consistent with our corporate structure. Any unfavorable changes in laws and regulations or positions by tax authorities could harm our financial position and results of operations.

Our foreign operations, particularly those in China, are subject to significant risks involving the protection of intellectual property.

We seek to protect the products and technology that we consider important to our business by filing China and international patent applications, relying on trade secrets or pharmaceutical regulatory protection or employing a combination of these methods. We currently have 3 granted patents and 15 pending patent applications relating to roxadustat in China. See “Business—Intellectual Property.” However, the filing of a patent application does not mean that we will be granted a patent, or that any patent eventually granted will be as broad as requested in the patent application or will be sufficient to protect our technology. There are a number of factors that could cause our patents, if granted, to become invalid or unenforceable or that could cause our patent applications not to be granted, including known or unknown prior art, deficiencies in the patent application, or lack of originality

of the technology. Furthermore, the terms of our patents are limited. The patents we hold and patents that may be granted from our currently pending patent applications have, absent any patent term adjustment or extension, a twenty-year protection period starting from the date of application.

Intellectual property rights and confidentiality protections in China may not be as effective as those in the United States or other countries for many reasons, including lack of procedural rules for discovery and evidence, low damage awards, and lack of judicial independence. Implementation and enforcement of Chinese intellectual property laws have historically been deficient and ineffective and may be hampered by corruption and local protectionism. Policing unauthorized use of proprietary technology is difficult and expensive, and we may need to resort to litigation to enforce or defend patents issued to us or to determine the enforceability and validity of our proprietary rights or those of others. The experience and capabilities of Chinese courts in handling intellectual property litigation varies, and outcomes are unpredictable. An adverse determination in any such litigation could materially impair our intellectual property rights and may harm our business.

We are subject to laws and regulations governing corruption, which will require us to develop and implement costly compliance programs.

We must comply with a wide range of laws and regulations to prevent corruption, bribery, and other unethical business practices, including the FCPA and anti-bribery and anti-corruption laws in other countries, particularly China. The creation and implementation of international business practices compliance programs is costly and such programs are difficult to enforce, particularly where reliance on third parties is required.

Anti-bribery laws prohibit us, our employees, and some of our agents or representatives from offering or providing any personal benefit to covered government officials to influence their performance of their duties or induce them to serve interests other than the missions of the public organizations in which they serve. Certain commercial bribery rules also prohibit offering or providing any personal benefit to employees and representatives of commercial companies to influence their performance of their duties or induce them to serve interests other than their employers. The FCPA also obligates companies whose securities are listed in the United States to comply with certain accounting provisions requiring us to maintain books and records that accurately and fairly reflect all transactions of the corporation, including international subsidiaries, and to devise and maintain an adequate system of internal accounting controls for international operations. The anti-bribery provisions of the FCPA are enforced primarily by the Department of Justice, or DOJ. The Securities and Exchange Commission, or the SEC, is involved with enforcement of the books and records provisions of the FCPA.

Compliance with these anti-bribery laws is expensive and difficult, particularly in countries in which corruption is a recognized problem. In addition, the anti-bribery laws present particular challenges in the pharmaceutical industry, because, in many countries including China, hospitals are state-owned or operated by the government, and doctors and other hospital employees are considered foreign government officials; furthermore, in certain countries (China in particular), hospitals and clinics are permitted to sell pharmaceuticals to their patients and are primary or significant distributors of pharmaceuticals, Certain payments to hospitals in connection with clinical studies, procurement of pharmaceuticals and other work have been deemed to be improper payments to government officials and have led to vigorous anti-bribery law enforcement actions imposing heavy fines in multiple jurisdictions, particularly in the United States and China.

It is not always possible to identify and deter violations, and the precautions we take to detect and prevent this activity may not be effective in controlling unknown or unmanaged risks or losses or in protecting us from governmental investigations or other actions or lawsuits stemming from a failure to be in compliance with such laws or regulations.

In the pharmaceutical industry, corrupt practices include, among others, acceptance of kickbacks, bribes or other illegal gains or benefits by the hospitals and medical practitioners from pharmaceutical manufacturers, distributors or their third party agents in connection with the prescription of certain pharmaceuticals. If our employees, affiliates, distributors or third party marketing firms violate these laws or otherwise engage in illegal

practices with respect to their sales or marketing of our products or other activities involving our products, we could be required to pay damages or heavy fines by multiple jurisdictions where we operate, which could materially and adversely affect our financial condition and results of operations. The Chinese government has also sponsored anti-corruption campaigns from time to time, which could have a chilling effect on any future marketing efforts by us to new hospital customers. There have been recent occurrences in which certain hospitals have denied access to sales representatives from pharmaceutical companies because the hospitals wanted to avoid the perception of corruption. If this attitude becomes widespread among our potential customers, our ability to promote our products to hospitals may be adversely affected.

As we expand our operations in China and other jurisdictions internationally, we will need to increase the scope of our compliance programs to address the risks relating to the potential for violations of the FCPA and other anti-bribery and anti-corruption laws. Our compliance programs will need to include policies addressing not only the FCPA, but also the provisions of a variety of anti-bribery and anti-corruption laws in multiple foreign jurisdictions, including China, encompass provisions relating to books and records that will apply to us as we become a public company and include effective training for our personnel throughout our organization. The creation and implementation of anti-corruption compliance programs is costly and such programs are difficult to enforce, particularly where reliance on third parties is required. Violation of the FCPA and other anti-corruption laws can result in significant administrative and criminal penalties for us and our employees, including substantial fines, suspension or debarment from government contracting, prison sentences, or even the death penalty in extremely serious cases in certain countries. The SEC also may suspend or bar us from trading securities on U.S. exchanges for violations of the FCPA's accounting provisions. Even if we are not ultimately punished by government authorities, the costs of investigation and review, the distraction of company personnel, legal defense costs, and harm to our reputation could be substantial and could limit our profitability or our ability to develop or commercialize our product candidates. In addition, if any of our competitors are not subject to the FCPA, they may engage in practices that will lead to their receipt of preferential treatment from foreign hospitals and enable them to secure business from foreign hospitals in ways that are unavailable to us.

Our operations in China subject us to various Chinese labor and social insurance laws, and our failure to comply with such laws may materially and adversely affect our business, financial condition and results of operations.

We are subject to China Labor Contract Law, which became effective in 2008 and provides stronger protections for employees and imposes more obligations on employers. The Labor Contract Law places certain restrictions on the circumstances under which employers may terminate labor contracts and require economic compensation to employees upon termination of employment, among other things. In addition, companies operating in China are generally required to contribute to labor union funds and the mandatory social insurance and housing funds. Any failure by us to comply with Chinese labor and social insurance laws may subject us to late fees, fines and penalties, or cause the suspension or termination of our ability to conduct business in China, any of which could have a material and adverse effect on business, results of operations and prospects.

Uncertainties with respect to the China legal system could have a material adverse effect on us.

The legal system of China is a civil law system primarily based on written statutes. Unlike in a common law system, prior court decisions may be cited for reference but are not binding. Because the China legal system continues to rapidly evolve, the interpretations of many laws, regulations and rules are not always uniform and enforcement of these laws, regulations and rules involve uncertainties, which may limit legal protections available to us. Moreover, decision makers in China judicial system have significant discretion in interpreting and implementing statutory and contractual terms, which may render it difficult for FibroGen China to enforce the contracts it has entered into with our business partners, customers and suppliers. Different government departments may have different interpretations of certain laws and regulations, and licenses and permits issued or granted by one government authority may be revoked by a higher government authority at a later time. Navigating the uncertainty and change in China legal system will require the devotion of significant resources and time, and there can be no assurance that our contractual and other rights will ultimately be enforced.

Changes in China's economic, political or social conditions or government policies could have a material adverse effect on our business and operations.

The Chinese economy and Chinese society continue to undergo significant change. Adverse changes in the political and economic policies of the Chinese government could have a material adverse effect on the overall economic growth of China, which could adversely affect our ability to conduct business in China. The Chinese government continues to adjust economic policies to promote economic growth. Some of these measures benefit the overall Chinese economy, but may also have a negative effect on us. For example, our financial condition and results of operations in China may be adversely affected by government control over capital investments or changes in tax regulations. As the Chinese pharmaceutical industry grows and evolves, the Chinese government may also implement measures to change the structure of foreign investment in this industry. We are unable to predict the frequency and scope of such policy changes, any of which could materially and adversely affect FibroGen China's liquidity and access to capital and its ability to conduct business in China. Any failure on our part to comply with changing government regulations and policies could result in the loss of our ability to develop and commercialize our product candidates in China.

Risks Related to the Operation of Our Business

We may encounter difficulties in managing our growth and expanding our operations successfully.

As we seek to advance our product candidates through clinical trials and commercialization, we will need to expand our development, regulatory, manufacturing, commercialization and administration capabilities or contract with third parties to provide these capabilities for us. As our operations expand and we undertake the efforts and expense to operate as a public reporting company, we expect that we will need to increase the responsibilities on members of management and manage any future growth effectively. Our failure to accomplish any of them could prevent us from successfully implementing our strategy and maintaining the confidence of investors in our company.

If we fail to attract and keep senior management and key personnel, in particular our chief executive officer, we may be unable to successfully develop our product candidates, conduct our clinical trials and commercialize our product candidates.

We are highly dependent on our chief executive officer, Thomas Neff, and other members of our senior management team. The loss of the services of Mr. Neff or any of these other individuals would be expected to significantly negatively impact the development and commercialization of our product candidates, our existing collaborative relationships and our ability to successfully implement our business strategy.

Recruiting and retaining qualified commercial, development, scientific, clinical and manufacturing personnel are and will continue to be critical to our success. Furthermore, replacing executive officers and key employees may be difficult and may take an extended period of time because of the limited number of individuals in our industry with the breadth of skills and experience required to successfully develop, gain regulatory approval of and commercialize product candidates. We may be unable to hire, train, retain or motivate these key personnel on acceptable terms given the intense competition among numerous biopharmaceutical companies for similar personnel.

There is also significant competition, in particular in the San Francisco Bay area, for the hiring of experienced and qualified personnel, which increases the importance of retention of our existing personnel. If we are unable to continue to attract and retain personnel with the quality and experience applicable to our product candidates, our ability to pursue our strategy will be limited and our business and operations would be adversely affected.

If product liability lawsuits are brought against us, we may incur substantial liabilities and may be required to limit commercialization of our product candidates.

We face an inherent risk of product liability as a result of the clinical testing, manufacturing and commercialization of our product candidates. Any such product liability claims may include allegations of defects in manufacturing, defects in design, a failure to warn of dangers inherent in a product, negligence, strict liability or breach of warranty. Claims could also be asserted under state consumer protection acts. If we are unable to obtain insurance coverage at levels that are appropriate to maintain our business and operations, or if we are unable to successfully defend ourselves against product liability claims, we may incur substantial liabilities or otherwise cease operations. Product liability claims may result in:

- termination of further development of unapproved product candidates or significantly reduced demand for any approved products;
- material costs and expenses to defend the related litigation;
- a diversion of time and resources across the entire organization, including our executive management;
- product recalls, withdrawals or labeling restrictions;
- termination of our collaboration relationships or disputes with our collaboration partners; and
- reputational damage negatively impacting our other product candidates in development.

If we fail to obtain and retain sufficient product liability insurance at an acceptable cost to protect against potential product liability claims, we may not be able to continue to develop our product candidates. We maintain product liability insurance in a customary amount for the stage of development of our product candidates. Although we believe that we have sufficient coverage based on the advice of our third party advisors, there can be no assurance that such levels will be sufficient for our needs. Moreover, our insurance policies have various exclusions, and we may be in a dispute with our carrier as to the extent and nature of our coverage, including whether we are covered under the applicable product liability policy. If we are not able to ensure coverage or are required to pay substantial amounts to settle or otherwise contest the claims for product liability, our business and operations would be negatively affected.

Our business and operations would suffer in the event of computer system failures.

Despite the implementation of security measures, our internal computer systems, and those of our CROs, collaboration partners, and other third parties on which we rely, are vulnerable to damage from computer viruses, unauthorized access, natural disasters, fire, terrorism, war and telecommunication and electrical failures. If such an event were to occur and cause interruptions in our operations, it could result in a material disruption of our drug development programs. For example, the loss of clinical trial data from completed, ongoing or planned clinical trials could result in delays in our regulatory approval efforts and significantly increase our costs to recover or reproduce the data. To the extent that any disruption or security breach results in a loss of, or damage to, our data or applications, or inappropriate disclosure of confidential or proprietary information, we could incur liability and the further development of our product candidates could be delayed.

Our headquarters and data storage facilities are located near known earthquake fault zones. The occurrence of an earthquake, fire or any other catastrophic event could disrupt our operations or the operations of third parties who provide vital support functions to us, which could have a material adverse effect on our business, results of operations and financial condition.

We and some of the third party service providers on which we depend for various support functions, such as data storage, are vulnerable to damage from catastrophic events, such as power loss, natural disasters, terrorism and similar unforeseen events beyond our control. Our corporate headquarters and other facilities are located in the San Francisco Bay Area, which in the past has experienced severe earthquakes and fires.

We do not carry earthquake insurance. Earthquakes or other natural disasters could severely disrupt our operations, and have a material adverse effect on our business, results of operations, financial condition and prospects.

If a natural disaster, power outage or other event occurred that prevented us from using all or a significant portion of our headquarters, damaged critical infrastructure, such as our data storage facilities, enterprise financial systems or manufacturing resource planning and enterprise quality systems, or that otherwise disrupted operations, it may be difficult or, in certain cases, impossible for us to continue our business for a substantial period of time. The disaster recovery and business continuity plans we have in place currently are limited and are unlikely to prove adequate in the event of a serious disaster or similar event. We may incur substantial expenses as a result of the limited nature of our disaster recovery and business continuity plans, which, particularly when taken together with our lack of earthquake insurance, could have a material adverse effect on our business.

Furthermore, integral parties in our supply chain are operating from single sites, increasing their vulnerability to natural disasters or other sudden, unforeseen and severe adverse events. If such an event were to affect our supply chain, it could have a material adverse effect on our business.

Risks Related to Our Common Stock and This Offering

We do not know whether a market will develop for our common stock or what the market price of our common stock will be, and as a result, it may be difficult for you to sell your shares of our common stock.

Before this offering, there was no public trading market for our common stock. If a market for our common stock does not develop or is not sustained, it may depress the market price of our common stock and make it difficult for you to sell your shares of common stock at an attractive price, or at all. Further, an inactive market may also impair our ability to raise capital by selling shares of our common stock and may impair our ability to enter into strategic partnerships or acquire companies or products by using our shares of common stock as consideration. We cannot predict the prices at which our common stock will trade. It is possible that in one or more future periods our results of operations may be below the expectations of public market analysts and investors and, as a result of these and other factors, the price of our common stock may fall.

The market price of our common stock may be highly volatile, and you may not be able to resell your shares at or above the initial public offering price.

In general, pharmaceutical, biotechnology and other life sciences company stocks have been highly volatile in the current market. The volatility of pharmaceutical, biotechnology and other life sciences company stocks is sometimes unrelated to the operating performance of particular companies and biotechnology and life science companies stocks often respond to trends and perceptions rather than financial performance. In particular, the market price of shares of our common stock could be subject to wide fluctuations in response to the following factors:

- results of clinical trials of our product candidates, including roxadustat and FG-3019;
- the timing of the release of results of and regulatory updates regarding our clinical trials;
- the level of expenses related to any of our product candidates or clinical development programs;
- results of clinical trials of our competitors' products;
- safety issues with respect to our product candidates or our competitors' products;
- regulatory actions with respect to our product candidates and any approved products or our competitors' products;
- fluctuations in our financial condition and operating results, which will be significantly affected by the manner in which we recognize revenue from the achievement of milestones under our collaboration agreements;

- adverse developments concerning our collaborations and our manufacturers;
- the termination of a collaboration or the inability to establish additional collaborations;
- the publication of research reports by securities analysts about us or our competitors or our industry or negative recommendations or withdrawal of research coverage by securities analysts;
- the inability to obtain adequate product supply for any approved drug product or inability to do so at acceptable prices;
- disputes or other developments relating to proprietary rights, including patents, litigation matters and our ability to obtain patent protection for our technologies;
- the ineffectiveness of our internal controls;
- our failure or the failure of our competitors to meet analysts' projections or guidance that we or our competitors may give to the market;
- additions and departures of key personnel;
- announced strategic decisions by us or our competitors;
- changes in legislation or other regulatory developments affecting our product candidates or our industry;
- fluctuations in the valuation of the biotechnology industry and particular companies perceived by investors to be comparable to us;
- sales of our common stock by us, our insiders or our other stockholders;
- speculation in the press or investment community;
- announcement or expectation of additional financing efforts;
- announcements of investigations or regulatory scrutiny of our operations or lawsuits filed against us;
- changes in accounting principles;
- activities of the government of China, including those related to the pharmaceutical industry as well as industrial policy generally;
- performance of other United States publicly traded companies with significant operations in China;
- terrorist acts, acts of war or periods of widespread civil unrest;
- natural disasters such as earthquakes and other calamities;
- changes in market conditions for biopharmaceutical stocks;
- changes in general market and economic conditions; and
- the other factors described in this "Risk Factors" section.

As a result of fluctuations caused by these and other factors, comparisons of our operating results across different periods may not be accurate indicators of our future performance. Any fluctuations that we report in the future may differ from the expectations of market analysts and investors, which could cause the price of our common stock to fluctuate significantly. Moreover, securities class action litigation has often been initiated against companies following periods of volatility in their stock price. This type of litigation could result in substantial costs and divert our management's attention and resources, and could also require us to make substantial payments to satisfy judgments or to settle litigation.

If securities or industry analysts do not publish research or reports about our business, or if they change their recommendations regarding our stock adversely, our stock price and trading volume could decline.

The trading market for our common stock will be influenced by the research and reports that industry or securities analysts publish about us or our business. If one or more of the analysts who cover us downgrade our stock, our stock price would likely decline. If one or more of these analysts cease coverage of our company or fail to regularly publish reports on us, we could lose visibility in the financial markets, which in turn could cause our stock price or trading volume to decline.

Our principal stockholders and management own a significant percentage of our stock and will be able to exercise significant influence over matters subject to stockholder approval.

As of September 30, 2014, our executive officers, directors and principal stockholders, together with their respective affiliates, owned approximately 29.1% of our common stock, including shares subject to outstanding options that are exercisable within 60 days after such date, and we expect that upon completion of this offering and the concurrent private placement that same group will continue to hold at least 25.1% of our outstanding common stock. Accordingly, even after this offering and the concurrent private placement, these stockholders will be able to exert a significant degree of influence over our management and affairs and over matters requiring stockholder approval, including the election of our board of directors and approval of significant corporate transactions. The interests of this group may differ from those of other stockholders and they may vote their shares in a way that is contrary to the way other stockholders vote their shares. This concentration of ownership could have the effect of entrenching our management and/or the board of directors, delaying or preventing a change in our control or otherwise discouraging a potential acquirer from attempting to obtain control of us, which in turn could have a material and adverse effect on the fair market value of our common stock.

We are an "emerging growth company" as defined in the Jumpstart Our Business Startups Act of 2012, and we cannot be certain if the reduced disclosure requirements applicable to emerging growth companies will make our common stock less attractive to investors.

We are an "emerging growth company," as defined in the Jumpstart Our Business Startups Act of 2012, or the JOBS Act and for so long as we continue to be an emerging growth company, we may take advantage of exemptions from various reporting requirements that are applicable to other public companies that are not emerging growth companies. Specifically, the JOBS Act:

- permits us to provide only two years of audited financial statements, in addition to any required unaudited interim financial statements, with correspondingly reduced "Management's Discussion and Analysis of Financial Condition and Results of Operations" disclosure;
- eliminates the requirement to comply with the auditor attestation requirements in the assessment of our internal control over financial reporting;
- removes the requirement to comply with any requirement that may be adopted by the Public Company Accounting Oversight Board;
- reduces disclosure obligations regarding executive compensation; and
- exempts from the requirements of holding a non-binding stockholder advisory vote on executive compensation and stockholder approval of any golden parachute payments not previously approved.

This prospectus is based upon the reduced reporting burdens under the JOBS Act and we expect to continue at these reduced levels for so long as we are permitted under the JOBS Act. Specifically, we could be an emerging growth company for up to five years, although circumstances could cause us to lose that status earlier, including any of the following: if the market value of our common stock held by non-affiliates exceeds $700 million as of June 30 in any calendar year before that time or if we have total annual gross revenue of $1 billion or more during any fiscal year before that time, in which cases we would no longer be an emerging growth company as of

the end of such year or, if we issue more than $1 billion in non-convertible debt during any three-year period before that time, we would cease to be an emerging growth company immediately. If any investors find our common stock less attractive as a result, there may be a less active market for our common stock and our stock price may be more volatile.

In addition, Section 107 of the JOBS Act provides that an emerging growth company can take advantage of an extended transition period for complying with new or revised accounting standards. However, we chose to "opt out" of such extended transition period, and as a result, we will comply with new or revised accounting standards on the relevant dates that adoption of such standards is required for non-emerging growth companies. Our decision to opt out of the extended transition period for complying with new or revised accounting standards is irrevocable.

A significant portion of our total outstanding shares may be sold into the public market in the near future, which could cause the market price of our common stock to drop significantly, even if our business is doing well.

Sales of a substantial number of shares of our common stock in the public market could occur at any time after the expiration of the lock-up agreements described in the "Underwriting" section of this prospectus. These sales, or the market perception that the holders of a large number of shares intend to sell shares, could reduce the market price of our common stock. After this offering and the concurrent private placement, we will have 55,671,852 shares of common stock outstanding. This includes the 7,100,000 shares that we are selling in this offering, which may be resold in the public market immediately subject to any restrictions imposed on our affiliates under Rule 144. In addition, up to 5% of the shares sold in this offering may be locked up for 45 days following the date of this prospectus through a directed share program. Such 45-day lock up will only apply to purchasers of a minimum of 15,000 shares purchased through the directed share program. The remaining shares, or 85.8% of our outstanding shares after this offering and the concurrent private placement, are currently or will be restricted as a result of securities laws, lock-up agreements or market stand off agreements but will be able to be sold, subject to any applicable volume limitations under federal securities laws with respect to affiliate sales, in the near future as set forth in the section entitled "Shares Eligible For Future Sale".

In addition, as of December 31, 2013, there were 11,084,044 shares subject to outstanding options and 173,116 shares subject to outstanding warrants to purchase common stock that will become eligible for sale in the public market to the extent permitted by any applicable vesting requirements, the lock-up agreements and Rules 144 and 701 under the Securities Act. We also intend to register all shares of common stock that we may issue under our employee benefit plans, including our 2005 Equity Incentive Plan and 2014 Equity Incentive Plan. Once we register these shares and they are issued in accordance with the terms of the plans, they can be freely sold in the public market upon issuance, subject to the lock-up agreements and the restrictions imposed on our affiliates under Rule 144. For more information, see "Shares Eligible for Future Sale—Rule 144".

Proceedings instituted by the SEC against five China based accounting firms, including the Chinese affiliate of our independent registered public accounting firm, could result in our financial statements being determined to not be in compliance with the requirements of the Exchange Act.

In late 2012, the SEC commenced administrative proceedings under Rule 102(e) of its Rules of Practice and also under the Sarbanes-Oxley Act of 2002 against the Chinese affiliates of the "big four" accounting firms, including PricewaterhouseCoopers Zhong Tian CPAs Limited, the Chinese affiliate of our independent registered public accounting firm. The Rule 102(e) proceedings initiated by the SEC relate to these firms' failure to produce documents, including audit work papers, in response to the request of the SEC pursuant to Section 106 of the Sarbanes-Oxley Act of 2002, as the auditors located in China are not in a position lawfully to produce documents directly to the SEC because of restrictions under Chinese law and specific directives issued by the China Securities Regulatory Commission. The issues raised by the proceedings are not specific to our auditors or to us.

In January 2014, an administrative law judge reached an initial decision that the Chinese affiliates of the "big four" accounting firms should be barred from practicing before the SEC for a period of six months. However, it is currently impossible to determine the ultimate outcome of this matter as the accounting firms have filed a petition for review of the initial decision, and, pending that review, the effect of the initial decision is suspended. It will, therefore, be for the commissioners of the SEC to make a legally binding order specifying the sanctions, if any, to be placed on these audit firms. Once such an order was made, the accounting firms would have a right to appeal to U.S. Federal courts, and the effect of the order might be further suspended pending the outcome of that appeal.

Although it does not play a substantial role (as defined under PCAOB standards) in the audit of our consolidated financial statements, if PricewaterhouseCoopers Zhong Tian CPAs Limited were denied, temporarily, the ability to practice before the SEC, our ability to produce audited consolidated financial statements for our company could be affected and we could be determined not to be in compliance with the requirements of the Securities Exchange Act of 1934. Such a determination could ultimately lead to the delisting of our shares from the NASDAQ Global Select Market or deregistration from the SEC, or both, which would substantially reduce or effectively terminate the trading of our stock.

You will incur immediate and substantial dilution as a result of this offering.

The initial public offering price of our common stock will be substantially higher than the net tangible book value per share of our common stock. Therefore, if you purchase common stock in this offering, you will pay a price per share that substantially exceeds our pro forma adjusted net tangible book value per share after this offering. To the extent shares subsequently are issued under options, you will incur further dilution. Based on an initial assumed public offering price of $17.50, the midpoint of the range set forth on the cover page of this prospectus, you will incur immediate and substantial dilution of $13.21 per share, representing the difference between our pro forma net tangible book value per share, after giving effect to this offering and the concurrent private placement, and the assumed initial public offering price. In addition, purchasers of common stock in this offering and the concurrent private placement will have contributed approximately 30.7% of the aggregate price paid by all purchasers of our stock but will own approximately 14.8% of our common stock outstanding after this offering and the concurrent private placement.

In addition, as of September 30, 2014, we had outstanding stock options to purchase an aggregate of 12,970,404 shares of common stock, and warrants to purchase an aggregate of 173,116 shares of common stock at a weighted-average exercise price of $7.58 per share. As of September 30, 2014, 958,996 shares of our common stock were issuable upon the exchange of outstanding preferred stock of our European subsidiary, FibroGen Europe Oy, or FibroGen Europe. To the extent these outstanding options, warrants or shares of FibroGen Europe preferred stock are exercised to purchase or are exchanged for shares of our common stock, there will be further dilution to investors in the offering and the concurrent private placement. Further, because we may need to raise additional capital to fund our clinical development programs, we may in the future sell substantial amounts of common stock or securities convertible into or exchangeable for common stock.

We have broad discretion in the use of net proceeds from this offering and the concurrent private placement and may not use them effectively.

We currently intend to use the net proceeds from this offering and the concurrent private placement to further development of our product candidates in additional indications and for general corporate purposes. Investors are directed to see the section of this prospectus entitled "Use of Proceeds." Although we currently plan to use the net proceeds from this offering and the concurrent private placement as described, we will have broad discretion in the application of the net proceeds. Our failure to apply these funds effectively could affect our ability to continue to develop, manufacture and commercialize our product candidates.

We will incur increased costs as a result of operating as a public company and we expect to devote substantial resources to public company compliance programs.

As a public company, we will incur significant legal, insurance, accounting and other expenses that we did not incur as a private company. The Sarbanes-Oxley Act of 2002, the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010, the listing requirements of The NASDAQ Stock Market and other applicable securities rules and regulations impose various requirements on public companies, including establishment and maintenance of effective disclosure and financial controls and corporate governance practices. We intend to invest resources to comply with evolving laws, regulations and standards, and this investment will result in increased general and administrative expenses and may divert management's time and attention from product development activities. If our efforts to comply with new laws, regulations and standards differ from the activities intended by regulatory or governing bodies due to ambiguities related to practice, regulatory authorities may initiate legal proceedings against us and our business may be harmed. In the future, it will be more expensive for us to obtain director and officer liability insurance, and we may be required to accept reduced coverage or incur substantially higher costs to obtain coverage. These factors could also make it more difficult for us to attract and retain qualified members of our board of directors, particularly to serve on our audit committee and compensation committee, and qualified executive officers.

Specifically, in order to comply with the requirements of being a public company, we may need to undertake various actions, including implementing new internal controls and procedures and hiring new accounting or internal audit staff. The Sarbanes-Oxley Act requires that we maintain effective disclosure controls and procedures and internal control over financial reporting. We are continuing to develop and refine our disclosure controls and other procedures that are designed to ensure that information required to be disclosed by us in the reports that we file with the SEC is recorded, processed, summarized and reported within the time periods specified in the SEC's rules and forms, and that information required to be disclosed in reports under the Exchange Act is accumulated and communicated to our principal executive and financial officers. Any failure to develop or maintain effective controls could adversely affect the results of periodic management evaluations. In the event that we are not able to demonstrate compliance with the Sarbanes-Oxley Act, that our internal control over financial reporting is perceived as inadequate, or that we are unable to produce timely or accurate financial statements, investors may lose confidence in our operating results and the price of our ordinary shares could decline. In addition, if we are unable to continue to meet these requirements, we may not be able to remain listed on The NASDAQ Stock Market.

We are not currently required to comply with the SEC's rules that implement Section 404 of the Sarbanes-Oxley Act, or Section 404, and are therefore not yet required to make a formal assessment of the effectiveness of our internal control over financial reporting for that purpose. Upon becoming a public company, we will be required to comply with certain of these rules, which will require management to certify financial and other information in our quarterly and annual reports and provide an annual management report on the effectiveness of our internal control over financial reporting commencing with our second annual report. This assessment will need to include the disclosure of any material weaknesses in our internal control over financial reporting identified by our management or our independent registered public accounting firm. To achieve compliance with Section 404 within the prescribed period, we will need to continue to dedicate internal resources, outside consultants and continue to execute a detailed work plan to assess and document the adequacy of internal control over financial reporting, continue steps to improve control processes as appropriate, validate through testing that controls are functioning as documented and implement a continuous reporting and improvement process for internal control over financial reporting. Despite our efforts, there is a risk that we will not be able to conclude, within the prescribed timeframe or at all, that our internal control over financial reporting is effective as required by Section 404. If we identify one or more material weaknesses, it could result in an adverse reaction in the financial markets due to a loss of confidence in the reliability of our financial statements and we cannot assure you that there will not be material weaknesses or significant deficiencies in our internal controls in the future.

We may engage in future acquisitions that could disrupt our business, cause dilution to our stockholders and harm our business, results of operations, financial condition and cash flows and future prospects.

While we currently have no specific plans to acquire any other businesses, we may, in the future, make acquisitions of, or investments in, companies that we believe have products or capabilities that are a strategic or commercial fit with our present or future product candidates and business or otherwise offer opportunities for our company. In connection with these acquisitions or investments, we may:

- issue stock that would dilute our existing stockholders' percentage of ownership;
- incur debt and assume liabilities; and
- incur amortization expenses related to intangible assets or incur large and immediate write-offs.

We may not be able to complete acquisitions on favorable terms, if at all. If we do complete an acquisition, we cannot assure you that it will ultimately strengthen our competitive position or that it will be viewed positively by customers, financial markets or investors. Furthermore, future acquisitions could pose numerous additional risks to our operations, including:

- problems integrating the purchased business, products or technologies, or employees or other assets of the acquisition target;
- increases to our expenses;
- disclosed or undisclosed liabilities of the acquired asset or company;
- diversion of management's attention from their day-to-day responsibilities;
- reprioritization of our development programs and even cessation of development and commercialization of our current product candidates;
- harm to our operating results or financial condition;
- entrance into markets in which we have limited or no prior experience; and
- potential loss of key employees, particularly those of the acquired entity.

We may not be able to complete any acquisitions or effectively integrate the operations, products or personnel gained through any such acquisition.

Provisions in our charter documents and Delaware law may have anti-takeover effects that could discourage an acquisition of us by others, even if an acquisition would be beneficial to our stockholders, and may prevent attempts by our stockholders to replace or remove our current directors or management.

Provisions in our amended and restated certificate of incorporation and amended and restated bylaws that will become effective upon the closing of this offering contain provisions that may have the effect of discouraging, delaying or preventing a change in control of us or changes in our management. These provisions could also limit the price that investors might be willing to pay in the future for shares of our common stock, thereby depressing the market price of our common stock. In addition, because our board of directors is responsible for appointing the members of our management team, these provisions may frustrate or prevent any attempts by our stockholders to replace or remove our current management by making it more difficult for stockholders to replace members of our board of directors. Among other things, these provisions:

- authorize "blank check" preferred stock, which could be issued by our board of directors without stockholder approval and may contain voting, liquidation, dividend and other rights superior to our common stock;
- create a classified board of directors whose members serve staggered three-year terms;

- specify that special meetings of our stockholders can be called only by our board of directors pursuant to a resolution adopted by a majority of the total number of directors;
- prohibit stockholder action by written consent;
- establish an advance notice procedure for stockholder approvals to be brought before an annual meeting of our stockholders, including proposed nominations of persons for election to our board of directors;
- provide that our directors may be removed prior to the end of their term only for cause;
- provide that vacancies on our board of directors may be filled only by a majority of directors then in office, even though less than a quorum;
- require a supermajority vote of the holders of our common stock or the majority vote of our board of directors to amend our bylaws; and
- require a supermajority vote of the holders of our common stock to amend the classification of our board of directors into three classes and to amend certain other provisions of our certificate of incorporation.

These provisions, alone or together, could delay or prevent hostile takeovers and changes in control or changes in our management by making it more difficult for stockholders to replace members of our board of directors, which is responsible for appointing the members of our management.

Moreover, because we are incorporated in Delaware, we are governed by certain anti-takeover provisions under Delaware law which may discourage, delay or prevent someone from acquiring us or merging with us whether or not it is desired by or beneficial to our stockholders. We are subject to the provisions of Section 203 of the Delaware General Corporation Law, which prohibits a person who owns in excess of 15% of our outstanding voting stock from merging or combining with us for a period of three years after the date of the transaction in which the person acquired in excess of 15% of our outstanding voting stock, unless the merger or combination is approved in a prescribed manner.

Any provision of our amended and restated certificate of incorporation, our amended and restated bylaws or Delaware law that has the effect of delaying or deterring a change in control could limit the opportunity for our stockholders to receive a premium for their shares of our common stock, and could also affect the price that some investors are willing to pay for our common stock.

Our ability to use net operating losses to offset future taxable income may be subject to certain limitations.

In general, under Section 382 of the Internal Revenue Code of 1986, as amended, or the Code, a corporation that undergoes an “ownership change” is subject to limitations on its ability to utilize its pre-change net operating losses or tax credits, or NOLs or credits, to offset future taxable income. Our existing NOLs or credits may be subject to substantial limitations arising from previous ownership changes, and if we undergo an ownership change in connection with or after this offering, our ability to utilize NOLs or credits could be further limited by Section 382 of the Code. In addition, future changes in our stock ownership, many of which are outside of our control, could result in an ownership change under Section 382 of the Code. Our NOLs or credits may also be impaired under state law. Accordingly, we may not be able to utilize a material portion of our NOLs or credits. Furthermore, our ability to utilize our NOLs or credits is conditioned upon our attaining profitability and generating United States federal and state taxable income. As described above under “—Risks Related to our Financial Position and History of Operating Losses,” we have incurred significant net losses since our inception and anticipate that we will continue to incur significant losses for the foreseeable future; thus, we do not know whether or when we will generate the United States federal or state taxable income necessary to utilize our NOLs or credits. A full valuation allowance has been provided for the entire amount of our NOLs and credits.

Our amended and restated certificate of incorporation designates the state or federal courts located in the State of Delaware as the sole and exclusive forum for certain types of actions and proceedings that may be initiated by our stockholders, which could limit our stockholders' ability to obtain a favorable judicial forum for disputes with us or our directors, officers or employees.

Our amended and restated certificate of incorporation that will become effective upon the closing of this offering provides that, subject to limited exceptions, the state and federal courts located in the State of Delaware will be the sole and exclusive forum for (1) any derivative action or proceeding brought on our behalf, (2) any action asserting a claim of breach of a fiduciary duty owed by any of our directors, officers or other employees to us or our stockholders, (3) any action asserting a claim against us arising pursuant to any provision of the Delaware General Corporation Law, our amended and restated certificate of incorporation or our amended and restated by-laws, or (4) any other action asserting a claim against us that is governed by the internal affairs doctrine. Any person or entity purchasing or otherwise acquiring any interest in shares of our capital stock shall be deemed to have notice of and to have consented to the provisions of our amended and restated certificate of incorporation described above. This choice of forum provision may limit a stockholder's ability to bring a claim in a judicial forum that it finds favorable for disputes with us or our directors, officers or other employees, which may discourage such lawsuits against us and our directors, officers and employees. Alternatively, if a court were to find these provisions of our amended and restated certificate of incorporation inapplicable to, or unenforceable in respect of, one or more of the specified types of actions or proceedings, we may incur additional costs associated with resolving such matters in other jurisdictions, which could adversely affect our business and financial condition.

Because we do not anticipate paying any cash dividends on our capital stock in the foreseeable future, capital appreciation, if any, will be your sole source of gain and you may never receive a return on your investment.

You should not rely on an investment in our common stock to provide dividend income. We do not anticipate that we will pay any cash dividends to holders of our common stock in the foreseeable future and investors seeking cash dividends should not purchase our common stock. We plan to retain any earnings to invest in our product candidates and maintain and expand our operations. Therefore, capital appreciation, or an increase in your stock price, which may never occur, may be the only way to realize any return on your investment.

CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus, particularly in the sections captioned “Prospectus Summary,” “Risk Factors,” “Management’s Discussion and Analysis of Financial Condition and Results of Operations” and “Business,” contains forward-looking statements, which involve substantial risks and uncertainties. In this prospectus, all statements other than statements of historical or present facts contained in this prospectus, including statements regarding our future financial condition, business strategy and plans and objectives of management for future operations, are forward-looking statements. In some cases, you can identify forward-looking statements by terminology such as “believe,” “will,” “may,” “estimate,” “continue,” “anticipate,” “contemplate,” “intend,” “target,” “project,” “should,” “plan,” “expect,” “predict,” “could,” “potentially” or the negative of these terms or other similar terms or expressions that concern our expectations, strategy, plans or intentions. Forward-looking statements appear in a number of places throughout this prospectus and include statements regarding our intentions, beliefs, projections, outlook, analyses or current expectations concerning, among other things, our ongoing and planned preclinical development and clinical trials, the timing of and our ability to make regulatory filings and obtain and maintain regulatory approvals for roxadustat, FG-3019 and our other product candidates, our intellectual property position, the potential safety, efficacy, reimbursement, convenience clinical and pharmaco-economic benefits of our product candidates, the potential markets for any of our product candidates, our ability to develop commercial functions, our ability to operate in China, expectations regarding clinical trial data, our results of operations, cash needs, spending of the proceeds from this offering and the concurrent private placement, financial condition, liquidity, prospects, growth and strategies, the industry in which we operate and the trends that may affect the industry or us. We have based these forward-looking statements largely on our current expectations and projections about future events and financial trends that we believe may affect our financial condition, results of operations, business strategy and financial needs. These forward-looking statements are subject to a number of risks, uncertainties and assumptions described in the section of this prospectus captioned “Risk Factors” and elsewhere in this prospectus, regarding, among other things:

- We have incurred significant losses since our inception and anticipate that we will continue to incur losses for the foreseeable future; we may require additional financings in order to fund our operations;
- All of our recent revenue has been received from our roxadustat collaboration partners; if any of the agreements with these collaboration partners were to terminate, we would require substantial additional funding;
- If we are unable to achieve development and regulatory milestones under our collaboration agreements, our revenues may decrease and our activities may fail to lead to commercialized products;
- We are substantially dependent on the success of our lead product candidate, roxadustat, and our second compound in development, FG-3019, and their clinical and commercial success will depend on a number of factors, many of which are beyond our control;
- We may be unable to obtain regulatory approval for our product candidates, or such approval may be delayed or limited, due to a number of factors, many of which are beyond our control;
- Our Phase 2 results to date for roxadustat and FG-3019 may not be indicative of the results that may be obtained in larger clinical studies required for approval;
- We do not know whether our ongoing or planned Phase 3 clinical studies in roxadustat or Phase 2 clinical studies in FG-3019 will need to be redesigned based on interim results, be able to achieve sufficient enrollment or be completed on schedule, if at all;
- Our product candidates may cause, or have attributed to them, undesirable side effects or have other properties that delay or prevent their regulatory approval or limit their commercial potential;
- If we or third party manufacturers on which we rely cannot manufacture our product candidates and/or products at sufficient yields, we may experience delays in development, regulatory approval and commercialization;

- If our collaborations with Astellas or AstraZeneca were terminated, or if Astellas of AstraZeneca were to prioritize other initiatives over their collaborations with us, whether as a result of a change of control or otherwise, our ability to successfully develop and commercialize our lead product candidate, roxadustat, would suffer;
- We currently rely, and expect to continue to rely, on third parties to conduct many aspects of our clinical studies, and these third parties may not perform satisfactorily;
- Certain of the components of our product candidates are acquired from single-source suppliers and have been purchased without long-term supply agreements;
- If our efforts to protect our proprietary technologies are not adequate, we may not be able to compete effectively in our market;
- Intellectual property disputes with third parties and competitors may be costly and time consuming, and may negatively affect our competitive position;
- We are establishing international operations and seeking approval to commercialize our product candidates outside of the United States, in particular in China, and a number of risks associated with international operations could materially and adversely affect our business;
- We are building our own manufacturing facility in China to produce roxadustat and clinical trial material for our corneal program; as an organization, we have limited experience in the construction or operation and licensure of a manufacturing plant; accordingly, we cannot assure you we will be able to meet regulatory requirements to operate our plant and to sell our products;
- Our decision to seek approval in China for roxadustat as a domestic new drug may not be accepted, which would result in additional delay and expense; and
- The market price of our common stock may be highly volatile, and you may not be able to resell your shares at or above the initial public offering price.

These risks are not exhaustive. Other sections of this prospectus may include additional factors that could adversely impact our business and financial performance. Moreover, we operate in a very competitive and rapidly changing environment. New risk factors emerge from time to time, and it is not possible for our management to predict all risk factors nor can we assess the impact of all factors on our business or the extent to which any factor, or combination of factors, may cause actual results to differ materially from those contained in, or implied by, any forward-looking statements.

You should not rely upon forward-looking statements as predictions of future events. We cannot assure you that the events and circumstances reflected in the forward-looking statements will be achieved or occur. Although we believe that the expectations reflected in the forward-looking statements are reasonable, we cannot guarantee future results, levels of activity, performance or achievements. The forward-looking statements made in this prospectus are based on circumstances as of the date on which the statements are made. Except as required by law, we undertake no obligation to update publicly any forward-looking statements for any reason after the date of this prospectus or to conform these statements to actual results or to changes in our expectations.

You should read this prospectus and the documents that we reference in this prospectus and have filed as exhibits to the registration statement of which this prospectus is a part with the understanding that our actual future results, levels of activity, performance and achievements may be materially different from what we expect. We qualify all of our forward-looking statements by these cautionary statements. You should also read carefully the factors described in the section of this prospectus captioned “Risk Factors” and elsewhere to better understand the risks and uncertainties inherent in our business and underlying and forward-looking statements.

This prospectus also contains market data, research, industry forecasts and other similar information obtained from or based on industry reports and publications, including information concerning our industry, our business, and the potential markets for our product candidates, including data regarding the estimated size and patient populations of those and related markets, their projected growth rates and the incidence of certain medical conditions, as well as physician and patient practices within the related markets. Such data and information involve a number of assumptions and limitations, and you are cautioned not to give undue weight to such estimates.

USE OF PROCEEDS

We estimate that the net proceeds to us from this offering, excluding the proceeds from the concurrent private placement, will be approximately $111.8 million, assuming an initial public offering price of $17.50 per share, which is the midpoint of the range set forth on the cover page of this prospectus, after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us. Our proceeds from the sale of the common stock sold in the concurrent private placement will be $20 million.

A $1.00 increase (decrease) in the assumed initial public offering price of $17.50 per share would increase (decrease) the net proceeds to us from this offering by $6.6 million, assuming the number of shares offered by us, as set forth on the cover page of this prospectus, remains the same and after deducting the estimated underwriting discounts and commissions and estimated expenses payable by us. Each increase or decrease of shares by 1,420,000 shares in the number of shares offered by us would increase or decrease the net proceeds to us from this offering by approximately $23.1 million, assuming that the assumed initial price to public remains the same, and after deducting the estimated underwriting discounts and commissions and estimated offering expenses payable by us. We do not expect that a change in the initial price to the public or the number of shares by these amounts would have a material effect on uses of the proceeds from this offering and the concurrent private placement, although it may accelerate the time at which we will need to seek additional capital.

The principal purposes of this offering are to create a public market for our common stock and thereby facilitate access to the public equity markets, increase our visibility in the marketplace and obtain additional capital. We believe our existing cash and cash equivalents, short-term and long-term investments and payments due under our license and collaboration agreements will be sufficient to meet our anticipated working capital and capital expenditure needs for at least the next 12 months. Additionally, if roxadustat is successful in further clinical development, based on our current development plans, expected payments under our existing license and collaboration agreements may be sufficient to fund our development of roxadustat through commercialization. We intend to use a portion of the net proceeds from this offering and the concurrent private placement to commercialize our unpartnered product candidates such as FG-3019, corneal implants and other HIF-PH inhibitors, as well as for general corporate purposes. These uses include meeting any short term liquidity needs pending receipt of amounts due or subject to reimbursement under our license and collaboration agreements. If the development cost of roxadustat were to exceed our expectations and not be funded by our collaboration partners, or collaboration receipts were less than we anticipate, or if a portion of our existing cash and cash equivalents are used to develop other product candidates, we may use a more substantial portion of the net proceeds from this offering and the concurrent private placement to fund our roxadustat development costs through commercialization. We may also use a portion of the net proceeds to acquire complementary businesses, products or technologies, although we have no present commitments or agreements for any specific acquisitions. Accordingly, we will have broad discretion over the uses of the net proceeds from this offering and the concurrent private placement. Pending these uses, we plan to invest these net proceeds in short-term and long-term interest bearing obligations, investment grade instruments, certificates of deposit or direct or guaranteed obligations of the United States.

We will have broad discretion in the application of the net proceeds, and investors will be relying on the judgment of our management regarding the application of the net proceeds of this offering and the concurrent private placement.

DIVIDEND POLICY

We have never declared or paid dividends on our capital stock. We currently intend to retain all available funds and any future earnings to support operations and to finance the growth and development of our business. We do not intend to declare or pay cash dividends on our capital stock in the foreseeable future. Any future determination to pay dividends will be made at the discretion of our board of directors subject to applicable laws, and will depend upon, among other factors, our results of operations, financial condition, contractual restrictions and capital requirements. Our future ability to pay cash dividends on our stock may be limited by the terms of any future debt or preferred securities.

CAPITALIZATION

The following table sets forth our cash, cash equivalents and investments and capitalization as of September 30, 2014:

- on an actual basis;
- on a pro forma basis to give effect to the automatic conversion of all outstanding shares of our convertible preferred stock (Senior Preferred Stock and Junior Preferred Stock) into an aggregate of 33,919,954 shares of common stock immediately prior to the completion of this offering; and
- on a pro forma as adjusted basis to give further effect to the sale of 8,242,857 shares of our common stock offered in this offering and the concurrent private placement, based on an assumed initial public offering price of $17.50 per share, which is the midpoint of the estimated offering price range set forth on the cover page of this prospectus, after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us.

You should read this information together with our unaudited interim consolidated financial statements and related notes appearing elsewhere in this prospectus and the information set forth under the heading “Selected Consolidated Financial Data” and “Management’s Discussion and Analysis of Financial Condition and Results of Operations”.

	As of September 30, 2014		
	Actual	Pro Forma (unaudited, in thousands)	Pro Forma, as Adjusted
Cash, cash equivalents and investments (1)	$ 175,715	$ 175,715	$ 309,655(2)
Current and long-term lease financing obligations	96,975	96,975	96,975
Product development obligations	17,094	17,094	17,094
Total obligations	114,069	114,069	114,069
Series E and F redeemable convertible preferred stock (Senior Preferred Stock); par value $0.01 per share, 38,340,182 shares authorized, 38,340,182 shares issued and outstanding at September 30, 2014 (unaudited), and no shares authorized, issued or outstanding pro forma and pro forma as adjusted at September 30, 2014 (unaudited)	168,436	—	—
Stockholders’ equity (deficit):			
Series A, B, C, D, G and royalty acquisition convertible preferred stock (Junior Preferred Stock); par value $0.01 per share, 86,659,818 shares authorized, 46,460,057 shares issued and outstanding at September 30, 2014 (unaudited), and no shares authorized, issued or outstanding pro forma and pro forma as adjusted at September 30, 2014 (unaudited)	136,313	—	—
Common stock; par value of $0.01, 225,000,000 shares authorized, 13,509,041 shares issued and outstanding at September 30, 2014 (unaudited), and 47,428,995 shares issued and outstanding pro forma and 55,671,852 shares issued and outstanding pro forma as adjusted at September 30, 2014	135	474	556
Additional paid-in capital	51,790	356,200	487,864
Accumulated other comprehensive loss	(3,177)	(3,177)	(3,177)
Accumulated deficit	(271,723)	(271,723)	(271,723)
Total stockholders’ equity (deficit)	(86,662)	81,774	213,520
Non-controlling interests	27,875	27,875	27,875
Total equity (deficit)	(58,787)	109,649	241,395
Total capitalization	$ 109,649	$ 109,649	$ 241,395

(1) Includes $0.2 million classified as long-term investments.
(2) Pro forma as adjusted cash, cash equivalents and investments reflects $2.2 million of deferred offering costs that had been paid as of September 30, 2014.

If the underwriters' option to purchase additional shares of our common stock from us were exercised in full, pro forma as adjusted cash and cash equivalents and investments, additional paid-in capital, total stockholders' equity and shares outstanding as of September 30, 2014 would be $327.0 million, $505.2 million, $230.9 million and 56,736,852 shares, respectively.

The actual, pro forma and pro forma as adjusted information set forth in the table above are based on 13,509,041 shares of our common stock outstanding as of September 30, 2014, and excludes the following:

- 12,970,404 shares of common stock issuable upon the exercise of outstanding stock options issued as of September 30, 2014 pursuant to our 1999 and 2005 Stock Plans at a weighted-average exercise price of $5.56 per share;
- 1,600,000 shares of common stock to be reserved for future issuance under our 2014 Employee Stock Purchase Plan, or ESPP, as of the date the registration statement of which this prospectus forms a part is declared effective by the SEC, as well as any automatic increases in the number of shares of common stock reserved for future issuance under the ESPP.
- 7,606,104 shares of common stock to be reserved for future issuance under our 2014 Plan as of the date the registration statement of which this prospectus forms a part is declared effective by the SEC (which shares are as of September 30, 2014 and are currently reserved for future grant under our 2005 Plan and will cease to be reserved under our 2005 Plan immediately prior to the time our 2014 Plan becomes effective) as well as any automatic increases in the number of shares of common stock reserved for future issuance under this the 2014 Plan;
- 173,116 shares of common stock issuable upon exercise of common stock warrants outstanding as of September 30, 2014 at a weighted-average exercise price of $7.58 per share; and
- 958,996 shares of common stock issuable upon the exchange of outstanding preferred stock issued by FibroGen Europe.

DILUTION

Dilution in net tangible book value per share to new investors is the amount by which the offering price paid by the purchasers of the shares of common stock sold in the offering exceeds the pro forma net tangible book value per share of common stock after the offering. Net tangible book value per share is determined at any date by subtracting our total liabilities from the total book value of our tangible assets and dividing the difference by the number of shares of common stock deemed to be outstanding at that date.

The historical net tangible book value of our common stock as of September 30, 2014 was $(61.6) million, or $(4.56) per share. Our pro forma net tangible book value as of September 30, 2014 was $106.8 million, or $2.25 per share, which gives effect to the conversion of all outstanding shares of our preferred stock into an aggregate of 33,919,954 shares of our common stock immediately prior to the completion of this offering. After giving effect to the receipt and our intended use of approximately $131.8 million of estimated net proceeds from our sale of shares of common stock in this offering and the concurrent private placement at an assumed offering price of $17.50 per share, which is the midpoint of the range set forth on the cover page of this prospectus, our pro forma as adjusted net tangible book value as of September 30, 2014 would have been $238.6 million, or $4.29 per share. This represents an immediate increase in net tangible book value of $2.04 per share to existing stockholders and an immediate dilution of $13.21 per share to new investors purchasing shares of common stock in the offering. The following table illustrates this substantial and immediate per share dilution to new investors.

Assumed initial public offering price per share (the midpoint of the range set forth on the cover page of this prospectus)		$17.50
Pro forma net tangible book value per share at September 30, 2014	$2.25	
Pro forma increase per share attributable to new investors	$2.04	
Pro forma as adjusted net tangible book value per share after giving effect to this offering		$ 4.29
Dilution in net tangible book value per share to new investors		$13.21

Each $1.00 increase or decrease in the assumed initial public offering price of $17.50 per share, which is the midpoint of the range set forth on the cover page of this prospectus, would increase (decrease) our pro forma as adjusted net tangible book value by $6.6 million, the pro forma as adjusted net tangible book value per share by $0.12 and the dilution per share to new investors in this offering by $0.88, or $0.86 if the underwriters exercise their option to purchase additional shares in full, assuming the number of shares offered by us, as set forth on the cover page of this prospectus, remains the same and after deducting the estimated underwriting discounts and commissions and estimated expenses payable by us.

Similarly, each increase or decrease of 1,420,000 shares in the number of shares offered by us would increase or decrease, as applicable, our pro forma as adjusted net tangible book value by approximately $23.1 million, the pro forma as adjusted net tangible book value per share by $0.30 and the dilution per share to new investors by $0.30, or $0.33 if the underwriters exercise their option to purchase additional shares in full, assuming the assumed initial public offering price remains the same and after deducting underwriting discounts and commissions and estimated expenses payable by us.

The following table summarizes, as of September 30, 2014:

- the total number of shares of common and preferred stock purchased from us by our existing stockholders and by new investors purchasing shares in this offering and the concurrent private placement;
- the total consideration attributable to our existing stockholders and by new investors purchasing common stock in this offering and the concurrent private placement, assuming an initial public offering of $17.50 per share, which is the midpoint of the range set forth on the cover page of this prospectus (before deducting the estimated underwriting discounts and commissions and estimated offering expenses payable by us in connection with this offering); and

- the average price per share paid by existing stockholders and by new investors purchasing shares in this offering and the concurrent private placement.

	Shares Purchased		Total Consideration		Average Price Per Share
	Number	Percent	Amount	Percent	
Existing stockholders	47,428,995	85%	$325,778,395	69%	$ 6.87
Concurrent private placement investor	1,142,857	2	20,000,000	4	17.50
New investors	7,100,000	13	124,250,000	27	17.50
Total	55,671,852	100%	$470,028,395	100%	$ 8.44

Each $1.00 increase or decrease in the assumed price of the initial public offering and the concurrent private placement of $17.50 per share would increase or decrease, as applicable, total consideration paid by existing stockholders, total consideration paid by new investors in the initial public offering and the average price per share by $47.4 million, $7.1 million and $0.99, respectively, assuming the number of shares offered by us, as set forth on the cover page of this prospectus, remains the same and without deducting the estimated underwriting discounts and commissions and estimated expenses payable by us.

If the underwriters exercise their option to purchase additional shares in full, the percentage of shares held by the existing stockholders after this offering and the concurrent private placement would be reduced to 84% of the total number of shares of our common stock outstanding after this offering and the concurrent private placement, and the number of shares held by new investors would increase to 8,165,000 shares, or 14%, of the total number of shares of our common stock outstanding after this offering and the concurrent private placement.

The tables and calculations above are based on the number of shares of our common stock outstanding as of September 30, 2014, but do not include, as of September 30, 2014, the following shares:

- 12,970,404 shares of common stock issuable upon the exercise of outstanding stock options issued as of September 30, 2014 pursuant to our 1999 and 2005 Stock Plans at a weighted-average exercise price of $5.56 per share;
- 1,600,000 shares of common stock to be reserved for future issuance under our ESPP, as of the date the registration statement of which this prospectus forms a part is declared effective by the SEC, as well as any automatic increases in the number of shares of common stock reserved for future issuance under the ESPP.
- 7,606,104 shares of common stock to be reserved for future issuance under our 2014 Plan as of the date the registration statement of which this prospectus forms a part is declared effective by the SEC (which shares are as of September 30, 2014 and are currently reserved for future grant under our 2005 Plan and will cease to be reserved under our 2005 Plan immediately prior to the time our 2014 Plan becomes effective) as well as any automatic increases in the number of shares of common stock reserved for future issuance under this the 2014 Plan;
- 173,116 shares of common stock issuable upon exercise of common stock warrants outstanding as of September 30, 2014 at a weighted-average exercise price of $7.58 per share; and
- 958,996 shares of common stock issuable upon the exchange of outstanding preferred stock issued by FibroGen Europe.

SELECTED CONSOLIDATED FINANCIAL DATA

You should read the following selected financial data together with the section of this prospectus entitled "Management's Discussion and Analysis of Financial Condition and Results of Operations" and our financial statements and the related notes included in this prospectus. The statement of operations data for the years ended December 31, 2012 and 2013 and the balance sheet data as of December 31, 2012 and 2013 are derived from our consolidated financial statements included elsewhere in this prospectus. The statement of operations data for the nine months ended September 30, 2013 and 2014 and the balance sheet data as of September 30, 2014 are derived from our unaudited interim consolidated financial statements included elsewhere in this prospectus. We have included, in our opinion, all adjustments, consisting only of normal recurring adjustments that we consider necessary for a fair statement of the financial information set forth in those statements. Our historical results are not necessarily indicative of the results to be expected in the future, and our unaudited interim results are not necessarily indicative of the results to be expected for the full year or any other period.

	Years ended December 31,		Nine Months ended September 30,	
	2012	2013	2013	2014
	(in thousands, except per share data)			
Result of Operations				
Revenue:				
License and milestone revenue	$ 62,845	$ 94,961	$86,035	$106,175
Collaboration services and other revenue	3,088	7,209	3,745	15,321
Total revenue	65,933	102,170	89,780	121,496
Operating expenses:				
Research and development (1)	74,222	85,710	56,276	99,536
General and administrative (1)	18,934	24,409	16,498	24,088
Total operating expenses	93,156	110,119	72,774	123,624
Income (loss) from operations	(27,223)	(7,949)	17,006	(2,128)
Total interest and other, net	(5,448)	(6,994)	(5,176)	(6,816)
Income (loss) before income taxes	(32,671)	(14,943)	11,830	(8,944)
Benefit from income taxes	100	—	—	—
Net income (loss)	$(32,571)	$ (14,943)	$11,830	$ (8,944)
Net income (loss) per share—basic (2)	$ (2.48)	$ (1.13)	$ 0.04	$ (0.67)
Net income (loss) per share—diluted (2)	$ (2.48)	$ (1.13)	$ 0.03	$ (0.67)
Weighted-average number of common shares used in net income (loss) per share—basic (2)	13,128	13,186	13,181	13,355
Weighted-average number of common shares used in net income (loss) per share—diluted (2)	13,128	13,186	19,919	13,355
Pro forma net loss per share—basic (unaudited) (3)		$ (0.32)		$ (0.19)
Pro forma net loss per share—diluted (unaudited) (3)		$ (0.32)		$ (0.19)
Pro forma weighted-average number of common shares used in net loss per share—basic (unaudited) (3)		47,106		47,275
Pro forma weighted-average number of common shares used in net loss per share—diluted (unaudited) (3)		47,106		47,275

(1) Stock-based compensation expense is included in our results of operations as follows (in thousands):

	Years Ended December 31,		Nine Months Ended September 30,	
	2012	2013	2013	2014
Research and development	$2,277	$1,925	$1,446	$5,775
General and administrative	2,284	1,519	1,170	3,959
Total stock-based compensation expense	$4,561	$3,444	$2,616	$9,734

(2) See Note 10 within the notes to our consolidated financial statements appearing elsewhere in this prospectus for a description of the method used to calculate basic and diluted net income (loss) per share of common stock.

(3) Pro forma basic and diluted net loss per share of common stock is calculated by dividing net loss attributable to common stockholders, by the pro forma weighted-average number of common shares outstanding. The pro forma weighted-average number of common shares includes the weighted-average shares of common stock used to compute basic net loss per share plus the assumed conversion of all outstanding convertible preferred stock. The pro forma weighted-average number of common shares do not include the effect of 958,996 shares of preferred stock held by investors in FibroGen Europe that are exchangeable at the option of the holders into FibroGen, Inc. common stock.

	As of December 31,		As of September 30,
	2012	2013	2014
		(in thousands)	
Balance Sheet Data:			
Cash and cash equivalents	$ 38,872	$ 76,332	$ 153,889
Short-term and long-term investments	82,630	61,833	21,826
Working capital	29,125	106,164	146,545
Total assets	265,588	296,952	344,383
Deferred revenue	5,764	36,649	71,486
Lease financing obligations	92,902	96,809	96,975
Product development obligations	17,152	18,257	17,094
Senior Preferred Stock	168,436	168,436	168,436
Junior Preferred Stock	136,313	136,313	136,313
Accumulated deficit	(247,836)	(262,779)	(271,723)
Non-controlling interests	27,700	27,875	27,875
Total deficit	$ (46,252)	$ (60,833)	$ (58,787)

MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

You should read the following discussion and analysis of our financial condition and results of operations together with our consolidated financial statements and related notes and other financial information appearing in this prospectus. Some of the information contained in this discussion and analysis or set forth elsewhere in this prospectus, including information with respect to our plans and strategy for our business, international operations and product candidates, includes forward-looking statements that involve risks and uncertainties. You should review the "Risk Factors" section of this prospectus beginning on page 18 for a discussion of important factors that could cause our actual results to differ materially from the results described in or implied by the forward-looking statements contained in the following discussion and analysis.

Overview

We are a research-based, biopharmaceutical company focused on the discovery, development and commercialization of novel therapeutics to treat serious unmet medical needs. We have capitalized on our extensive experience in fibrosis and hypoxia-inducible factor, or HIF, biology to generate multiple programs targeting various therapeutic areas. Roxadustat, or FG-4592, is an oral small molecule inhibitor of HIF prolyl hydroxylases, or HIF-PHs, in Phase 3 clinical development for the treatment of anemia in chronic kidney disease, or CKD. FG-3019 is our monoclonal antibody in Phase 2 clinical development for the treatment of idiopathic pulmonary fibrosis, or IPF, pancreatic cancer and liver fibrosis. We have taken a global approach with respect to our product candidates, and this includes development and commercialization of product candidates in the People's Republic of China, or China.

Roxadustat, the first HIF-PH inhibitor to enter Phase 3 clinical development, acts by stimulating the body's natural pathway of erythropoiesis, or red blood cell production. Roxadustat represents a new paradigm for the treatment of anemia in CKD patients, and has the potential to offer a safer, more effective, more convenient and more accessible therapy than the current standard of care, injectable erythropoiesis stimulating agents, or ESAs. We, along with our collaboration partners Astellas Pharma Inc., or Astellas, and AstraZeneca AB, or AstraZeneca, have designed a global Phase 3 program to support regulatory approval of roxadustat in both NDD-CKD and DD-CKD patients in multiple geographies.

FG-3019 is our fully-human monoclonal antibody that inhibits the activity of connective tissue growth factor, or CTGF, a critical common element in the progression of fibrosis and associated serious diseases. We are currently conducting an open-label Phase 2 trial in IPF; a randomized, double-blind placebo-controlled Phase 2 trial in IPF; an open-label Phase 2 trial in pancreatic cancer; and a randomized, double-blind, placebo-controlled Phase 2 trial in liver fibrosis. To date, we have retained exclusive worldwide rights for FG-3019.

We are also currently pursuing our corneal implant FG-5200 for treatment of corneal blindness resulting from partial thickness corneal damage in China.

To date, our operations have been primarily funded by net proceeds from the sale of convertible preferred stock of FibroGen, Inc. and sales of preferred stock in our majority-owned subsidiaries as well as equity investments from our collaboration partners and upfront payments, milestone payments and net research and development payments from our collaboration partners.

Since inception and through September 30, 2014, we have incurred a total of $867.2 million in research and development expenses, a majority of which relates to the development of roxadustat, FG-3019 and other HIF-PH inhibitors. We expect to continue to incur significant expenses and operating losses over at least the next several years and we expect our research and development expenses to continue to increase in the future as we advance our product candidates through clinical trials and expand our product candidate portfolio. We will not generate revenue based on product sales unless and until we or one of our partners successfully complete development of and obtain regulatory approval for one or more of our product candidates, which we expect will take a number of

years and is subject to significant uncertainty. In addition, we expect to incur significant expenses relating to seeking regulatory approval for our product candidates. We also anticipate increased expenses related to audit, legal, regulatory and tax-related services associated with operating as a public reporting company. We consider the active management and development of our clinical pipeline to be crucial to our long-term success. The process of conducting the necessary clinical research to obtain regulatory approval is costly and time consuming. Except for $116.5 million, all currently planned development and commercialization costs for roxadustat for the treatment of anemia in CKD in the United States, Europe, Japan and all other markets outside of China are paid by Astellas and AstraZeneca. All development and commercialization costs for roxadustat in China will be shared equally, and AstraZeneca will pay for all of our commercialization costs until profitability and AstraZeneca will recoup such costs out of product sales, if any. Any termination of any of our collaboration agreements would require us to fund the further development and commercialization of roxadustat in the affected territory or pursue another collaboration, which we may be unable to do, either of which could have an adverse effect on our business and operations.

The actual probability of success for each of our product candidates and clinical programs, and our ability to generate product revenue and become profitable, depends upon a variety of factors, including the quality of the product candidate, clinical results, investment in the program, competition, manufacturing capability, commercial viability, and our and our partners' ability to successfully execute our development and commercialization plans. For a description of the numerous risks and uncertainties associated with product development, see "Risk Factors".

Financial Operations Overview

Revenue

Our revenue to date has been generated primarily from our collaboration agreements with Astellas Pharmaceuticals Inc., or Astellas, and AstraZeneca AB, or AstraZeneca. The following tables summarize the sources of our revenue for the years ended December 31, 2012 and 2013, and the nine months ended September 30, 2013 and 2014:

	Year Ended December 31,		Nine Months Ended September 30,	
	2012	2013	2013	2014
	(in thousands)		(unaudited, in thousands)	
Astellas-Related party:				
License	$ 12,845	$ 9,826	$ 6,543	$ 9,966
Milestone	50,000	12,500	12,500	—
Collaboration Services	2,275	3,335	2,520	2,507
Total Astellas	$ 65,120	$ 25,661	$ 21,563	$ 12,473
AstraZeneca:				
License	$ —	$ 72,635	$ 66,992	$ 96,209
Milestone	—	—	—	—
Collaboration Services	—	3,843	1,207	12,769
Total AstraZeneca	$ —	$ 76,478	$ 68,199	$ 108,978
Other	$ 813	$ 31	$ 18	$ 45
Total Revenue	$ 65,933	$ 102,170	$ 89,780	$ 121,496

Under our revenue recognition policy, license revenue includes amounts from upfront, non-refundable license payments and amounts allocated pursuant to the relative selling price method from other consideration received (other than substantive milestone payments) during the periods. This revenue is generally recognized as deliverables are met and services are performed. Milestone revenue includes payments from milestones which are deemed to be substantive in nature and is recognized in its entirety in the period in which the milestone is

achieved. License and milestone revenues represented 95% and 93% of total revenues for the years ended December 31, 2012 and 2013, respectively, and 96% and 87% for the nine months ended September 30, 2013 and 2014, respectively.

Collaboration services include co-development services, manufacturing of clinical supplies, committee services and information sharing. Collaboration services revenues are recognized over the non-contingent performance period, ranging from 36 to 65 months. Other revenues consist of royalty payments received, which are recorded on a monthly basis as they are reported to us, and have been included with collaboration services and other revenue in the Consolidated Statements of Operations, as they have not been material for each of the years ended December 31, 2012 and 2013 and the nine months ended September 30, 2013 and 2014. Collaboration services and other revenues represented 5% and 7% of total revenues for the years ended December 31, 2012 and 2013, respectively, and 4% and 13% for the nine months ended September 30, 2013 and 2014, respectively.

We have not generated any revenues based on the sale of products. In the future, we may generate revenue from product sales and from collaboration agreements in the form of license fees, milestone payments, reimbursements for collaboration services and royalties on product sales. We expect that any revenues we generate will fluctuate from quarter to quarter as a result of the uncertain timing and amount of such payments and sales.

Collaboration Agreements

Our current and future research, development, manufacturing and commercialization efforts with respect to roxadustat and our other product candidates currently in development depend on funds from our collaboration agreements with Astellas and AstraZeneca as described below.

In June 2005, we entered into a collaboration agreement with Astellas for roxadustat for the treatment of anemia in Japan (“Japan Agreement”).

In April 2006, we entered into a collaboration agreement with Astellas for roxadustat for the treatment of anemia in Europe, the Commonwealth of Independent States, the Middle East, and South Africa (“Europe Agreement”).

In July 2013, we entered into a collaboration agreement with AstraZeneca for roxadustat for the treatment of anemia in the U.S. and all territories not previously licensed to Astellas, except China (“US/RoW Agreement”).

In July 2013, through our China subsidiary and related affiliates, we entered into a collaboration agreement with AstraZeneca for roxadustat for the treatment of anemia in China (“China Agreement”).

For more detailed discussions on the accounting for these agreements, see Note 3 to the consolidated financial statements. In addition, see “Business—Collaborations” for a more detailed description of our collaboration agreements.

Total cash consideration received through September 30, 2014 and potential cash consideration, other than development cost reimbursement, transfer price payments, royalties and profit share, pursuant to our existing collaboration agreements are as follows:

	Cash Received Through September 30, 2014	Additional Potential Cash Payments	Total Potential Cash Payments
		(in thousands)	
Astellas-Related party:			
Japan Agreement	$ 52,593	$ 120,000	$ 172,593
Europe Agreement	410,000	335,000	745,000
Total Astellas	$ 462,593	$ 455,000	$ 917,593
AstraZeneca:			
US/RoW Agreement	$ 192,000	$ 1,057,000	$ 1,249,000
China Agreement	28,200	348,500	376,700
Total AstraZeneca	$ 220,200	$ 1,405,500	$ 1,625,700
Total	$ 682,793	$ 1,860,500	$ 2,543,293

These collaboration agreements also provide for reimbursement of certain fully burdened research and development costs as well as direct out of pocket expenses.

Research and Development Expenses

Research and development expenses consist of third party research and development costs and the fully-burdened amount of costs associated with work performed under collaboration agreements. Research and development costs include employee-related expenses for research and development functions, expenses incurred under agreements with clinical research organizations, or CROs, other clinical and preclinical costs and allocated direct and indirect overhead costs, such as facilities costs, information technology costs and other overhead. Research and development costs are expensed as incurred. Costs for certain development activities are recognized based on an evaluation of the progress to completion of specific tasks using information and data provided to us by our vendors and our clinical sites.

The following table summarizes our research and development expenses incurred during the years ended December 31, 2012 and 2013, and for the nine months ended September 30, 2013 and 2014:

Product Candidate	Phase of Development	Year Ended December 31, 2012	Year Ended December 31, 2013	Nine Months Ended September 30, 2013	Nine Months Ended September 30, 2014
		(in thousands)		(in thousands)	
Roxadustat	Phase 3	$36,631	$43,620	$28,999	$27,698
FG-3019	Phase 2	16,607	20,103	12,055	11,316
FG-6874	Phase 1	3,410	1,979	1,486	12,045
FG-5200	Preclinical	2,428	3,154	2,187	2,337
Other research and development expenses		15,146	16,854	11,549	46,140
Total research and development expenses		$74,222	$85,710	$56,276	$99,536

The program-specific expenses summarized in the table above include costs we directly attribute to our product candidates. We allocate research and development salaries, benefits, stock-based compensation and other indirect costs to our product candidates on a program-specific basis, and we include these costs in the program-specific expenses. The largest component of our total operating expenses has historically been our investment in research and development activities, including the clinical development of our product candidates. Since inception and

through September 30, 2014, we have incurred a total of $867.2 million in research and development expenses, a majority of which relates to the development of roxadustat, FG-3019 and other HIF-PH inhibitors. We expect our research and development expenses to continue to increase in the future as we advance our product candidates through clinical trials and expand our product candidate portfolio. The process of conducting the necessary clinical research to obtain regulatory approval is costly and time consuming. We consider the active management and development of our clinical pipeline to be crucial to our long-term success. The actual probability of success for each product candidate and clinical program may be affected by a variety of factors, including the safety and efficacy data of the product candidate, investment in the program, competition, manufacturing capability and commercial viability. Furthermore, we have entered into collaborations with third parties to participate in the development and commercialization of our product candidates, and we may enter into additional collaborations in the future. In situations in which third parties have control over the preclinical development or clinical study process for a product candidate, the estimated completion dates are largely outside of our control. We are unable to forecast with any degree of certainty which of our product candidates, if any, will be subject to collaborations in the future or how such arrangements would affect our development plans or capital requirements. As a result of the uncertainties discussed above, we are unable to determine the duration and completion costs of our research and development projects, or when and to what extent we will generate revenue from the commercialization and sale of any of our product candidates.

The duration, costs and timing of clinical studies and development of our product candidates will depend on a variety of factors. For example, if the FDA, EMA or another regulatory authority were to require us to conduct clinical studies beyond those that we currently anticipate will be required, or if we experience significant delays in enrollment in any of our clinical studies, we could be required to expend significant additional financial resources and the time to the completion of clinical development would be extended.

We intend to identify additional partnerships to further develop product candidates other than roxadustat, which may offset a portion of our research and development expenses through reimbursement from potential partners. Because of the numerous risks and uncertainties associated with drug development, we are unable to predict the timing or amount of expenses incurred or when, or if, we will be able to achieve sustained profitability.

General and Administrative Expenses

General and administrative expenses consist primarily of employee-related expenses for executive, operational, finance, legal, compliance and human resource functions. Other general and administrative expenses include facility-related costs and professional fees, accounting and legal services, other outside services, recruiting fees and expenses associated with obtaining and maintaining patents.

For the years ended December 31, 2012 and 2013, and for the nine months ended September 30, 2013 and 2014, we incurred $18.9 million, $24.4 million, $16.5 million and $24.1 million, respectively, in general and administrative expenses.

We anticipate that our general and administrative expenses will increase in the future as we increase our headcount to support our continued research and development and potential commercialization of our product candidates. We also anticipate increased expenses, including exchange listing and Securities and Exchange Commission requirements, director and officer insurance premiums, legal, audit and tax fees, regulatory compliance programs and investor relations costs associated with being a public company. Additionally, if and when we believe the first regulatory approval of one of our product candidates appears likely, we anticipate an increase in payroll and related expenses as a result of our preparation for commercial operations, especially as it relates to the sales and marketing of our product candidates.

Interest and Other, Net

Interest Expense

In connection with our long-term lease for our corporate headquarters in San Francisco, California, which was entered into in September 2006, and the lease for our pilot plant located in Beijing Yizhuang Biomedical Park, or BYBP, which was entered into in February 2013, we recognized an asset for costs of constructing the building shells of $50.8 million and $3.1 million, respectively for these facilities and recorded a corresponding lease financing obligation. In addition, we recorded $32.5 million in reimbursements for tenant improvements in the San Francisco location and $0.5 million in rent reimbursements for BYBP.

As the monthly lease payments are made, we record interest expense and an increase or reduction in the corresponding lease financing obligation for any amounts allocated to or deficiencies being applied to the principal value of these obligations.

Interest expense includes payments made for imputed interest related to the facility lease financing obligations for the San Francisco and China properties (see Note 8 to the consolidated financial statements) and interest related to The Technology Development Center of the Republic of Finland, or TEKES, product development obligations (see Note 6 to the consolidated financial statements).

Interest Income

Interest income represents interest earned on our cash, cash equivalents and investments.

Other Income (Expense)

Other income (expense) relates to foreign currency transaction gains (losses) and remeasurement of certain monetary assets and liabilities in non-functional currency of our subsidiaries using exchange rates in effect at the end of the period into the functional currency as well as realized gains (losses) on sales of investments.

Sublease Income

We sublease approximately 34,400 square feet of space within our corporate headquarters facility to certain subtenants on a short-term basis. These subleases include invoices for base rent and reimbursement of various expenses. Sublease income is included as an offset to our facilities expenses for both general and administrative and research and development expenses. For the years ended December 31, 2012 and 2013, and the nine months ended September 30, 2013 and 2014, we had sublease income of $4.3 million, $4.5 million, $3.4 million and $3.7 million, respectively.

Critical Accounting Policies and Significant Judgments and Estimates

Our management’s discussion and analysis of our financial condition and results of operations are based on our financial statements, which have been prepared in accordance with U.S. generally accepted accounting principles. The preparation of these financial statements requires us to make estimates and judgments that affect the reported amounts of assets, liabilities, and expenses and the disclosure of contingent assets and liabilities in our financial statements. On an ongoing basis, we evaluate our estimates and judgments, including those related to accrued expenses and stock-based compensation. We base our estimates on historical experience, known trends and events, and various other factors that we believe to be reasonable under the circumstances, the results of which form the basis for making judgments about the carrying values of assets and liabilities that are not readily apparent from other sources. Actual results may differ from these estimates under different assumptions or conditions.

While our significant accounting policies are described in more detail in the notes to our financial statements appearing elsewhere in this prospectus, we believe the following accounting policies to be most critical to the judgments and estimates used in the preparation of our financial statements.

Revenue Recognition

Substantially all of our revenues to date have been generated from our collaboration agreements.

Our collaboration agreements include multiple deliverables, and we follow the guidance in Accounting Standards Codification Topic 605-25, "Revenue Recognition—Multiple-Element Arrangements," or ASC Topic 605-25 ("ASC 605-25"). ASC 605-25:

- provides guidance on how revenue arrangements with multiple deliverables should be separated and how the arrangement consideration should be allocated among the separate units of accounting;
- requires an entity to determine the selling price of a separate deliverable using a hierarchy of (i) vendor-specific objective evidence, or VSOE, (ii) third-party evidence, or TPE, or (iii) best estimate of selling price, or BESP; and
- requires the allocation of the arrangement consideration, at the inception of the arrangement, to the separate units of accounting based on relative selling price.

We evaluate all deliverables within an arrangement to determine whether or not they provide value on a stand-alone basis. Based on this evaluation, the deliverables are separated into units of accounting. The arrangement consideration that is fixed or determinable at the inception of the arrangement is allocated to the separate units of accounting based on their relative selling prices. Significant judgment may be required in determining whether a deliverable provides stand-alone value, determining the amount of arrangement consideration that is fixed or determinable, and estimating the stand-alone selling price of each unit of accounting.

To date, we have determined that the selling price for the deliverables within our collaboration agreements should be determined using BESP, as neither VSOE nor TPE is available. The process for determining BESP involves significant judgment on our part and includes consideration of multiple factors, including assumptions related to the market opportunity and the time needed to commercialize a product candidate pursuant to the relevant license, estimated direct expenses and other costs, which include the rates normally charged by contract research and contract manufacturing organizations for development and manufacturing obligations, and rates that would be charged by qualified outsiders for committee services.

For each unit of accounting identified within an arrangement, we determine the period over which the deliverables are provided and the performance obligation is satisfied. Service revenue is recognized using a proportional performance method. Direct labor hours or full time equivalents are used as the measurement of performance. Revenue may be recognized using a straight line method when performance is expected to occur consistently over a period of time.

Payments or reimbursements resulting from our research and development efforts for those arrangements where such efforts are considered as deliverables are recognized as the services are performed and are presented on a gross basis. To the extent payments are required to be made to our collaboration partners pursuant to research and development efforts, those costs are charged to research and development using the guidance pursuant to ASC 605-250, Customer Payments and Incentives, which states that cash consideration given by a vendor to a customer is presumed to be a reduction of the selling prices unless the vendor receives an identifiable benefit in exchange for the consideration that is sufficiently separable from the recipient's purchase of the vendor's products, and the vendor can reasonably estimate the fair value of the benefit.

Each of our collaboration agreements includes milestones for which we follow ASC Topic 605-28, Revenue Recognition—Milestone Method ("ASC 605-28"). ASC 605-28 establishes the milestone method as an acceptable method of revenue recognition for certain contingent event-based payments under research and development arrangements. Under the milestone method, a payment that is contingent upon the achievement of a substantive milestone is recognized in its entirety in the period in which the milestone is achieved. A milestone is an event (i) that can only be achieved based in whole or in part on either our performance or on the occurrence of a specific outcome resulting from our performance, (ii) for which there is substantive uncertainty at the date the

arrangement is entered into that the event will be achieved and (iii) that would result in additional payments being due to us. Determining whether a milestone is substantive is a matter of judgment and that assessment must be made at the inception of the arrangement. Milestones are considered substantive when the consideration earned from the achievement of the milestone (i) is commensurate with either our performance to achieve the milestone or the enhancement of the value of the item delivered as a result of a specific outcome resulting from our performance to achieve the milestone, (ii) relates solely to past performance and (iii) is reasonable relative to all deliverables and payment terms in the arrangement. Payments for achieving milestones which are not considered substantive are treated as additional arrangement consideration and are allocated following the relative selling price method previously described.

Clinical Trial Accruals

Clinical trial costs are a component of research and development expenses. We accrue and expense clinical trial activities performed by third parties based upon actual work completed in accordance with agreements established with clinical research organizations and clinical sites. We determine the actual costs through external service providers as well as confirmation with internal personnel as to the progress or stage of completion of trials or services and the agreed-upon fee to be paid for such services.

Income Taxes

We account for income taxes using an asset and liability approach. Deferred income taxes reflect the net tax effects of temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes and the amounts used for income tax purposes. Operating loss and tax credit carryforwards are measured by applying currently enacted tax laws. Valuation allowances are provided when necessary to reduce net deferred tax assets to an amount that is more likely than not to be realized. As of December 31, 2012 and 2013, we provided a full valuation allowance against our net deferred tax assets.

We recognize the tax effects of an uncertain tax position only if it is more likely than not to be sustained based solely on its technical merits as of the reporting date and only in an amount more likely than not to be sustained upon review by the tax authorities. We consider many factors when evaluating and estimating our tax positions and tax benefits, which may require periodic adjustments and which may not accurately reflect actual outcomes.

As of December 31, 2013, we had net operating loss carryforwards available to offset future taxable income of approximately $115.4 million and $171.7 million for federal and state tax purposes, respectively. These carryforwards will begin to expire in 2024 for federal purposes and in 2014 for state purposes, if not utilized before these dates. We also had foreign net operating loss carryforwards of approximately $17.3 million that expire between 2014 and 2023 if not utilized.

As of December 31, 2013, we had approximately $18.4 million of federal and $13.8 million of state research and development tax credit carryforwards available to offset future taxable income. The federal credits will begin to expire in 2018 and the California research credits have no expiration dates.

Utilization of net operating losses and tax credit carryforwards may be limited by the “ownership change” rules, as defined in Section 382 of the Internal Revenue Code (any such limitation, a “Section 382 limitation”). Similar rules may apply under state tax laws. We have performed an analysis to determine whether an “ownership change” occurred from inception to December 31, 2013. Based on this analysis, management determined that we did experience historical ownership changes of greater than 50% during this period. Therefore, the utilization of a portion of our net operating losses and credit carryforwards is currently limited. However, these Section 382 limitations are not expected to result in a permanent loss of the net operating losses and credit carryforwards. As such, a reduction of our gross deferred tax asset for our net operating loss and tax credit carryforwards is not necessary prior to considering the valuation allowance. In the event we experience any subsequent changes in ownership, the amount of net operating losses and research and development credit carryforwards useable in any taxable year could be limited and may expire unutilized.

Stock-Based Compensation

We measure and recognize compensation expense for all stock options granted to our employees, directors and non-employees based on the estimated fair value of the award on the grant date. We use the Black-Scholes valuation model to estimate the fair value of stock option awards. The fair value is recognized as expense, net of estimated forfeitures, over the requisite service period, which is generally the vesting period of the respective award, on a straight-line basis. We believe that the fair value of stock options granted to non-employees is more reliably measured than the fair value of the services received. As such, the fair value of the unvested portion of the options granted to non-employees is re-measured as of each reporting date. The resulting increase in value, if any, is recognized as expense during the requisite service period on a straight-line basis. The determination of the grant date fair value of options using an option pricing model is affected by our estimated common stock fair value and requires management to make a number of assumptions, including the expected life of the option, the volatility of the underlying stock, the risk-free interest rate and expected dividends.

Historically, for all periods prior to this initial public offering, the fair values of the shares of common stock underlying our stock-based awards were estimated on each grant date by our board of directors. In order to determine the fair value of our common stock underlying option grants, our board of directors considered, among other things, contemporaneous valuations of our common stock prepared by unrelated third-party valuation firms in accordance with the guidance provided by the American Institute of Certified Public Accountants 2004 Practice Aid, *Valuation of Privately-Held-Company Equity Securities Issued as Compensation*, or the Practice Aid. Given the absence of a public trading market of our common stock, our board of directors exercised reasonable judgment and considered a number of objective and subjective factors to determine the best estimate of the fair value of our common stock, including:

- contemporaneous valuations of our common stock performed by unrelated third-party valuation firms as of February 29, 2012, August 31, 2012, February 15, 2013, July 31, 2013, October 31, 2013 and February 28, 2014;
- our stage of development;
- our operational and financial performance;
- the nature of our services and our competitive position in the marketplace;
- the value of companies that we consider peers based on a number of factors, including similarity to us with respect to industry and business model;
- the likelihood of achieving a liquidity event, such as an initial public offering or sale given prevailing market conditions, and the nature and history of our business;
- issuances of preferred stock and the rights, preferences and privileges of our preferred stock relative to those of our common stock;
- current business conditions and projections;
- the history of our company and our introduction of new solutions; and
- the lack of marketability of our common stock.

Stock-based compensation for options granted in March 2014 and December 2013 (which were not deemed granted for accounting purposes until the third quarter of fiscal year 2014, as such grants were pending stockholder approval for an increase in the share reserve under the 2005 Stock Plan, which approval was received in July 2014) has been calculated based on our conclusion to use the deemed fair value of common stock on the accounting grant date using a discount to the midpoint of the range set forth on the cover of this prospectus.

Common Stock Valuation Methodology

The valuations were performed in accordance with applicable elements of the Practice Aid. The Practice Aid prescribes several valuation approaches for estimating the value of an enterprise, such as the cost, market and income approaches, and various methodologies for allocating the value of an enterprise to its common stock.

The Practice Aid identifies various available methods for allocating enterprise value across classes and series of capital stock to determine the estimated fair value of common stock at each valuation date. In accordance with the Practice Aid, our board determined that the Probability-Weighted Expected Return Method (or PWERM) was the most appropriate method for determining the fair value of our common stock for the above noted valuation dates based on our stage of development and other relevant factors. The PWERM is a scenario-based analysis that estimates value per share based on the probability-weighted present value of expected future investment returns, considering each of the possible outcomes available to us, as well as the economic and control rights of each share class.

For valuations after the completion of this initial public offering, our board of directors will determine the fair value of each share of underlying common stock based on the closing price of our common stock as reported on the NASDAQ Global Select Market on the date of grant.

Results of Operations

	Years ended December 31,		Nine Months ended September 30,	
	2012	2013	2013	2014
			(unaudited)	
	(in thousands)			
Revenue:				
License and milestone revenue	$ 62,845	$ 94,961	$86,035	$106,175
Collaboration services and other revenue	3,088	7,209	3,745	15,321
Total revenue	65,933	102,170	89,780	121,496
Operating expenses:				
Research and development	74,222	85,710	56,276	99,536
General and administrative	18,934	24,409	16,498	24,088
Total operating expenses	93,156	110,119	72,774	123,624
Income (loss) from operations	(27,223)	(7,949)	17,006	(2,128)
Total interest and other, net	(5,448)	(6,994)	(5,176)	(6,816)
Income (loss) before income taxes	(32,671)	(14,943)	11,830	(8,944)
Benefit from income taxes	100	—	—	—
Net income (loss)	$(32,571)	$ (14,943)	$11,830	$ (8,944)

Comparison of the nine months ended September 30, 2013 and 2014 (unaudited)

Revenue

	Nine Months Ended September 30,					
	2013	% of Revenue	2014	% of Revenue	Change	% Change
	(dollars in thousands)					
Revenue:						
License and milestone revenue	$86,035	96%	$106,175	87%	$20,140	23%
Collaboration services and other revenue	3,745	4%	15,321	13%	11,576	309%
Total revenue	$89,780	100%	$121,496	100%	$31,716	35%

Total revenue increased by $31.7 million, or 35%, for the nine months ended September 30, 2014 compared to the nine months ended September 30, 2013 for the reasons as more fully discussed in the sections below.

License and Milestone Revenue

	Nine Months Ended September 30,					
	2013	% of License and Milestone Revenue	2014	% of License and Milestone Revenue	Change	% Change
	(dollars in thousands)					
License and milestone revenue:						
Astellas—Related party	$19,043	22%	$ 9,966	9%	$ (9,077)	(48)%
AstraZeneca	66,992	78%	96,209	91%	29,217	44%
Total license and milestone revenue	$86,035	100%	$106,175	100%	$20,140	23%

License and milestone revenue increased by $ 20.1 million for the nine months ended September 30, 2014 compared to the nine months ended September 30, 2013. This increase was primarily driven by license revenue recognized in connection with our collaboration agreements signed in July 2013 with AstraZeneca, partially offset by the decrease in milestone revenue recognized in connection with our collaboration agreement with Astellas during the nine months ended September 30, 2013. The amount of license revenue recognized for the nine months ended September 30, 2014 and September 30, 2013 was comprised principally of the receipt of a $110 million time-based payment in June 2014 and up-front payments of $ 98.2 million in July 2013, respectively, and the application of the relative selling price method to each of the deliverables underlying the AstraZeneca agreement. As a result of applying the relative selling price method and assessing the timing of the provision of various deliverables (as more fully discussed in the notes to the consolidated financial statements), at September 30, 2014 and September 30, 2013, approximately $ 17.4 million and $ 19.2 million, respectively (which relate to the co-development, information sharing and committee services unit of accounting), and $14.9 million and $ 13.3 million, respectively (which relate to the China unit of accounting), of these payments were deferred. The application of the relative selling price method to the reimbursements for co-development payments from both Astellas and AstraZeneca contributed to $16.8 million of the $20.1 million increase in license and milestone revenue for the nine months ended September 30, 2014 compared to the nine months ended September 30, 2013. The amounts related to the co-development, information sharing and committee services unit of accounting will be recognized as revenue as these services are performed through the remainder of the non-contingent development period (which was estimated as 65 months from the date the AstraZeneca agreement was signed). The amount relating to the China unit of accounting has been deferred until commercialization commences in the China market.

Collaboration Services and Other Revenue

Collaboration services revenue increased $11.6 million for the nine months ended September 30, 2014, compared to the nine months ended September 30, 2013, primarily due to an increase in expenses subject to reimbursement following our entry into our agreements with AstraZeneca.

Operating Expenses

	Nine Months Ended September 30,					
	2013	% of Revenue	2014	% of Revenue	Change	% Change
	(dollars in thousands)					
Operating expenses:						
Research and development	$56,276	63%	$ 99,536	82%	$43,260	77%
General and administrative	16,498	18%	24,088	20%	7,590	46%
Total operating expenses	$72,774	81%	$123,624	102%	50,850	70%

Research and development expenses increased by $43.3 million, or 77% for the nine months ended September 30, 2014 compared to the nine months ended September 30, 2013. The increase was primarily due to an increase in personnel related costs of $10.7 million, of which $7.1 million related to an increase in headcount and related expenses and $4.3 million related to an increase in stock-based compensation expenses associated with new grants. These increases were partially offset by a decrease in expense of $0.7 million under our corporate bonus program. We also experienced an increase in outside services expenses of $18.9 million as we utilized third parties for scientific contract work for increased regulatory submissions for roxadustat and certain other of our product candidates and an increase in drug development expenses of $4.0 million due to increased supply required for roxadustat and FG-3019 trials. In addition, our overall clinical trials expenses increased $8.4 million, as a result of our increased use of CROs as well as costs for data management.

General and administrative expenses increased $7.6 million, or 46%, for the nine months ended September 30, 2014 compared to the nine months ended September 30, 2013. The increase was primarily due to an increase in personnel related costs of $4.4 million, of which $1.9 million related to an increase in headcount and related expenses and $2.8 million related to an increase in stock-based compensation expenses associated with new grants. These increases were partially offset by a decrease in expense of $0.3 million under our corporate bonus program. In addition, professional fees increased $2.6 million due to increase in audit, tax, recruiting and other outside services costs. Furthermore, facilities expense increased $0.6 million due to the costs associated with our newly leased facility in China.

Interest Expense and Other, Net

	Nine Months Ended September 30,			
	2013	2014	Change	% Change
	(dollars in thousands)			
Interest expense and other, net:				
Interest expense	$ 7,999	$ 8,174	$ 175	2%
Interest income	(2,709)	(1,364)	1,345	(50)%
Foreign currency and other (gain) loss	(114)	6	120	(105)%
Total interest expense and other, net	$ 5,176	$ 6,816	$1,640	32%

Interest expense and other, net increased $1.6 million, or 32%, for the nine months ended September 30, 2014, compared to the nine months ended September 30, 2013. Interest expense includes payments made for imputed interest related to the facility lease financing obligations for the San Francisco and the China properties as well as interest related to the TEKES product development obligations. Interest expense increased $0.2 million, primarily due to the newly-leased facility in China.

Interest income consists primarily of interest earned on bonds held. Interest income decreased $1.3 million for the nine months ended September 30, 2014, compared to the nine months ended September 30, 2013, due to a decrease in bond interest related to the maturity and call of bonds. Foreign currency and other decreased $0.1 million for the nine months ended September 30, 2014, compared to the nine months ended September 30, 2013, as a result of nonrecurring realized gains on the sale of investments for the nine months ended September 30, 2013.

Comparison of the years ended December 31, 2012 and 2013

Revenue

	Year Ended December 31,					
	2012	% of Revenue	2013	% of Revenue	Change	% Change
	(dollars in thousands)					
Revenue:						
License and milestone revenue	$62,845	95%	$ 94,961	93%	$32,116	51%
Collaboration services and other revenue	3,088	5%	7,209	7%	4,121	133%
Total revenue	$65,933	100%	$102,170	100%	$36,237	55%

Total revenue increased by $36.2 million, or 55% for the year ended December 31, 2013 compared to the year ended December 31, 2012 for the reasons as more fully discussed in the sections below.

License and Milestone Revenue

	Year Ended December 31,					
	2012	% of License and Milestone Revenue	2013	% of License and Milestone Revenue	Change	% Change
	(dollars in thousands)					
License and milestone revenue:						
Astellas—Related party	$62,845	100%	$22,326	24%	$(40,519)	(64)%
AstraZeneca	—	—	72,635	76%	72,635	NM
Total license and milestone revenue	$62,845	100%	$94,961	100%	$ 32,116	51%

NM - Not Meaningful

License and milestone revenue increased by $32.1 million, or 51% for the year ended December 31, 2013 compared to the year ended December 31, 2012. This increase was primarily driven by license and milestone revenue recognized in connection with our collaboration agreements signed in July 2013 with AstraZeneca. Under our collaboration agreements with Astellas, we recognized revenue related to two substantive milestones in 2012 and 2013 of $50.0 million and $12.5 million, respectively.

Collaboration Services and Other Revenue

Collaboration services and other revenue increased $4.1 million, or 133% for the year ended December 31, 2013 compared to the year ended December 31, 2012, primarily due to an increase in expenses subject to reimbursement of $3.8 million following our entry into our agreements with AstraZeneca.

Operating Expenses

	Year Ended December 31,					
	2012	% of Revenue	2013	% of Revenue	Change	% Change
	(dollars in thousands)					
Operating expenses:						
Research and development	$74,222	113%	$ 85,710	84%	$11,488	15%
General and administrative	18,934	29%	24,409	24%	5,475	29%
Total operating expenses	$93,156	142%	$110,119	108%	16,963	18%

Research and development expenses increased by $11.5 million, or 15% for the year ended December 31, 2013 compared to the year ended December 31, 2012. The increase was primarily due to an increase in personnel related costs of $8.6 million, of which $3.2 million related to an increase in headcount and related expenses and $5.4 million related to increased expenses under our corporate bonus program, primarily due to the agreements signed with AstraZeneca in July 2013. We also experienced an increase in outside services expenses of $3.2 million as we utilized third parties to support increased regulatory efforts for roxadustat, and certain other of our product candidates and an increase in drug development expenses of $1.9 million due to increased supply required for roxadustat and FG-3019 trials. These increases were partially offset by a decrease in overall clinical trials expenses of $2.1 million, primarily related to the decrease in clinical investigator site costs and decreased activity for CROs.

General and administrative expenses increased $5.5 million, or 29% for the year ended December 31, 2013 compared to the year ended December 31, 2012. The increase was primarily due to an increase in personnel expenses of $3.9 million, of which $0.8 million related to an increase in headcount and related expenses and $3.1 million related to increased expenses under our corporate bonus program, primarily due to the agreements signed with AstraZeneca in July 2013. In addition, professional fees increased $1.6 million due to increased legal and outside services costs related to the execution of the AstraZeneca agreements as well as other general corporate legal expenses. Furthermore, facilities expense increased $0.2 million due to the costs associated with the newly leased facility in China.

Interest Expense and Other, Net

	Year Ended December 31,			
	2012	2013	Change	% Change
	(dollars in thousands)			
Interest expense and other, net:				
Interest expense	$10,026	$10,702	$ 676	7%
Interest income	(4,397)	(3,552)	845	(19)%
Foreign currency and other	(181)	(156)	25	(14)%
Total interest expense and other, net	$ 5,448	$ 6,994	$1,546	28%

Interest expense and other, net increased $1.5 million, or 28%, for the year ended December 31, 2013, compared to the year ended December 31, 2012. Interest expense includes payments made for imputed interest related to the facility lease financing obligations for the headquarters and China facilities as well as interest related to the TEKES product development obligations, which increased $0.7 million, primarily due to the newly-leased facility in China.

Interest income consists primarily of interest earned on bonds held. Interest income decreased $0.8 million, or 19%, for the year ended December 31, 2013, compared to the year ended December 31, 2012, due to a decrease in bond interest related to the maturity and call of bonds.

Liquidity and Capital Resources

We have historically funded our operations principally from the sale of convertible preferred stock and from the execution of certain collaboration agreements involving license payments, milestones and reimbursement for development services. To date, we have raised net proceeds of $302.7 million through the sale of FibroGen, Inc. convertible preferred stock and $27.9 million in sales of convertible preferred stock in our majority-owned subsidiaries. We have also received approximately $13.0 million of loans from TEKES. As of September 30, 2014, we had cash and cash equivalents of approximately $153.9 million. Cash is invested in accordance with our investment policy, primarily with a view to liquidity and capital preservation. Investments, consisting principally of corporate and government debt securities and stated at fair value, are also available as a source of liquidity. As of September 30, 2014, we had short-term and long-term investments of approximately $21.6 million and $0.2 million, respectively.

Cash Flows

The following table sets forth the primary sources and uses of cash for each of the periods set forth below:

	Years ended December 31,		Nine Months ended September 30,	
	2012	2013	2013	2014
			(unaudited)	
	(in thousands)			
Net cash provided by (used in):				
Operating activities	$ (5,605)	$25,918	$48,566	$46,179
Investing activities	19,152	10,778	5,362	33,004
Financing activities	6,807	680	292	(1,571)
Effect of exchange rate changes on cash	(66)	84	39	(55)
Net change in cash and cash equivalents	$20,288	$37,460	$54,259	$77,557

Operating Activities

Net cash provided by operating activities was $46.2 million for the nine months ended September 30, 2014, and consisted primarily of net loss of $8.9 million adjusted for non-cash items including stock-based compensation expense of $9.7 million, depreciation expense of $3.3 million, amortization of bond premium/discount of $0.4 million and a net increase in operating assets and liabilities of $41.6 million. The significant items in the change in operating assets and liabilities include an increase in deferred revenue of $34.8 million and an increase in accounts payable and accrued expenses of $11.0 million. The increase in deferred revenue relates to the timing of upfront payments and recognition of revenues under our collaboration agreements with Astellas and AstraZeneca. The increase in accrued expenses is driven by the increase in clinical trial activity related to upcoming Phase 3 trials for roxadustat.

Net cash provided by operating activities was $48.6 million for the nine months ended September 30, 2013, and consisted primarily of net income of $11.8 million adjusted for non-cash items including stock-based compensation expense of $2.6 million, depreciation expense of $3.9 million, investment gain of $0.2 million, amortization of bond premium/discount of $0.6 million and a net decrease in operating assets and liabilities of $29.8 million. The change in operating assets and liabilities was primarily driven by a decrease of $31.2 million in deferred revenue and a decrease in accounts payable and accrued expenses of $0.8 million that was driven by a decrease in accrued clinical trial related expenses. This decrease was partially offset by changes in accounts receivable and deferred revenues related to our collaboration agreements.

Net cash provided by operating activities was $25.9 million for the year ended December 31, 2013, and consisted primarily of a net loss of $14.9 million adjusted for non-cash items including stock-based compensation expense of $3.4 million, depreciation expense of $5.1 million, investment gains of $0.3 million, amortization of bond premium/discount of $0.8 million and a net increase in operating assets and liabilities of $31.8 million. The change in operating assets and liabilities include increases in accounts payable and accrued expenses of $9.3 million, an increase in deferred revenue of $30.9 million, a decrease in prepaid expenses and other current assets of $0.8 million, offset by increases of $0.5 million in other assets and $8.7 million in accounts receivable. The increase in accounts payable and accrued expenses was primarily due to increased accrued payroll expenses and accrued clinical trial related expenses. The increase in accounts receivable and deferred revenue relate to the timing of milestone payments and recognition of revenues under our collaboration agreements with Astellas and AstraZeneca.

Net cash used in operating activities was $5.6 million for the year ended December 31, 2012, and consisted primarily of a net loss of $32.6 million adjusted for non-cash items including stock-based compensation expense of $4.6 million, depreciation expense of $5.6 million, investment gains of $0.4 million, amortization of bond premium or discount of $0.9 million and a net decrease in operating assets and liabilities of $16.3 million. The change in operating assets and liabilities include an increase in accounts payable and accrued expenses of

$2.2 million and a decrease of $14.1 million in accounts receivable, offset by increases of $0.5 million in prepaid expenses and other current assets and $0.4 million in other assets. The increase in accounts receivable relate to the timing of milestone payments under our collaboration agreements with Astellas.

Investing Activities

Net cash provided by investing activities consisted of purchases of fixed assets, purchases of investments, and proceeds from the maturity and sale of investments.

Net cash provided by investing activities for the nine months ended September 30, 2014 was $33.0 million and consisted of proceeds from maturities of investments of $38.5 million offset by $5.5 million in purchases of fixed assets. Net cash provided by investing activities for the nine months ended September 30, 2013 was $5.4 million and consisted of $7.6 million in proceeds from sales and maturities of investments, offset by $2.3 million in purchases of fixed assets.

Net cash provided by investing activities for the year ended December 31, 2013 was $10.8 million and consisted primarily of proceeds from sales and maturities of investments of $17.6 million offset by $6.8 million purchases of fixed assets. Net cash provided by investing activities for the year ended December 31, 2012 was $19.2 million and consisted primarily of $22.1 million in proceeds from sales and maturities of investments, offset by $2.2 million in purchases of investments and $0.7 million in purchases of fixed assets.

Financing Activities

Net cash used in financing activities for the nine months ended September 30, 2014 was $1.6 million and consisted of $2.2 million in payments in equity issuance costs (costs paid associated with the planned public offering of our securities) and $0.3 million of repayments on our lease liability, partially offset by $0.9 million in proceeds from issuance of common stock upon exercise of stock options. Net cash provided by financing activities for the nine months ended September 30, 2013 was $0.3 million and consisted of $0.6 million in proceeds from a convertible promissory note and $0.2 million in proceeds from non-controlling interests, partially offset by $0.2 million of repayments of capital lease obligations and $0.3 million for repayments of our lease liability.

Net cash provided by financing activities for the year ended December 31, 2013 was $0.7 million and consisted of $0.6 million from our lease financing liability rent subsidy, $0.6 million in proceeds from a convertible promissory note and $0.2 million in proceeds from non-controlling interests. These amounts were partially offset by $0.3 million of repayments on equipment loans and $0.4 million on our option lease liability. Net cash provided by financing activities for the year ended December 31, 2012 was $6.8 million and consisted of $6.6 million proceeds from non-controlling interests, $0.8 million proceeds from notes receivable, and $0.2 million from issuance of common stock, offset by $0.3 million of repayments on equipment loans, and $0.4 million on our lease option liability.

During the years ended December 31, 2012 and 2013, we also drew down and fully repaid amounts on our credit facility of $17.3 million and $11.5 million, respectively.

Operating Capital Requirements

To date, we have not generated any revenue from product sales. We do not know when, or if, we will generate any revenue from product sales. We do not expect to generate significant revenue from product sales unless and until we obtain regulatory approval of and commercialize one or more of our current or future product candidates. We anticipate that we will continue to generate losses for the foreseeable future, and we expect the losses to increase as we continue the development of, and seek regulatory approvals for, our product candidates, and begin to commercialize any approved products. We are subject to all the risks related to the development and

commercialization of novel therapeutics, and we may encounter unforeseen expenses, difficulties, complications, delays and other unknown factors that may adversely affect our business. Upon the closing of this offering, we expect to incur additional costs associated with operating as a public company. We anticipate that we will need substantial additional funding in connection with our continuing operations.

We believe our existing cash and cash equivalents, short-term and long-term investments and payments due under our license and collaboration agreements will be sufficient to meet our working capital and capital expenditure needs for at least the next 12 months. Our longer term liquidity requirements may require us to raise additional capital, such as through additional equity or debt financings. Our future capital requirements will depend on many factors, including our ability to meet milestones under our current collaboration agreements, and the timing of our expenditures related to clinical trials.

In addition, we may require additional capital sooner for the further development of our existing product candidates and may also need to raise additional funds sooner to pursue other development activities related to additional product candidates.

Until we can generate a sufficient amount of revenue from our product candidates, if ever, we expect to finance future cash needs through public or private equity or debt offerings. Additional capital may not be available on reasonable terms, if at all. If we are unable to raise additional capital in sufficient amounts or on terms acceptable to us, we may have to significantly delay, scale back or discontinue the development or commercialization of one or more of our product candidates. If we raise additional funds through the issuance of additional equity or debt securities, it could result in dilution to our existing stockholders or increased fixed payment obligations, and any such securities may have rights senior to those of our common stock. If we incur indebtedness, we could become subject to covenants that would restrict our operations and potentially impair our competitiveness, such as limitations on our ability to incur additional debt, limitations on our ability to acquire, sell or license intellectual property rights and other operating restrictions that could adversely impact our ability to conduct our business. Any of these events could significantly harm our business, financial condition and prospects.

Our forecast of the period of time through which our financial resources will be adequate to support our operations is a forward-looking statement and involves risks and uncertainties, and actual results could vary as a result of a number of factors. We have based this estimate on assumptions that may prove to be wrong, and we could utilize our available capital resources sooner than we currently expect. Our future funding requirements, both near- and long-term, will depend on many factors, including, but not limited to:

- the rate of progress in the development of our product candidates;
- the costs of development efforts for our product candidates, such as FG-3019, that are not subject to reimbursement from our collaboration partners;
- the costs necessary to obtain regulatory approvals, if any, for our product candidates in the United States, China and other jurisdictions, and the costs of post-marketing studies that could be required by regulatory authorities in jurisdictions where approval is obtained;
- the continuation of our existing collaborations and entry into new collaborations;
- the time and unreimbursed costs necessary to commercialize products in territories in which our product candidates are approved for sale;
- the revenues from any future sales of our products for which we are entitled to a profit share, royalties and milestones;
- the level of reimbursement or third party payor pricing available to our products;
- the costs of establishing and maintaining manufacturing operations and obtaining third party commercial supplies of our products, if any, manufactured in accordance with regulatory requirements;
- the costs we incur in maintaining domestic and foreign operations, including operations in China;

- the costs associated with being a public company; and
- the costs we incur in the filing, prosecution, maintenance and defense of our extensive patent portfolio and other intellectual property rights.

If we cannot expand our operations or otherwise capitalize on our business opportunities because we lack sufficient capital, our business, financial condition and results of operations could be materially adversely affected.

To date, we have funded certain portions of our research and development and manufacturing efforts in China and Europe through outside parties. There is no guarantee that sufficient funds will be available to continue to fund these development efforts through commercialization or otherwise.

Contractual Obligations and Commitments

Cease-Use Liability

In April 2009, in conjunction with the move of our headquarters to a new facility, we exited from one of the two buildings we formerly occupied. This facility closure was accounted for in accordance with accounting guidance related to costs associated with exit or disposal activities. Based upon this guidance, we recorded a cease-use liability equal to the net present value of the future minimum lease payments, net of expected future sublease payments, through the end of the remaining lease term. Any adjustments to the cease-use liability, due to factors such as expected future sublease payments, will be recorded in general and administrative expenses in the period those adjustments occur. A rollforward of the cease-use liability is shown below:

	Years Ended December 31,		Nine Months Ended September 30, 2014
	2012	2013	(unaudited)
	(in thousands)		
Beginning liability balance	$ 2,868	$ 1,861	$ 894
Payments made	(885)	(967)	(539)
Adjustments to estimates	(122)	—	—
Ending liability balance	$ 1,861	$ 894	$ 355

Contractual Obligations

At December 31, 2013, our contractual obligations were as follows:

	Payments due by period				
	Less than 1 year	1 to 3 years	3 to 5 years	More than 5 years	Total
	(in thousands)				
Contractual obligations:					
Operating lease obligations	$ 3,917	$ 555	$ —	$ —	$ 4,472
Lease financing obligations	13,286	41,356	43,562	41,382	139,586
Total contractual obligations	$17,203	$41,911	$43,562	$ 41,382	$144,058

The contractual obligations table excludes uncertain tax benefits of approximately $13.5 million that are disclosed in Note 12 in the notes to our consolidated financial statements because these uncertain tax positions, if recognized, would be an adjustment to the deferred tax assets.

Clinical Trials

As of December 31, 2013, we have several on-going clinical studies in various stages. Under agreements with various clinical research organizations, or CROs, and clinical study sites, we incur expenses related to clinical

studies of our product candidates and potential other clinical candidates. The timing and amounts of these disbursements are contingent upon the achievement of certain milestones, patient enrollment and services rendered or as expenses are incurred by the CROs or clinical trial sites. Therefore we cannot estimate the potential timing and amount of these payments and they have been excluded from the table above. Although our material contracts with CROs are cancellable, we have historically not cancelled such contracts.

Product Development Obligations

As of December 31, 2013, our FibroGen Europe subsidiary had $13.0 million of principal outstanding and $5.3 million of interest accrued related to the TEKES loans, respectively, which have been included as product development obligations in our consolidated balance sheet.

There is no stated maturity date related to these loans and each loan may be forgiven if the research work funded by TEKES does not result in an economically profitable business or does not meet its technological objectives. In addition, we are not a guarantor of the TEKES loans, and these loans are not repayable by FibroGen Europe until it has distributable funds. We do not expect FibroGen Europe to have such funds for at least the next five years. For the foregoing reasons, we cannot estimate the potential timing and the amounts of repayments (if required) or forgiveness. As a result, the TEKES loans have been excluded from the table above.

Off-Balance Sheet Arrangements

During the year ended December 31, 2013, we did not have any relationships with unconsolidated organizations or financial partnerships, such as structured finance or special purpose entities that would have been established for the purpose of facilitating off-balance sheet arrangements.

JOBS Act Accounting Election

We are an “emerging growth company,” as defined in the Jumpstart Our Business Startups Act of 2012, or the JOBS Act. Under the JOBS Act, emerging growth companies can delay adopting new or revised accounting standards issued subsequent to the enactment of the JOBS Act until such time as those standards apply to private companies. We have irrevocably elected not to avail ourselves of this exemption from new or revised accounting standards, and, therefore, will be subject to the same new or revised accounting standards as other public companies that are not emerging growth companies.

Quantitative and Qualitative Disclosures About Market Risks

We are exposed to market risk in the ordinary course of our business. Market risk represents the risk of loss that may impact our financial position due to adverse changes in financial market prices and rates. Our market risk exposure is primarily a result of fluctuations in foreign currency exchange rates. The functional currency of our FibroGen Europe subsidiary is the local currency. Most of our revenue from collaboration agreements are denominated in U.S. dollars, and therefore our revenue is not currently subject to significant foreign currency risk. Our operating expenses are denominated in the currencies of the countries in which our operations are located, which are primarily in the United States, China, and Europe. Our consolidated results of operations and cash flows are, therefore, subject to fluctuations due to changes in foreign currency exchange rates and may be adversely affected in the future due to changes in foreign exchange rates.

In February 2013, we entered into a long-term property lease with Beijing Economic-Technological Development Area (“BDA”) Management Committee for a pilot plant located in Beijing Yizhuang Biomedical Park of BDA. The lease financing obligation of approximately $3.1 million is payable in Renminbi and subject to fluctuation in the exchange rate with the U.S. dollar. During the year ended December 31, 2013, the effect of a hypothetical 10% change in foreign currency exchange rates would have resulted in a gain or loss on foreign currency of approximately $0.3 million.

The primary objective of our investment activities is to preserve our capital to fund our operations. We also seek to maximize income from our cash and cash equivalents without assuming significant risk. To achieve our

objectives, we invest our non-operating cash and cash equivalents in high quality and highly liquid U.S. government money market funds and in other money market funds in stable economies. A portion of our investments are invested in high quality corporate bonds and may be subject to interest rate risk and could fall in value if market interest rates increase. However, because we generally hold our bonds to maturity, we believe that our exposure to interest rate risk is not significant and a 1% change in market interest rates would not have a material impact on the total fair value of our portfolio. We actively monitor changes in interest rates.

To date, we have not entered into any hedging arrangements with respect to foreign currency risk or other derivative financial instruments.

Recent Accounting Pronouncements

In April 2014, the FASB issued Accounting Standards Update ("ASU") No. 2014-08, *Reporting Discontinued Operations and Disclosures of Disposals of Components of an Entity*." The ASU amendment changes the requirements for reporting discontinued operations in Subtopic 205-20. The amendment is effective on a prospective basis for financial statements issued for fiscal years, and interim periods within those fiscal years, beginning on or after December 15, 2014. Early adoption is permitted for disposals that have not been reported in financial statements previously issued. We will apply the provisions of this ASU to any future transactions after the effective date which qualify for reporting discontinued operations.

In May 2014, the FASB issued ASU No. 2014-09, *Revenue from Contracts with Customers* (Topic 606), which supersedes the revenue recognition requirements in ASC 605, *Revenue Recognition*. This ASU is based on the principle that revenue is recognized to depict the transfer of goods or services to customers in an amount that reflects the consideration to which the entity expects to be entitled in exchange for those goods or services. The ASU also requires additional disclosure about the nature, amount, timing and uncertainty of revenue and cash flows arising from customer contracts, including significant judgments and changes in judgments and assets recognized from costs incurred to obtain or fulfill a contract. The ASU's effective date will be the first quarter of fiscal year 2017 (for a public entity) or the first quarter of 2018 (for a non-public entity, but with earlier adoption permitted) using one of two retrospective application methods. We have not determined the potential effects of this ASU on our consolidated financial statements.

In August 2014, the FASB issued new guidance related to the disclosures around going concern. The new standard provides guidance around management's responsibility to evaluate whether there is substantial doubt about an entity's ability to continue as a going concern and to provide related footnote disclosures. The new standard is effective for fiscal years, and interim periods within those fiscal years, beginning after December 15, 2016. Early adoption is permitted. We will apply the guidance and disclosure provisions of the new standard upon adoption.

In February 2013, the Financial Accounting Standards Board (FASB) issued Accounting Standards Update (ASU) No. 2013-02, *Comprehensive Income (Topic 220): Reporting of Amounts Reclassified Out of Accumulated Other Comprehensive Income* (ASU 2013-02). This accounting standard update requires an entity to provide information about the amounts reclassified out of accumulated other comprehensive income by component. This ASU is effective for reporting periods beginning after December 15, 2012. We adopted this guidance in the first quarter of 2013 and the adoption of this guidance did not have an impact on our consolidated financial statements or results of operations.

In July 2013, the FASB issued ASU No. 2013-11, *Income Taxes (Topic 740): Presentation of an Unrecognized Tax Benefit When a Net Operating Loss Carryforward, a Similar Tax Loss, or a Tax Credit Carryforward Exists (a Consensus of the FASB Emerging Issues Task Force)* (ASU 2013-02). This newly issued accounting standard update requires a liability related to an unrecognized tax benefit to be presented as a reduction of a deferred tax asset for a net operating loss carryforward, a similar tax loss, or a tax credit carryforward if such settlement is required or expected in the event the uncertain tax position is disallowed. We adopted this guidance in the first quarter of 2014 and the adoption of this guidance did not have an impact on our consolidated financial statements.

BUSINESS

OVERVIEW

We are a research-based, biopharmaceutical company focused on the discovery, development and commercialization of novel therapeutic agents to treat serious unmet medical needs. We have capitalized on our extensive experience in fibrosis and hypoxia inducible factor, or HIF, biology to generate multiple programs targeting various therapeutic areas. Our most advanced product candidate, roxadustat, or FG-4592, is an oral small molecule inhibitor of HIF prolyl hydroxylases, or HIF-PHs, in Phase 3 clinical development for the treatment of anemia in chronic kidney disease, or CKD. Our second product candidate, FG-3019, is a monoclonal antibody in Phase 2 clinical development for the treatment of idiopathic pulmonary fibrosis, or IPF, pancreatic cancer and liver fibrosis. We have taken a global approach to the development and future commercialization of our product candidates, and this includes development and commercialization in the People's Republic of China, or China.

We intend to leverage our extensive experience in fibrosis and HIF biology to build a successful biopharmaceutical company with a strong pipeline of products and product candidates for the treatment of anemia, fibrosis, cancer, corneal blindness and other serious unmet medical needs. Our near-term and long-term strategies include:

- Develop and, if approved, commercialize roxadustat with the assistance of our collaboration partners in the United States, Europe, China and Japan and the rest of the world, including enrolling and completing our global Phase 3 program in CKD anemia and seeking regulatory approval for roxadustat in multiple geographies, including as a Domestic Class 1.1 therapeutic in China.
- Enroll and complete our Phase 2 clinical studies of FG-3019 in IPF and pancreatic cancer, and initiate, enroll, and complete subsequent Phase 3 pivotal studies of FG-3019 in IPF and pancreatic cancer in the United States and potentially outside of the United States.
- Continue to pursue an extensive and multi-layered patent portfolio to protect our technologies and product candidates.
- Explore potential partnering opportunities for the development and commercialization of FG-3019 in certain territories.
- Develop FG-5200 for treatment of corneal blindness resulting from partial thickness corneal damage in China and elsewhere in the world.
- Strategically invest in the research and development of additional anemia indications for roxadustat, which may include chemotherapy-induced anemia, anemia relating to inflammatory diseases, myelodysplastic syndrome, or MDS, and surgical procedures requiring transfusions.
- Use our extensive HIF platform to increase our pipeline by exploring proof-of-concept with our HIF-PH selective inhibitors, such as FG-8205, and our other HIF-PH inhibitors, including FG-6874 (which has completed single and multiple ascending dose Phase 1 clinical studies in Singapore), in indications such as hematopoietic stem cell mobilization, peri-operative anemia, heart failure post-myocardial infarction, inflammatory bowel disease, diabetes, cancer and wound healing.
- Expand our efforts in fibrosis by pursuing additional indications for FG-3019, which may include Duchenne muscular dystrophy, scleroderma lung disease, liver fibrosis associated with graft rejection, non-alcoholic steatohepatitis, or NASH, diabetic nephropathy, focal segmental glomerular sclerosis, congestive heart failure, pulmonary arterial hypertension and cancers such as melanoma, ovarian, breast, and squamous cell lung carcinoma.

ROXADUSTAT FOR THE TREATMENT OF ANEMIA IN CHRONIC KIDNEY DISEASE

Roxadustat is an internally discovered HIF-PH inhibitor that acts by stimulating the body's natural pathway of erythropoiesis, or red blood cell production. Roxadustat, the first HIF-PH inhibitor to enter Phase 3 clinical development, represents a new paradigm for the treatment of anemia in CKD patients, with the potential to offer a safer, more effective, more convenient and more accessible therapy than the current standard of care, injectable erythropoiesis stimulating agents, or ESAs.

Roxadustat is currently in Phase 3 global development for the treatment of anemia in patients with chronic kidney disease, or CKD. 1,449 subjects have participated in 26 completed Phase 1 and 2 clinical studies for roxadustat in North America, Europe and Asia. These studies have demonstrated roxadustat's potential for a favorable safety and efficacy profile in anemic CKD patients, both those who are dialysis-dependent, or DD-CKD, and those who are not dialysis-dependent, or NDD-CKD. According to IMS Health, 2013 global ESA sales in all anemia indications totaled $8.6 billion. While the use of ESAs to treat anemia in CKD has largely been limited to use in DD-CKD patients, we and our partners believe that, as an oral agent with a potentially more favorable safety profile, roxadustat could increase accessibility and expand the market for anemia treatment by penetrating the NDD-CKD market. In the longer term, we believe roxadustat has the potential to address non-CKD anemia markets, including chemotherapy-induced anemia, anemia related to inflammation (such as inflammatory diseases), myelodysplastic syndrome, or MDS, and surgical procedures requiring transfusions.

We, along with our collaboration partners Astellas Pharma Inc., or Astellas, and AstraZeneca AB, or Astra Zeneca, have designed a global Phase 3 program to support regulatory approval of roxadustat in both NDD-CKD and DD-CKD patients in the United States, the European Union, Japan and China. Our US and EU Phase 3 program has an aggregate target enrollment of approximately 7,000 to 8,000 patients worldwide and is the largest Phase 3 clinical program ever conducted for an anemia product candidate. Our Phase 3 program is also designed and sized for, and will incorporate major adverse cardiac events, or MACE, composite safety endpoints that we believe will be required for approval in the United States for all new anemia therapies. Our Phase 3 program will study multiple patient populations, including patients within the first four months of initiating dialysis, or incident dialysis, and non-incident, or stable, dialysis patients and will include multiple NDD-CKD studies comparing roxadustat against placebo control.

Background of Anemia in CKD

Anemia is a serious medical condition in which patients have insufficient red blood cells and low levels of hemoglobin, or Hb, a protein in red blood cells that carries oxygen to cells throughout the body. Anemia is associated with increased risks of hospitalization, cardiovascular complications, need for blood transfusion, exacerbation of other serious medical conditions and death. In addition, anemia frequently leads to significant fatigue, cognitive dysfunction, and decreased quality of life. The more severe the anemia, as measured in lower Hb levels, the greater the health impact on patients. Severe anemia is common in patients with CKD, cancer, MDS, inflammatory diseases, and other serious illnesses. Even when it accompanies prevalent and serious diseases, anemia is often not effectively treated.

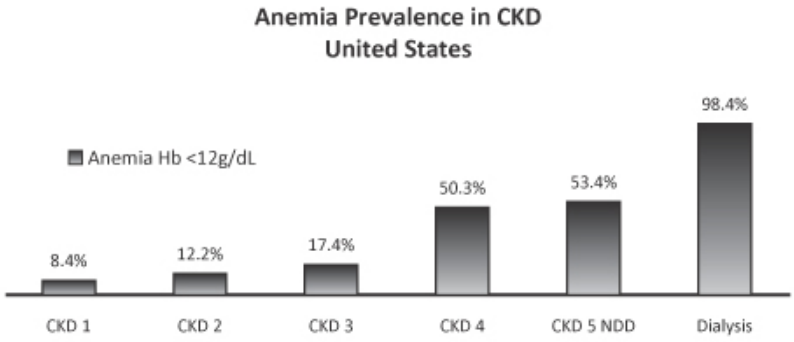
Anemia is particularly prevalent in patients with CKD, which is a critical healthcare problem and is most commonly caused by diabetes and hypertension in the United States and Europe. CKD affects over 200 million people worldwide and anemia significantly increases healthcare costs for those patients. CKD is generally a progressive disease characterized by the gradual loss of kidney function that may eventually lead to kidney failure, also known as end stage renal disease, or ESRD. Patients with ESRD require renal replacement therapy—either dialysis treatment or kidney transplantation. CKD accompanied by anemia is associated with worse health outcomes than CKD alone, including more rapid progression of CKD and increased death rate. There are 5 stages of CKD which are primarily defined by a measure of the filtration function of the kidney (GFR).

Stages of CKD and Prevalence in the United States

Stages of CKD	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5
	Normal or increased GFR† (>90) with other evidence of kidney damage	Mild decrease in GFR (60-89) with other evidence of kidney damage	Moderate decrease in GFR (30-59)	Severe decrease in GFR (15-29)	Established renal failure, GFR<15
Prevalence in the US* (millions)	6.4	7.0	17.3	1.1	0.6 0.43 on dialysis 0.15 non-dialysis

* US prevalence is estimated for adults 20 years of age or older
† GFR: Glomerular Filtration Rate (ml/min/1.73m2)
Sources: The prevalence of stage 1 through stage 4 CKD was calculated based on estimates by Kidney Disease Improving Global Outcomes (2012 guideline), 2011 estimates by the U.S. Renal Data System (USRDS) using data from the National Health and Nutrition Examination Survey (NHANES) 2005-2010 and 2011 data from the U.S. Census Bureau. The prevalence of stage 5 CKD was calculated based on 2011 data from the USRDS using data from NHANES 2005-2010 and 2011 data from the U.S. Census Bureau.

The prevalence rate of anemia in patients with Hb<12 g/dL is set forth below.



Sources: The prevalence of anemia in stage 1 through stage 4 CKD and stage 5 NDD-CKD were derived from Stauffer and Fan, Prevalence of Anemia in Chronic Kidney Disease in the United States, PLoS ONE (2014). The prevalence of anemia in patients undergoing dialysis was derived from Goodkin et al, Naturally Occurring Higher Hemoglobin Concentration Does Not Increase Mortality among Hemodialysis Patients, J Am Soc Nephrol (2011).

In the United States, according to the USRDS, a majority of dialysis eligible CKD patients are currently on dialysis. According to USRDS data as of 2011, approximately 430,000 patients were receiving dialysis in the United States, of whom approximately 80% were being treated with ESAs for anemia. Despite the presence of anemia in stages 3 and 4 CKD patients, in clinical practice, patients typically do not receive ESA treatment for their anemia until they initiate dialysis. In many CKD patients, the disease progresses gradually over decades, and, therefore, patients can spend years suffering from the symptoms and negative health impacts of anemia before they receive treatment. Many of these patients die from cardiovascular events before they initiate dialysis.

Limitations of the Current Standard of Care for Anemia in CKD

Current therapies to treat anemia in CKD include injectable ESAs, intravenous iron, or IV iron, oral iron and blood transfusions. ESAs are the current standard of care for effectively treating anemic CKD patients and are administered intravenously or subcutaneously, typically in conjunction with IV iron. ESAs currently on the market are all synthetic recombinant versions of human erythropoietin, or EPO, a hormone that stimulates erythropoiesis and increases Hb levels by binding to receptors on red blood cell precursors in the bone marrow.

The introduction of the first ESA in 1989 was viewed as a major advance in the treatment of anemia in CKD because it significantly decreased the need for blood transfusions. Since then, ESAs have become one of the most commercially successful drug classes. However, because ESAs were never studied relative to placebo in large randomized clinical trials prior to approval, it was not until years later that their safety profile became better elucidated. Studies published in 2006 to 2009 demonstrated the safety risks of higher ESA doses used to target Hb levels of 13 to 15 g/dL, prompting physicians to balance serious safety concerns against the efficacy of ESAs. The safety concerns observed with injectable ESAs in these studies included an increased risk of cardiovascular adverse events and death as well as a potentially increased rate of tumor recurrence in patients with cancer.

The emergence of the safety issues resulted in several changes to ESA drug labeling. This combination of safety concerns and labeling changes, in addition to the subsequent reimbursement changes, described below, was followed by a decline in ESA sales revenues beginning in 2007. While we believe this decline in ESA sales is primarily due to complete suspension of use of ESAs in anemias associated with cancer, and restrictions on use in chemotherapy induced anemia, we believe the decline in sales is also partly due to the progressive decline in ESA dose administered to CKD patients. Compared to the average ESA dose at the end of 2006, the mean monthly ESA dose in patients on hemodialysis dropped by 6%, 19% and 37% by the end of 2009, 2010 and 2011, respectively (USRDS ESRD Atlas 2013).

Safety Issues of ESAs

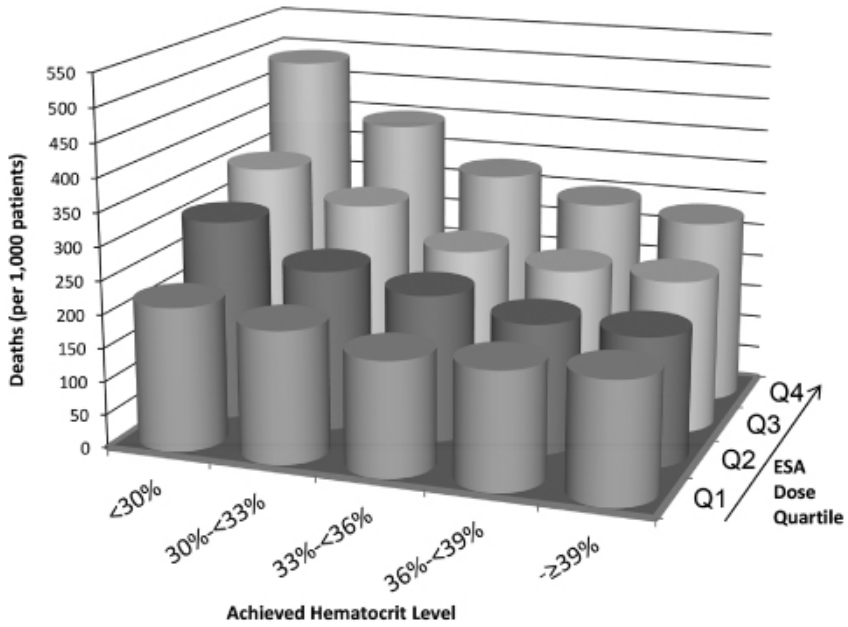
Several large clinical trials were designed to demonstrate that targeting higher as opposed to lower Hb levels results in better outcomes. However, they instead generated data showing that targeting higher Hb levels with ESAs resulted in an increase in adverse events, including cardiovascular adverse events. These adverse events were initially observed in 1998 in the NHCT (Normal Hematocrit Cardiac Trial) in CKD patients on dialysis, where the high Hb level treatment arm targeted Hb levels of 13 to 15 g/dL. Additional safety concerns emerged following the CHOIR (Correction of Hemoglobin in Outcomes and Renal Insufficiency), CREATE (Cardiovascular Risk Reduction by Early Anemia Treatment with Epoetin Beta), and TREAT (Trial to Reduce Cardiovascular Events with Aranesp Therapy) studies in NDD-CKD patients, which were published between 2006 and 2009.

Secondary analyses of NHCT, CHOIR and TREAT, as well as subsequent observational studies in dialysis patients, suggest that these safety concerns, particularly the increased cardiovascular risk associated with ESAs, may result from the high ESA doses used to target higher Hb levels rather than the achieved Hb levels themselves. For example, a secondary analysis of CHOIR showed that patients who achieved the desired Hb level with the lowest amounts of ESA have the lowest risk of adverse cardiovascular outcomes as measured by composite endpoints consisting of hospitalization for heart failure, heart attack, stroke, and death. Patients who were treated with the highest ESA doses and, particularly those who achieved the lowest Hb levels, had the greatest risk for these events. In addition, observational studies in patients undergoing dialysis highlighted these risks with high ESA doses and also indicated that higher Hb levels achieved with lower ESA doses were associated with better outcomes.

For example, in an analysis of data from the USRDS of 94,569 hemodialysis patients, increased mortality was found in patients with increased epoetin alfa dose. Patients who achieved the highest hematocrit level (which is a measure of the percentage of volume of whole blood made up of red blood cells; under typical conditions, Hb level can be estimated as one-third the hematocrit level) and received the lowest ESA doses (lowest dose quartile, Q1) had the

lowest mortality rate, and, at any particular ESA dose quartile, patients with higher hematocrit levels tended to have lower mortality levels, according to Zhang et al (Am J Kidney Dis 44:866-876) as illustrated in the chart below.

Unadjusted 1-Year Mortality Rates (per 1000)
by Hematocrit and ESA dosing quartile



Warnings about these risks have been incorporated into guidelines and position papers from major kidney societies and thought leaders. Kidney Disease: Improving Global Outcomes, or KDIGO, a non-profit foundation established in 2003 and operated by the National Kidney Foundation, committed to improving global clinical guidelines for kidney patients, for example, states that, "[t]here may be toxicity from high doses of ESA, as suggested, though not proven, by recent post-hoc analyses of major ESA randomized controlled trials, especially in conjunction with the achievement of high Hb levels. Therefore, in general ESA dose escalation should be avoided." In addition, the European Renal Best Practices Group specified in a recent position statement that caution should be used in ESA therapy in patients with specific risk factors.

Limited Effectiveness of ESAs in Certain Patient Populations

Hb responses to ESA doses are on a continuum with some patients responding with a satisfactory Hb increase to a small ESA dose and others responding very poorly to very high doses. In addition, patients' responsiveness to ESAs can change over time and as a result of circumstances such as acute illness or surgery. In an attempt to reach target Hb level, ESA doses are increased in treatment-resistant patients, or hyporesponders, which can result in up to a 40-fold difference in ESA doses between the most ESA-resistant and the most ESA-responsive DD-CKD patients. Even with high doses of ESAs and concomitant IV iron, some of these hyporesponders are unable to reach target Hb levels.

Hyporesponsiveness is a significant problem in incident dialysis patients, for whom ESA doses are typically high, and is associated with a combination of critically low kidney function and accompanying illnesses, such as infections and chronic inflammation. Incident dialysis patients are generally more anemic, and have a higher risk of death, than patients who have been on dialysis for many months.

A major cause of ESA hyporesponsiveness is an underlying chronic inflammatory state that exists in many CKD patients. Chronic inflammation has a suppressive effect on erythropoiesis in CKD via two main mechanisms.

Firstly, pro-inflammatory cytokines such as tumor necrosis factor alpha, or TNF-alpha, and interleukin-6, or IL-6, have been implicated in the suppression of erythropoiesis through inhibition of the response of erythroid progenitor cells to EPO. Secondly, pro-inflammatory cytokines such as IL-6 elevate the levels of hepcidin, the major hormone that regulates iron metabolism. The consequence of elevated hepcidin levels is a reduction in iron absorption from the gastrointestinal tract, or GI tract, and the trapping of iron in cellular stores. Together this leads to inadequate availability of iron to keep pace with the demands of the bone marrow for erythropoiesis, despite adequate total body iron stores. This condition is referred to as functional iron deficiency.

In the presence of inflammation, even high doses of ESAs may be ineffective to achieve target Hb levels, and to the extent Hb levels are raised, the risks associated with the higher ESA doses required may outweigh the benefits of any increased Hb levels.

Requirement for IV Iron to Support ESA Activity and Associated Safety Risks

IV iron supplementation is used to support anemia correction in a majority of hemodialysis patients treated with ESAs in the United States. ESA labeling indicates that physicians should evaluate the iron status in all patients before and during CKD anemia treatment and maintain iron repletion. Many CKD patients have deficient iron stores, or absolute iron deficiency, and cannot absorb enough iron from diet or oral iron supplements to correct this deficiency. Physicians administer IV iron to ensure patients are iron replete prior to initiating ESA treatment and continue IV iron to mitigate iron depletion caused by ESA-mediated erythropoiesis.

Additionally, many CKD patients who have adequate iron stores suffer from functional iron deficiency. IV iron is administered in an attempt to address this shortage of available iron in these CKD patients, resulting in many patients having elevated body iron stores. While IV iron can help correct anemia when used with ESAs, published studies have suggested acute and chronic risks of both morbidity and mortality associated with the use of IV iron. The acute risks of IV iron supplementation include hypersensitivity reactions (which can be life-threatening and the warning of anaphylaxis risk appears in every IV iron product package insert in the United States), infection, as well as less severe but more common side-effects, such as skin problems, hypotension and GI tract symptoms. In addition to acute side-effects, there may also be chronic adverse effects on organ systems related to the cumulative deposits of iron resulting from the volume of iron administered.

Using data from 12 countries obtained over the past twelve years, Bailie et al. demonstrated a direct dose risk relationship between the amount of IV iron administered per month to dialysis patients and the risk of hospitalization and death (Kidney International (2014)). The study identified that, even after controlling for other risk factors and adjusting for different practice patterns globally, dialysis patients receiving greater than 300 mg of IV iron per month had a greater risk of hospitalization or death than those receiving less than 300 mg. Mortality was 13% greater among those receiving between 300 and 400 mg of IV iron per month and 18% greater among those receiving greater than 400 mg of IV iron per month. Furthermore, hospitalization risk was 12% greater among those who received greater than 300 mg per month. The current paradigm of administrating greater doses of IV iron to decrease ESA doses in light of this recently described associated risk underscores the significant unmet need in the treatment of anemia.

Elevated Blood Pressure

ESAs have long been associated with increased blood pressure, including new onset hypertension and exacerbation of pre-existing hypertension. As a result, ESA labeling carries a warning for the potential for increased blood pressure with ESA usage. Hypertension has been shown to accelerate CKD progression and significantly increase the risk of death in CKD patients due to the increased risk of heart attack or stroke.

Increased Thromboembolism and Vascular Access Thrombosis

ESA use has been associated with thromboembolic events, including stroke, vascular access thrombosis (where the dialysis access shunt is blocked due to blood-clotting), blood clots in the leg, which may in part be due to increases in circulating platelet levels. As a result, ESA labeling carries a warning for an increased risk of thromboembolic events.

FDA Restrictions on ESA Usage

In response to safety concerns elucidated in the large clinical studies described above, the US Food and Drug Administration, or the FDA, steadily increased restrictions on the use of injectable ESAs from 2007 through 2011. During 2007, following the NHCT, CHOIR and CREATE studies and several oncology studies, the FDA mandated the inclusion of a boxed warning, or "Black Box" warning, in the package insert for ESAs. A Black Box warning is the strongest warning that the FDA can require in the package insert of prescription drugs. In June 2011, the FDA required further modification to the package insert for ESAs. The current boxed warning states that ESAs increase the risk of death, myocardial infarction, or heart attack, stroke, venous thromboembolism, thrombosis of vascular access and tumor progression or recurrence. In addition, the package insert changes include more conservative dosing guidelines for the use of injectable ESAs in anemic CKD patients. Specifically, the FDA removed the prior target Hb range of 10 to 12 g/dL and recommends that physicians initiate treatment of CKD patients when the Hb level is less than 10 g/dL and reduce or interrupt ESA dosing if the Hb level approaches or exceeds 10 g/dL for NDD-CKD patients and 11 g/dL for DD-CKD patients. In addition, physicians are advised to use only the lowest dose needed to avoid red blood cell transfusions.

Reimbursement Challenges Associated with ESAs

In addition to the safety concerns and labeling changes for ESAs, the reimbursement applicable to dialysis, including associated drugs such as ESAs, has also changed significantly in recent years, which made ESAs less economically attractive for providers to administer. Prior to January 2011, CMS reimbursed dialysis centers and other healthcare providers for use of ESAs at average selling price plus a premium to their cost, which enabled providers to realize a profit on the administration of ESAs, regardless of the quantity dosed. Under the Medicare Improvements for Patients and Providers Act, or MIPPA, a basic case-mix adjusted composite, or bundled, payment system commenced in January 2011 and transitioned fully by January 2014 to a single reimbursement rate for drugs and all services furnished by renal dialysis centers for Medicare beneficiaries with end-stage renal disease. Specifically, under MIPPA the bundle now covers drugs, services, lab tests and supplies under a single treatment base rate for reimbursement by CMS based on the average cost per treatment, including the cost of ESAs and IV iron doses, typically without adjustment for usage.

ESAs administered to NDD-CKD patients have long been reimbursed under Medicare Part B, which requires providers to purchase and store ESAs in advance of being reimbursed, and in many healthcare practices, the amount reimbursed does not cover the cost of ESA administration. For many of these providers, including in nephrology practices where purchase and storing is most common, due to label changes and related reduction in patients available for treatment, ESA administration in NDD-CKD has become economically unattractive. Furthermore, non-nephrologists generally have elected not to provide ESAs. Accordingly, ESA treatment has been limited outside of dialysis centers.

Inconvenience of ESAs

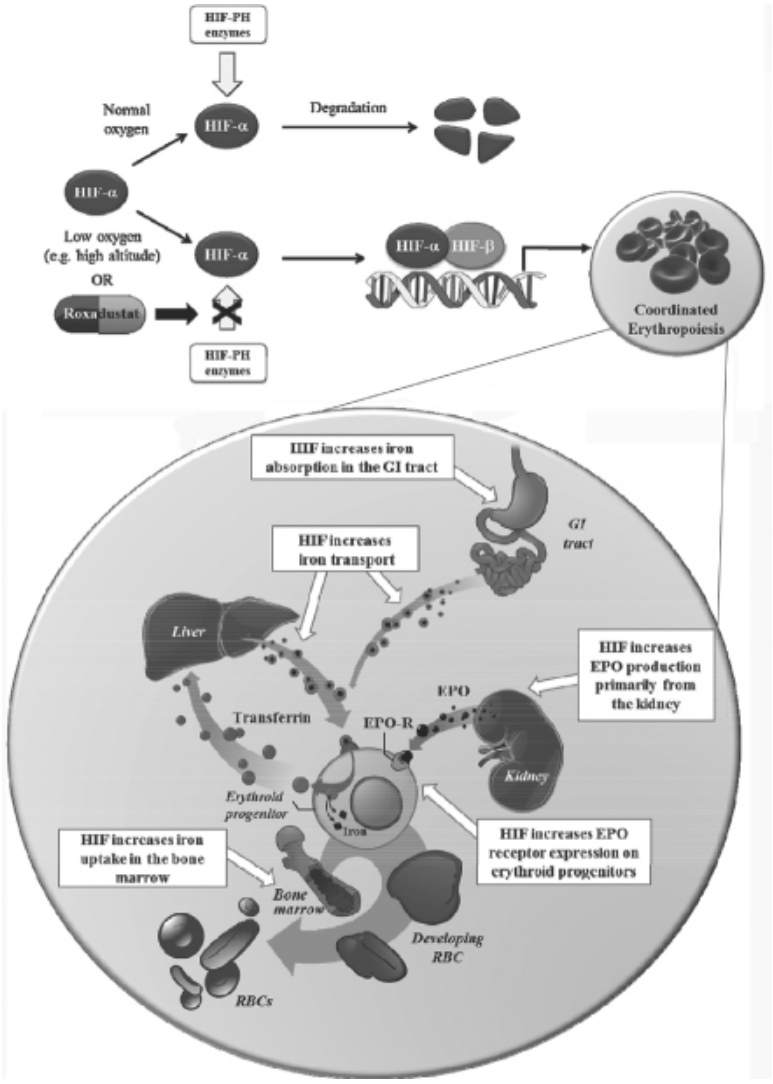
In addition to safety, labeling, reimbursement and efficacy limitations, ESAs must be administered intravenously or subcutaneously, often with IV iron in order for ESAs to be effective at treating to target Hb levels. ESAs are therefore inconvenient for the NDD-CKD population, the peritoneal dialysis population, for whom treatment is often administered at home, and other non-CKD anemia patients who are not already regularly visiting a hospital or dialysis center.

Our Solution

We believe that there is a significant need for a safer, more effective, more convenient and more accessible alternative to injectable ESAs for the treatment of anemia in CKD patients. In addition, we believe there is a significant opportunity for treatment of anemia in markets not effectively addressed by ESAs, such as in the NDD-CKD population and non-CKD anemia markets.

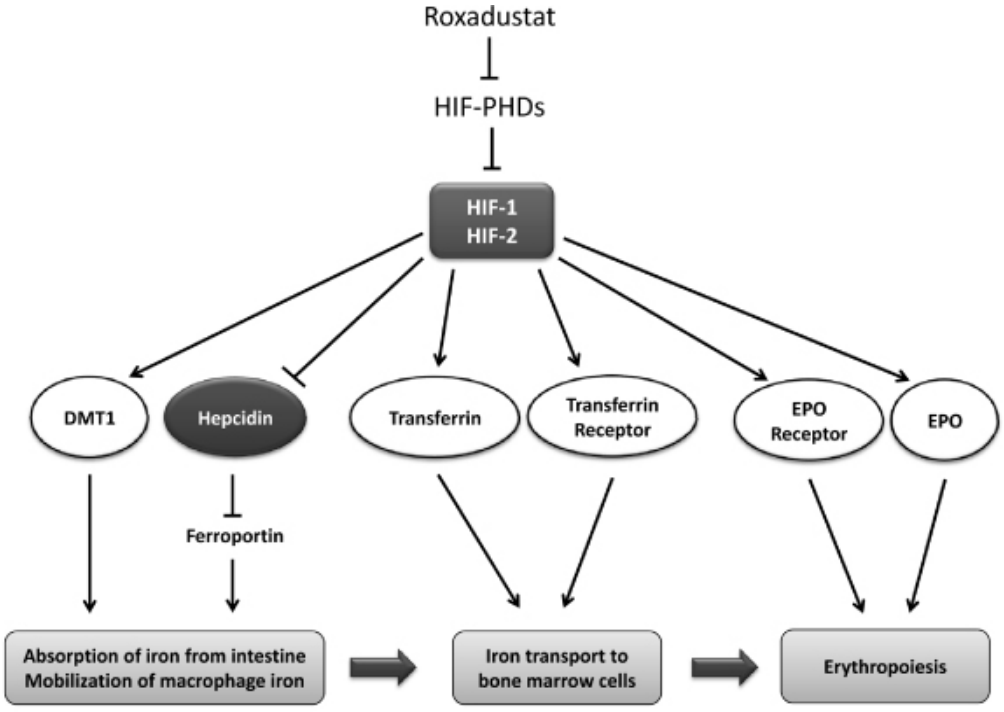
Roxadustat—A Novel, Orally Administered Treatment for Anemia

Roxadustat is an orally administered small molecule that corrects anemia by a different mechanism of action from that of ESAs. As a HIF-PH inhibitor, roxadustat activates a response that is naturally activated when the body responds to reduced oxygen levels in the blood, such as when a person adapts to high altitude. The response activated by roxadustat involves the regulation of multiple, complementary processes to promote erythropoiesis and increase the blood's oxygen carrying capacity. This coordinated erythropoietic response includes both the stimulation of red blood cell progenitors, by increasing the body's production of EPO, and an increase in iron availability for Hb synthesis. Patients taking roxadustat typically have EPO levels within or near the physiologic range naturally experienced by people adapting to hypoxic conditions such as at high altitude, following blood donation or impaired lung function, such as pulmonary edema. By contrast, ESAs act only to stimulate red blood cell progenitors without a corresponding increase in iron availability, and are typically dosed at well above the natural physiologic range of EPO. The sudden demand for iron stimulated by ESA-induced erythropoiesis can lead to functional or absolute iron deficiency. We believe these high doses of ESAs are a main cause of the significant safety issues that have been attributed to this class of drugs. In contrast, the differentiated mechanism of action of roxadustat, which involves induction of the body's own natural pathways to achieve a more complete erythropoiesis, has the potential to provide a safer and more effective treatment of anemia, including in the presence of inflammation, which normally limits iron availability.



Our HIF-PH inhibitor technology relies on the natural mechanism by which the body responds to low oxygen levels. HIF is a transcription factor comprised of a HIF-alpha and a HIF-beta subunit, both of which are required to stimulate erythropoiesis. Under normal oxygen conditions, the HIF-alpha subunit is targeted for rapid degradation through the activity of a family of HIF-PH enzymes. However, under low oxygen conditions, the HIF-PH enzymes cannot function and HIF-alpha accumulates. HIF-alpha then combines with HIF-beta, and the newly formed HIF complex initiates transcription of a number of

genes involved in the erythropoietic process, which ultimately leads to increased oxygen delivery to tissues. Roxadustat works by reversibly inhibiting the HIF-PH enzymes, thus mimicking this coordinated natural erythropoietic response through genes transcribing the proteins shown below involved in iron absorption, mobilization and transport as well as stimulation of red blood cell progenitors.



Adapted from Prabhakar & Semenza. Physiological Reviews (2012) 92: 967-1003

Our discovery and development of roxadustat resulted from years of experience working with prolyl hydroxylase enzymes, such as those that regulate HIF, and a deep understanding of the complexities of HIF biology. We have explored therapeutic activation of HIF to treat anemia from an integrated perspective with a focus on applying our HIF-PH inhibitor technology to produce coordinated effects on erythropoiesis and iron homeostasis and metabolism. As part of these progressive efforts, we have explored the ability of our HIF-PH inhibitor technology to increase sensitivity to endogenous EPO by increasing EPO receptor expression on red blood cell progenitors. We have investigated multiple effects of HIF-PH inhibitors on iron metabolism, including their ability to regulate genes that can increase iron bioavailability. We have also shown that administration of HIF-PH inhibitors can decrease expression of hepcidin, the key hormone that regulates iron metabolism. Hepcidin is elevated under conditions of chronic inflammation, leading to reduced iron availability for erythropoiesis. Based on our gene expression and hepcidin data, we believe HIF-PH inhibitors can increase intestinal iron absorption and enhance the mobilization and uptake of iron. In addition, we have shown that HIF-PH inhibitors can improve transferrin saturation (a measure of circulating iron available for erythropoiesis) and can correct anemia associated with chronic inflammation by overcoming the hepcidin-mediated sequestration of iron that cannot be overcome by ESA therapy.

Based on our knowledge of HIF biology, we selected roxadustat from our extensive library of compounds from various chemical classes of HIF-PH inhibitors, including heterocyclic carboxamides and 2-oxoglutarate mimetics. Roxadustat was selected based on our belief that stabilizing the two main forms of HIF in the cell, HIF-1 and HIF-2, leads to a more complete erythropoietic response.

Although HIF-PH inhibitor programs have been subsequently initiated at several other companies, we expect to remain the leader in the development of HIF-PH inhibitors for anemia, with more patients dosed and more studies conducted with roxadustat than with any other HIF-PH inhibitor.

Potential Advantages of Roxadustat for Treatment of Anemia in CKD

We believe that roxadustat has the potential to offer several safety, efficacy, reimbursement, and convenience advantages over ESAs.

Potential Safety and Efficacy Advantages

Our clinical trials to date have shown that roxadustat can treat anemia in CKD with much lower circulating EPO levels than with treatment by ESAs, mitigate the need for IV iron and treat anemia in the presence of inflammation, thereby offering potential safety and efficacy benefits over ESAs. We have incorporated several endpoints into our Phase 3 studies to further elucidate and demonstrate these and other potential clinical benefits of roxadustat.

Potential Cardiovascular Benefits

The CKD patient population is at high risk for cardiovascular events such as heart attacks and strokes. One known side effect of ESAs is elevation of blood pressure, which is particularly dangerous in this high risk patient population. In contrast, we did not observe increases in blood pressure in patients treated with roxadustat beyond the background levels observed for the comparable placebo-treated patients in a NDD-CKD Phase 2 trial. However, these data should be cautiously assessed due to the limited number of patients exposed. In Study 041, the NDD-CKD patients treated with roxadustat three times weekly for more than 12 weeks had a modest decrease in blood pressure in a subgroup analysis of our Phase 2 NDD-CKD study.

In our Phase 2 studies, we did not observe a safety signal for thromboembolic risk. In contrast to the platelet increase with ESA treatment, platelet counts reported in roxadustat-treated patients did not increase, as those with platelet levels in the top 25th percentile at baseline saw their platelet levels decrease towards normal levels while those with platelet levels in the lower 75th percentile at baseline saw their platelet levels remain stable. This finding supports our belief in a potential safety benefit over ESAs since the platelet increase with ESAs could be a contributing factor in the thromboembolic risk associated with ESAs.

In addition, in our Phase 2 clinical trials, we observed reductions in total cholesterol and an improvement in average HDL / LDL ratio. Since many CKD patients have high cholesterol levels, which contribute to cardiovascular-related morbidity and mortality, the improvement in the average HDL / LDL ratio observed with roxadustat treatment could confer a benefit to patients.

Based on our preclinical and clinical data generated to date, we believe roxadustat could offer cardiovascular benefits to a CKD patient population that typically has cardiovascular-related co-morbidities and is at a high risk for cardiovascular events.

Potential for Anemia Correction with Moderate EPO Levels

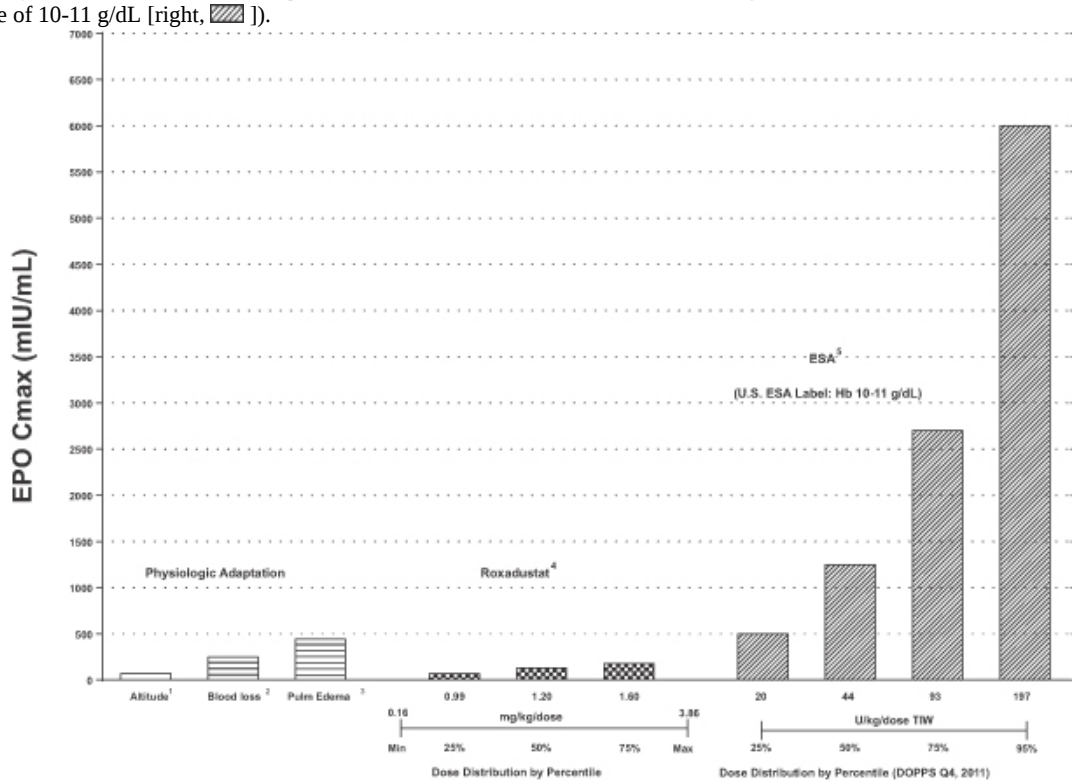
Randomized trials have suggested that high doses of ESAs administered in an attempt to achieve a target Hb level may cause the safety issues associated with ESA therapy. These high doses result in serum EPO levels much higher than physiological range. In contrast, the level of endogenous EPO elevation among patients treated with roxadustat is typically within or near the range observed when ascending to a higher elevation or giving blood. Treating anemia while maintaining lower circulating EPO levels may mitigate, or even avoid, the risks from ESA therapy, including cardiovascular events and death.

The following graph depicts:

1) the circulating endogenous EPO levels in natural physiologic adaptations, such as adjustment to high altitude, blood loss, or pulmonary edema [left, ▭];

2) transient peak endogenous EPO levels estimated for CKD patients who achieved a Hb response to therapeutic doses of roxadustat in our phase 2 clinical studies [middle, ▩];

3) the estimated peak circulating recombinant EPO levels resulting from IV ESA doses in distributions reported by the Dialysis Outcomes and Practice Patterns Study, or DOPPS, for the fourth quarter of 2011 in the United States (after bundling was initiated and when the Hb target in ESA labeling was in the range of 10-11 g/dL [right, ▨]).

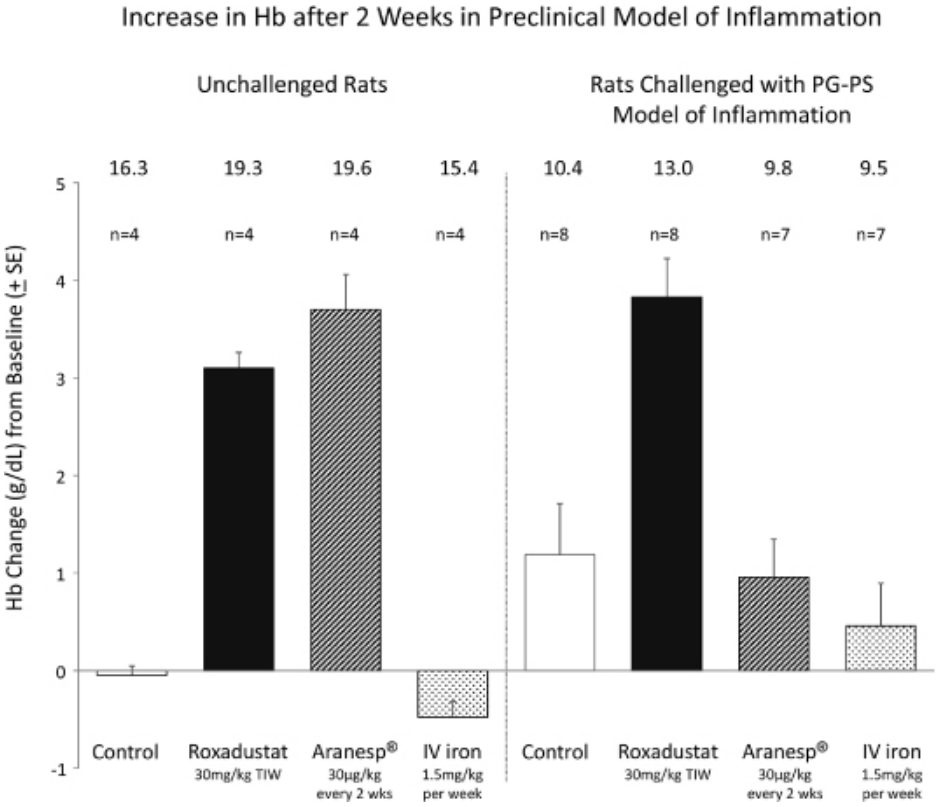


[1]Milledge & Cotes (1985) J Appl Physiol 59:360; [2]Goldberg et al. (1993), Clin Biochem 26:183, Maeda et al. (1992) Int J Hematol 55:111; [3]Kato et al. (1994) Ren Fail 16:645; [4]The transient peak endogenous EPO concentrations, or Cmax, data for roxadustat was derived from a subset of 243 patients who achieved a Hb response to roxadustat in our Phase 2 studies for whom we believe doses depicted approximated therapeutic doses. Hb target ranges for these patients were above the Hb levels specified in the current ESA package insert for CKD patients. Only doses in those patients whose Hb responded in Phase 2 studies are reflected in the figure. The subset of patients included 134 NDD-CKD patients treated to thrice-weekly, twice-weekly, or weekly doses of roxadustat for >16 weeks. The subset also included 109 DD-CKD patients, including incident dialysis patients whose anemia was corrected with therapeutic doses, and stable dialysis patients who received maintenance doses. EPO levels were not measured in all patients; instead EPO Cmax levels were estimated based on data derived from a more limited number of patients in whom EPO levels were measured at various roxadustat doses and among whom there was substantial variation in measured EPO levels. Accordingly, individual patients who received roxadustat may have realized EPO Cmax levels significantly above or below these estimated levels. Moreover, the estimates reflected in the graph may not be reflective of actual EPO Cmax levels or ranges that will be realized in larger populations of patients receiving roxadustat in our Phase 3 clinical trials. [5]EPO C_{max} was computed from ESA dose distributions based on Flaherty et al. (1990) Clin Pharmacol Ther 47:557.

Potential for Anemia Correction for Patient Populations that are Hyporesponsive to ESAs

Incident dialysis patients and patients who have chronic inflammation are often hyporesponsive to ESAs, which necessitates the use of higher doses of ESAs to increase Hb levels, thus increasing both safety risk and treatment cost. In contrast, the dose of roxadustat may not need to be increased in incident dialysis patients or to overcome the suppressive effects of inflammation on erythropoiesis, which we believe may confer significant safety and efficacy benefits.

As a result of roxadustat's different mechanism of action, the ability of roxadustat to stimulate erythropoiesis does not appear to be impaired by chronic inflammation. In a preclinical model of inflammation induced by peptidoglycan-polysaccharide (PG-PS) polymers, roxadustat increased Hb levels and mean corpuscular volume (MCV), whereas Aranesp®, an ESA, and IV iron did not increase Hb or MCV. In contrast, the same doses of roxadustat and Aranesp® were both effective at raising Hb levels in the unchallenged rats (without inflammation). In addition, the ESA actually decreased MCV in the unchallenged rats, as compared to the control.



Our preclinical studies indicate that roxadustat can overcome the direct suppressive effects of inflammatory cytokines on erythropoiesis. In addition, roxadustat can reduce hepcidin levels, thus increasing absorption of iron from the GI tract and the release of iron from intracellular stores and mitigating the functional iron deficiency associated with chronic inflammation.

Furthermore, in our Phase 2 studies, patients' Hb response to roxadustat was independent of the degree of underlying inflammation, as assessed by circulating levels of C-reactive protein, or CRP, a well-recognized marker of inflammation. Incident dialysis patients have the highest levels of mortality of all dialysis patients. The

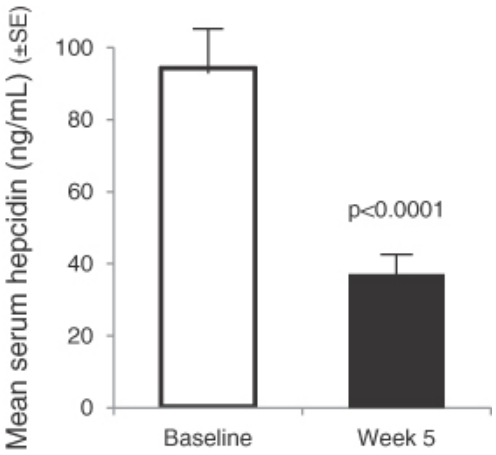
incident dialysis period is also the period during which mean ESA doses are generally highest. To the extent the increased levels of mortality are associated with high ESA doses, roxadustat may offer a benefit to incident dialysis patients. The median roxadustat dose in our dialysis Study 053 was 1.3 mg/kg; the endogenous EPO levels usually associated with this dose level are comparable to the physiologic range naturally experienced by people adapting to high altitude or following blood donation. See additional information on endogenous EPO levels under the heading “Potential for Anemia Correction with Moderate EPO Levels”.

Potential for Reduced Hepcidin Levels and Anemia Correction Without IV Iron

An important differentiator of roxadustat from ESAs is that roxadustat is expected to correct anemia and maintain Hb without IV iron supplementation. Patients with chronic illness, such as CKD, often suffer from absolute iron deficiency or functional iron deficiency. We believe that elevated levels of hepcidin, the major hormone that regulates iron metabolism, contributes to both absolute and functional iron deficiency.

Our Phase 2 clinical trials have shown that roxadustat can significantly reduce hepcidin levels in patients with DD-CKD and NDD-CKD. The following figure shows a reduction in serum hepcidin level of approximately two thirds, observed at week 5, in 52 incident dialysis patients treated with roxadustat.

Reduction of Serum Hepcidin Levels (Study 053) in Incident Dialysis Patients



In addition, we believe roxadustat increases the levels of proteins involved in iron uptake, release and transport. Data from our Phase 2 clinical trials indicate that oral iron supplementation alone is adequate to correct anemia during treatment with roxadustat, in contrast to ESAs which typically require IV iron supplementation. Additionally, our data indicate that unlike ESAs, roxadustat treatment does not require that patients be iron replete before initiating therapy.

Avoiding IV iron helps to avoid the significant safety risks associated with IV iron described above, and, because the cost of oral iron is significantly less than the cost of IV iron, could also confer significant costs savings.

Potential Reimbursement and Convenience Advantages

Potentially Differentiated Reimbursement Framework

ESAs are included in the MIPPA bundled payment system in the DD-CKD setting and reimbursed under Medicare Part B in the NDD-CKD setting. Based on our roxadustat data to date, we believe roxadustat has the potential to correct anemia through a differentiated mechanism of action and different therapeutic effects that create the potential to

displace multiple drugs in current use (such as ESAs and IV iron), or those in development (such as agents for suppression of hepcidin). Although the bundle currently covers ESAs or oral equivalents of ESAs or other IV products encompassed by the bundle, due to the differentiated nature of roxadustat and a lack of definition in the regulations on oral equivalency, for which there may be a CMS determination later this year, it is unclear whether roxadustat will be included in or excluded from the bundle. Under MIPPA, agents that have no IV equivalent in the bundle are currently expected to be excluded from the bundle until 2024. We believe that there may be commercial benefits in either event but are unable to predict the potential benefits until further guidance from CMS becomes available.

In the NDD-CKD setting, we expect that roxadustat, an oral treatment, should be subject to Medicare Part D, which would allow physicians to prescribe roxadustat without the financial and reimbursement risk associated with purchasing and storing injectable ESAs. We believe that this should encourage significantly greater usage outside of the dialysis setting.

Potential Reduction of Other Medications

In addition to potentially eliminating the need for IV iron, based on our Phase 2 clinical trial results to date, we believe that roxadustat has the potential to reduce the use of other medications frequently required in some CKD anemia patients, such as anti-hypertensives, anti-coagulants, and statins.

Oral Administration

Many physicians that treat CKD patients, particularly cardiologists, endocrinologists, and internists, do not typically stock or administer ESAs. An easily accessible oral agent that is dispensed by pharmacies could significantly increase the number of physicians treating anemia in patients with CKD and therefore the number of patients receiving treatment.

In addition, the oral administration of roxadustat potentially offers a significant convenience advantage for CKD patients who have yet to initiate dialysis and are therefore not regularly visiting a dialysis center. Patients can more easily self-administer medicine in any setting, rather than being subject to the inconvenience and restrictions of regular visits to physicians' offices or infusion centers for treatment with ESAs.

Potential Pharmacoeconomic Advantages

Based on our Phase 2 clinical trial results to date, we believe that roxadustat's potential pharmacoeconomic advantages over ESA therapy may include safety (with a potential decrease in cardiovascular events and consequently lower associated treatment costs), lower administrative cost, reduction or elimination of IV iron and potentially other medications. If we can demonstrate any of these pharmacoeconomic advantages in our Phase 3 studies, they may help support reimbursement worldwide, including Europe and China.

The Market Opportunity for Roxadustat

We believe that there is a significant opportunity for roxadustat to address markets currently served by injectable ESAs. According to IMS Health, 2013 global ESA sales in all indications totaled $8.6 billion, driven primarily by $6.2 billion in the United States and Europe. We believe that a substantial portion of ESA sales are for CKD anemia. For example, in the U.S., EPOGEN, which is primarily used in the DD-CKD patient population, had 2013 sales of approximately $2 billion. We further believe that the number of patients requiring anemia therapy will grow steadily as the global CKD population and access to dialysis care continue to expand, particularly in China and other emerging markets including the rest of Asia, Latin America, Eastern Europe, the Middle East and the Commonwealth of Independent States.

Furthermore, we believe that there is a significant opportunity for roxadustat to address patient segments that are currently not effectively served by ESAs, such as anemia in the NDD-CKD patient population, which is

substantially larger than the DD-CKD patient population. Diabetes and hypertension are the leading causes of secondary CKD. Although we estimate approximately 36% of diabetic and 20% of hypertensive CKD patients are anemic (Hb<12g/dL), we believe the majority of these patients are currently untreated for anemia since they are under the care of non-nephrology specialists, such as endocrinologists, diabetologists, cardiologists and internists, where ESA therapies are not readily available.

We also believe that roxadustat may provide a safer option to re-establish the chemotherapy induced anemia market, which was once a market of comparable size to the DD-CKD anemia market. Other non-CKD anemias, including anemia related to inflammatory diseases, MDS and surgical procedures requiring transfusions, which are not addressed adequately with currently available therapies, could form another opportunity.

OUR DEVELOPMENT PROGRAM FOR ROXADUSTAT

As of October 22, 2014, there have been 1,932 subjects enrolled in more than 32 roxadustat clinical studies in North America, Latin America, Europe, and Asia, of which 1,503 subjects have been exposed to roxadustat. We have treated some of these patients for 24 weeks in Phase 2 studies, and several patients for 3 years in a safety extension study.

We along with our partners, Astellas and AstraZeneca, have designed our global Phase 3 program to support regulatory approval of roxadustat in both NDD-CKD and DD-CKD patients in the United States, the European Union, Japan and China. Our US and EU Phase 3 program has an aggregate target enrollment of approximately 7,000 to 8,000 patients worldwide and is the largest Phase 3 clinical program ever conducted for an anemia product candidate. Our U.S. Phase 3 program is also designed and sized for demonstrating non-inferiority to comparators for the MACE composite safety endpoints in two separate patient pools, NDD-CKD and DD-CKD. We believe this will be required for approval in the United States for all new anemia therapies. Our Phase 3 program will study multiple patient populations, including incident dialysis patients and stable dialysis patients and will include multiple NDD-CKD studies comparing roxadustat against placebo controls. Five of the six Phase 3 studies supporting approval in the EU use the same patients that are intended to support approval in the United States. However, the EU requires shorter treatment duration and less overall patient exposure. We currently expect to complete patient enrollment in our U.S. studies by or in the first half of 2016, and that data for U.S. Phase 3 NDD-CKD studies will be reported in 2017. We currently anticipate filing for approval for roxadustat in the United States in 2018.

We have a separate roxadustat clinical development program for China and we currently plan to initiate Phase 3 studies in the first half of 2015 through FibroGen China. We currently anticipate filing for approval for roxadustat in China in 2016. In addition, Astellas is developing roxadustat in Japan as part of a Japan-specific development program and is currently conducting Phase 2 studies there.

Our Phase 2 Program

We have completed and analyzed six roxadustat Phase 2 studies, three in NDD-CKD patients and three in DD-CKD patients, to assess the efficacy of roxadustat to both correct anemia (“correction”) and maintain the Hb response (“maintenance”). Data from these studies have been published and presented at various medical conferences. Two of the six completed Phase 2 studies were conducted in China. The efficacy and safety data generated from our China studies were consistent with our U.S. Phase 2 studies and further contributed to the promising efficacy and safety results to date. Our collaboration partner Astellas’ Japan Phase 2 dialysis study in patients with CKD anemia has been completed, and data reconciliation and analysis are in process.

The data from our completed Phase 2 studies demonstrated that roxadustat achieved a clinically meaningful increase in Hb levels in anemic NDD-CKD and DD-CKD patients and maintained Hb levels in DD-CKD patients who were converted from ESA therapy. Roxadustat corrected anemia without the need for IV iron supplementation and exhibited an acceptable safety profile. Specifically, our Phase 2 studies achieved the following objectives:

- Identified optimal roxadustat dosing regimens for anemia correction and maintenance of Hb response.
- Demonstrated roxadustat’s potential to treat anemia in both NDD-CKD and DD-CKD patients, including incident dialysis patients, the most unstable and high risk CKD patient population.
- Generated substantial safety data, indicating that roxadustat is well tolerated, appears safe and could offer an improved cardiovascular profile relative to ESAs. Including our Phase 1, 2 and 3 studies 1,503 subjects have been exposed to roxadustat.
- Demonstrated that roxadustat may be able to treat anemia without the need for IV iron supplementation.
- Demonstrated that roxadustat can reduce hepcidin levels and potentially treat anemia in a significant subset of patients with inflammation.

The following chart summarizes the design of our completed studies in DD-CKD and NDD-CKD patients and indicates the primary objectives of each study.

Completed Phase 2 Studies

Study Number, Study Location	CKD Patient Population	Study Objective	Number of Roxadustat Patients	Number of Comparator Patients		Total Number of Patients in Study	Treatment Duration (Weeks)	Dose Frequencies
				Placebo	ESA			
FGCL-4592-017 US	Non-dialysis	Correction, PK	88	28		116	4	TIW, BIW
FGCL-4592-041 US	Non-dialysis	Correction & Maintenance	145			145	16;24	TIW, BIW, QW
FGCL-4592-047 China	Non-dialysis	Correction	61	30		91	8	TIW
FGCL-4592-040 US	Stable Dialysis	Conversion & Maintenance	117	4	40	161	6;19	TIW
FGCL-4592-053 Russia, US, Hong Kong	Incident Dialysis	Correction	60			60	12	TIW
FGCL-4592-048 China	Stable Dialysis	Conversion, PK	74		22	96	6	TIW
Total			**545**			**669**		

QW = weekly; BIW = twice weekly; TIW = three times weekly

The following chart summarizes the design of our ongoing Phase 2 studies and indicates the primary objectives of each study.

Ongoing Phase 2 Studies

Study Number, Location	CKD Patient Population	Study Objective	Number of Roxadustat Patients	Number of Comparator Patients		Total Target Number of Patients in Study	Treatment Duration (weeks)	Dose Frequencies
				Placebo	ESA			
1517-CL-0303* Japan	Non-dialysis	Correction	75	25		100	24	TIW, QW
1517-CL-0304* Japan	Dialysis	Maintenance	90		30	120	24	TIW
FGCL- 4592-059 US	Non-dialysis & Dialysis	Long Term Safety & Maintenance	15			15	260+	TIW, BIW, QW

*Studies1517-CL-303 and -304 are being conducted by Astellas

QW = weekly; BIW = twice weekly; TIW = three times weekly

Study 017: Dose Escalating Study in NDD-CKD patients

Study 017 established proof of concept for roxadustat by showing a significant increase in Hb in a dose-dependent manner, and provided data on the relationship between roxadustat dose and Hb response. This formed the basis for the dosing rules that we applied in subsequent studies of longer duration and in a larger number of patients.

This study, a randomized, single-blind, placebo-controlled, dose-escalation study, was the first Phase 2 study to assess the safety and efficacy of a range of roxadustat doses in the correction of anemia in NDD-CKD stage 3 and 4 patients, over four weeks of treatment, and a 12-week safety follow-up period. A total of 116 patients (of which 96 were evaluable) were randomized sequentially into four weight-based dose cohorts: 1 mg/kg, 1.5 mg/kg, 2 mg/kg, and 0.7 mg/kg, respectively. Roxadustat was administered either twice weekly or three times weekly.

Weight Based, Three Times Weekly and Twice Weekly Dosing Leads to Hb Improvement. We tested 4 different roxadustat weight-based doses administered for four weeks with Hb measurements over a six week period. As shown in the table below, all of the patients in the highest weight-based dose cohort met the criteria for response in that they achieved Hb rise $\geq$ 1 g/dL in four weeks. As roxadustat achieved 100% Hb response at the 2 mg/kg dose, higher doses were not pursued in this study despite the absence of dose limiting toxicity. Roxadustat was well tolerated without any safety concerns.

Significant, Dose Dependent Increases in Hb. As shown in the table below, the dose-dependent change in Hb from baseline in roxadustat patients was statistically significant from placebo by Day 8 ($p=0.025$) and remained so at each assessment through Week 6 ($p=0.0001$ at Day 22; $p<0.0001$ at Day 26–29/end of treatment).

A p-value is a statistical measure of the probability that the difference in two values could have occurred by chance. The smaller the p-value, the greater the statistical significance and confidence in the result. Typically, results are considered statistically significant if they have a p-value less than 0.05, meaning that there is less than a one-in-20 likelihood that the observed results occurred by chance. The FDA requires that sponsors demonstrate the effectiveness and safety of their product candidates through the conduct of adequate and well-controlled studies in order to obtain marketing approval. Typically, the FDA requires a p-value of less than 0.05 to establish the statistical significance of a clinical trial, although there are no laws or regulations requiring that clinical data be statistically significant, or that require a specific p-value, in order for the FDA to grant approval.

Hb Responses to a Range of Roxadustat Doses in FGCL-4592-017

		0.7 mg/kg		1 mg/kg		1.5 mg/kg		2 mg/kg	
	Placebo	BIW	TIW	BIW	TIW	BIW	TIW	BIW	TIW
N	23	10	12	5	5	10	11	9	11
Mean Maximum Change in Hb	0.44	0.82	1.22	1.12	0.81	1.74	2.03	1.93	2.16
Standard Error of the Mean	0.11	0.28	0.37	0.26	0.45	0.32	0.26	0.22	0.25
% Hb Responder	13%	30%	58%	60%	40%	80%	91%	100%	100%
Median Time to Response (Days)	NA	NA	26.5	42	NA	24.5	14	21	14

BIW = twice weekly; TIW = three times weekly

Standard error of the mean, or SE, is a statistical measure of the amount that an observed mean may be expected to differ by chance from the true mean. For a population that follows a normal distribution, 68% of observed means will be within one standard error of the mean.

Dose-Dependent Reduction in Hepcidin Levels. Roxadustat reduced serum hepcidin levels in a dose-dependent fashion.

Study 041: Study for Optimization of Starting Dose and Dose Titration in NDD-CKD Patients

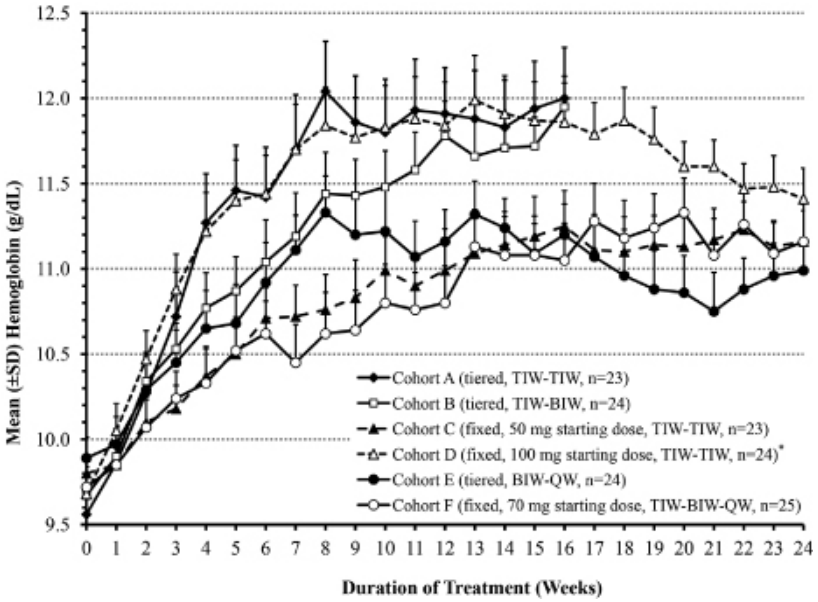
Study 041 demonstrated that both tier-weight and fixed starting doses can initiate anemia correction. In tier-weight based dosing for this study, we used starting doses based on the patient's body weight category: high, middle or low. This randomized, open-label Phase 2 study was designed to evaluate the efficacy and safety of roxadustat over 16 to 24 weeks in 145 NDD-CKD patients (of which 143 were efficacy evaluable), and to

evaluate the effects of dosing regimens in order to determine an optimized approach to anemia correction. In this trial, we tested six different starting dose regimens: three fixed doses, and three tier-weight doses. In fixed dosing, all patients in the same cohort were given the same starting dose.

We tested both three times weekly and twice weekly dosing frequencies for anemia correction, similar to Study 017, and further demonstrated that Hb levels can be maintained using 3 dosing frequencies (three times weekly, twice weekly and weekly) once target Hb ³ 11 g/dL was achieved. We also studied various dose adjustment rules, with dose adjustment decisions made from 5 weeks onward, and every 4 weeks thereafter, to seek the best dose titration scheme.

Hb Correction. We met the primary efficacy endpoint of cumulative number (%) of patients with a Hb response, defined as an increase in Hb ³ 1.0 g/dL from baseline and Hb ³ 11.0 g/dL at the end of treatment. Regardless of the starting dose or dose titration scheme, 92% of patients collectively from all cohorts achieved an Hb increase of at least 1 g/dL from baseline. These data suggest the doses studied are of adequate range for anemia correction. The following figure shows mean Hb levels for the six dose groups.

FGCL-4592-041 Hb Response Over Various Dosing Regimens

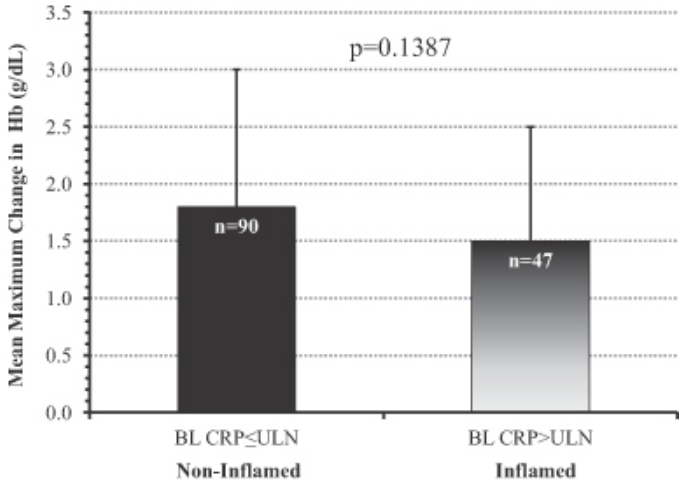


*** n at baseline**

TIW = three times weekly; BIW = twice weekly; QW= once weekly

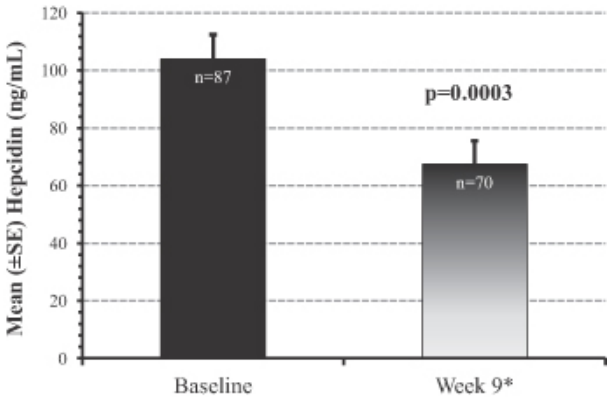
Hb Correction was Independent of Inflammation Status. In this study, in a post-hoc analysis, we observed that the magnitude of increases in Hb in response to roxadustat treatment was comparable for both patients with inflammation (elevated CRP levels) and without inflammation (normal CRP levels).

FGCL-4592-041 Mean (± SE) Maximum Change in Hb (g/dL) in 12 Weeks



This stands in contrast to treatments with ESAs, where elevated CRP is frequently associated with lower Hb response to ESAs. We observed a 30% reduction in mean hepcidin level from baseline with eight weeks of roxadustat treatment (p=0.0003), which supports our belief in roxadustat's ability to overcome inflammation and to maintain iron availability for erythropoiesis.

FGCL-4592-041 Mean (± SE) Serum Hepcidin Level (ng/mL)



Hb Correction Without IV Iron and in Patients Who Have Low Iron Levels at Study Initiation. In connection with the conduct of the study, we also evaluated several iron parameters to assess roxadustat's ability to improve Hb without the use of IV iron. At baseline, 49% of the efficacy evaluable patients did not have sufficient iron levels in the body to qualify for initiation of ESA treatment under current practice guidelines and would have been excluded from participation in all prior ESA Phase 3 trials. These patients would not be considered iron replete and are

typically first treated with IV iron prior to ESA treatment initiation in an effort to ensure an adequate response to ESA and to minimize the risk of iron depletion. Of all patients in this study receiving roxadustat, only 38% were taking oral iron supplements. A mean Hb increase of 1.8 g/dL was achieved in the first 16 weeks of treatment without IV iron supplementation. There was no evidence for iron depletion as CHr, reticulocyte hemoglobin content or the amount of Hb in newly formed red blood cells, was maintained. Furthermore, there was evidence for improved iron utilization with increases in the MCV and increase in mean corpuscular hemoglobin concentration (MCHC) over the first 16 weeks of treatment with roxadustat from baseline ($p=0.0018$ and $p<0.0001$, respectively); both MCV and MCHC typically decrease when there is iron deficiency.

Despite the minimal use of oral iron and lack of IV iron usage, patients who were not iron replete had similar Hb responses at Week 16 as patients who were iron replete.

Reduction in Cholesterol Levels. In a post-hoc analysis of all cohorts, total cholesterol decreased during treatment with roxadustat. Mean reductions in total cholesterol were greater for patients with abnormally high cholesterol levels (> 200mg/dL). Decreases in cholesterol levels were independent of whether patients were taking statins or other lipid lowering agents. Furthermore, the HDL/LDL ratio improved with roxadustat treatment in the subgroup of patients in whom lipid profiles were conducted.

Improvement in Quality of Life. Finally, in an analysis of exploratory endpoints we observed improved quality of life in patients treated with roxadustat using a standard questionnaire called the SF-36 HRQOL. The largest positive changes from baseline occurred in the Vitality subscale (>4 points, $p<0.0001$) and Physical Component (>1.6 points, $p<0.005$) subscales of the questionnaire. We believe these data demonstrate that by correcting patients' anemia, roxadustat may improve quality of life.

Study 040: ESA Conversion Study in DD-CKD Patients

Study 040 was designed to evaluate the short- and long-term dosing of roxadustat in patients on hemodialysis, or HD, treatment. These results established a conversion dose relationship between ESAs and roxadustat that will be used for Phase 3 trials. Roxadustat maintained Hb without the use of IV iron, which is generally required for the treatment of anemia by ESAs.

This randomized, single-blind study was the first roxadustat study in patients on HD treatment. Part 1 was a six week open-label Phase 2 dose ranging study in 54 patients (of which 42 were efficacy evaluable) to evaluate the impact of 4 sequential doses of roxadustat on dialysis patients' Hb levels over six weeks upon switching from epoetin alfa, in comparison to those continuing prior epoetin alfa doses. Part 2 was a 19 week treatment study in 90 patients (of which 83 were efficacy evaluable) to establish optimal conversion doses and dose adjustments. Patients included had previously demonstrated a wide range of ESA-responsiveness. Study 040 met its primary endpoint in Part 1 of maintaining Hb in patients previously treated with epoetin alfa at Week 6, indicating that roxadustat can replace ESAs in DD-CKD. Study 040 also met its primary endpoint in Part 2 of maintaining Hb at Week 19, indicating that roxadustat may be effective at long-term maintenance of Hb. IV iron was prohibited in both roxadustat treated patients and ESA treated control patients during this study.

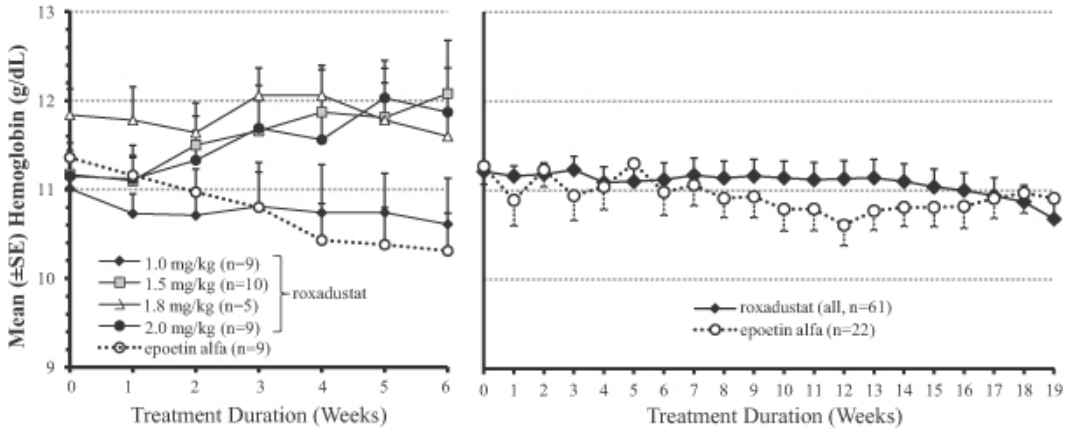
Maintenance of Hb Levels Following Conversion from ESAs. In Part 1 of this study (six week treatment), 41 patients were randomized to one of four roxadustat dose cohorts, and 13 were randomized to continue on epoetin alfa treatment. The primary endpoint was maintaining an Hb level equal to or above 0.5 g/dL below baseline Hb by the end of six weeks. As shown in the figure below, roxadustat had a dose-response effect for maintaining Hb levels. The lowest roxadustat dose cohort of 1.0 mg/kg was comparable to epoetin alfa with maintenance in 44% of roxadustat patients and 33% of the control arm, patients who continued treatment with epoetin alfa (but who were required to stop concomitant treatment with IV iron). Roxadustat doses of 1.5 mg/kg or higher were better than epoetin alfa at maintaining Hb, with 79.2% overall maintenance and with 80% maintenance at the 1.5 mg/kg roxadustat dose, 80% maintenance at the 1.8 mg/kg roxadustat dose and 77.8% maintenance at 2 mg/kg roxadustat dose.

In Part 2 of the study (19 week treatment), 67 patients (with baseline ESA dose requirements ranging from 7 to 164.5 U/kg three times weekly) were randomized to seven cohorts of roxadustat (with various starting doses) and 23 patients were randomized to continue on epoetin alfa. Hb correction in the roxadustat treated patients pooled across all treatment cohorts was maintained over the 19 week treatment period and was comparable to epoetin alfa. The average roxadustat dose requirement for Hb maintenance was approximately 1.70 mg/kg three times weekly.

In Part 1, which was dose ranging, we observed an increase in Hb level at doses of 1.5 to 2.0 mg/kg TIW as shown in the figures below. In Part 2, which was to establish the optimal conversion dose, we observed similar Hb maintenance between roxadustat and epoetin alfa.

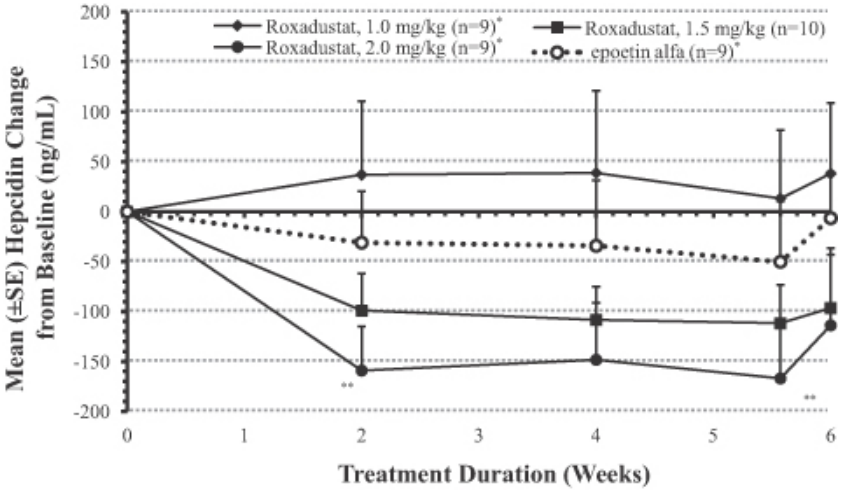
FGCL-4592-040 Mean: (± SE) Hemoglobin Over Time During Anemia Treatment with Roxadustat or Epoetin Alfa in Dialysis Patients

Part 1 (6 Weeks Dosing) **Part 2 (19 Weeks Dosing)**



In addition, in an exploratory analysis of this study we observed a dose dependent decrease in hepcidin in Part 1 of this study.

FGCL-4592-040: Change in Hepcidin Level from Baseline (ng/mL)

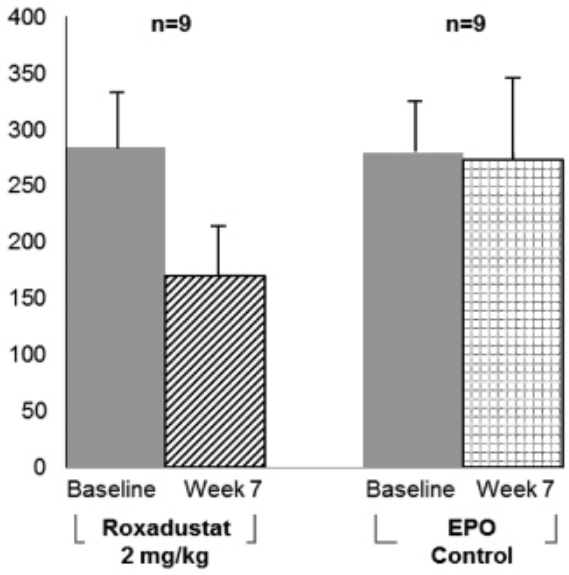


* n at baseline

** p<0.05 (comparing hepcidin change from baseline between the 2.0 mg/kg roxadustat group and the epoetin alfa group).

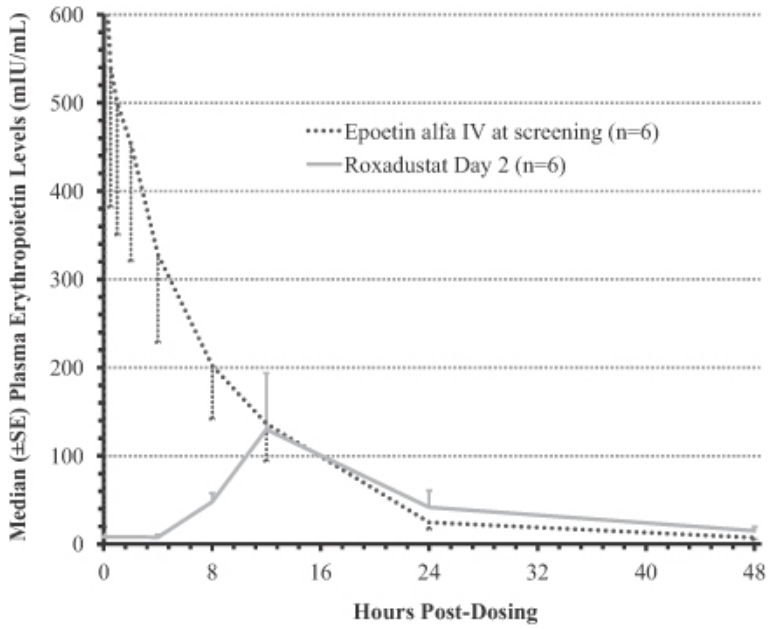
DD-CKD patients who switched from ESA treatment to treatment with 2.0 mg/kg roxadustat had significantly greater reduction in serum hepcin level than those who continued ESA treatment (p=0.038).

FGCL-4592-040 Mean (± SE) Serum Hepcidin Level (ng/mL)



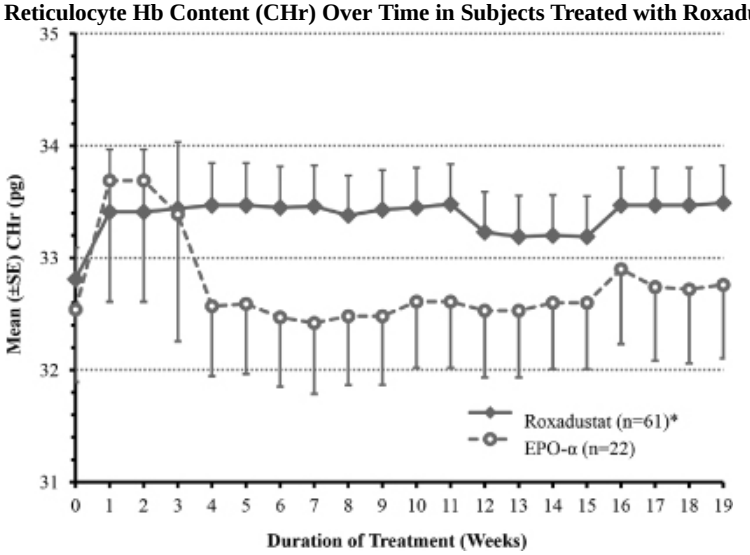
Roxadustat Doses are Associated with Lower Circulating EPO Levels than Epoetin Alfa. The following chart shows the result of six patients who were highly responsive to epoetin alfa and participated in a substudy in which their EPO levels during treatment with roxadustat were compared to EPO levels when the patients were receiving epoetin alfa prior to randomization. Their mean peak EPO concentration after an average dose of 44 U/kg was significantly higher when patients were receiving epoetin alfa relative to when they were receiving a mean roxadustat dose of 1.3 mg/kg as illustrated below. This observation is consistent with the mechanisms of action of ESA and roxadustat, respectively, and we believe the lower EPO exposure observed with roxadustat offers potential safety benefits.

FGCL-4592-040: Mean (+SE) Plasma Erythropoietin Levels During Treatment With Roxadustat Compared With Prior Epoetin Alfa Dosing In the Same Patients (n=6)



Maintenance of Adequate Iron Supply. The concentrations of Hb within newly formed red blood cells, or CHr, is a measure of iron availability for erythropoiesis. In an exploratory analysis of this study, without IV iron supplementation (which was prohibited in this study), CHr was maintained during roxadustat treatment but declined in patients who continued treatment with epoetin alfa. This finding indicates that unlike epoetin alfa, roxadustat allows endogenous stores of iron to provide an adequate supply to newly forming red blood cells without any IV iron supplementation.

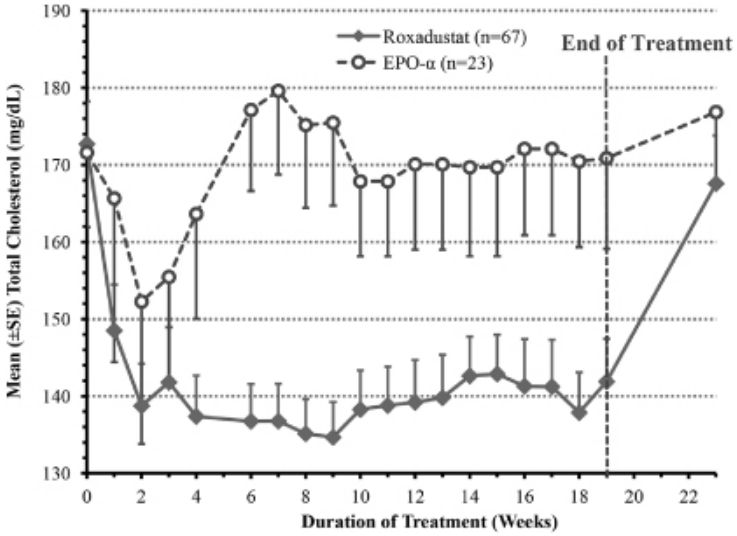
FGCL-4592-040: Mean Reticulocyte Hb Content (CHr) Over Time in Subjects Treated with Roxadustat and Epoetin Alfa



* n at baseline

Reduction in Total Cholesterol. Consistent with our Phase 2 studies in NDD-CKD patients, we observed in a post-hoc analysis that roxadustat reduced total cholesterol levels in stable dialysis patients, and this effect appeared durable throughout the 19 week treatment period as depicted below.

FGCL-4592-040: Mean (±SE) Total Cholesterol Over Time During Treatment of Dialysis Patients with Roxadustat or epoetin alfa-Treated



Study 053: Correction of Anemia in Incident Dialysis Patients

Incident dialysis patients are at increased risk of serious cardiovascular events and death as compared to stable dialysis patients. The mortality rate among dialysis patients is highest during the first few months of dialysis initiation, and on average, patients also require the highest doses of ESA in this period. These patients typically have high levels of systemic inflammation and require IV iron supplementation for ESA to be effective.

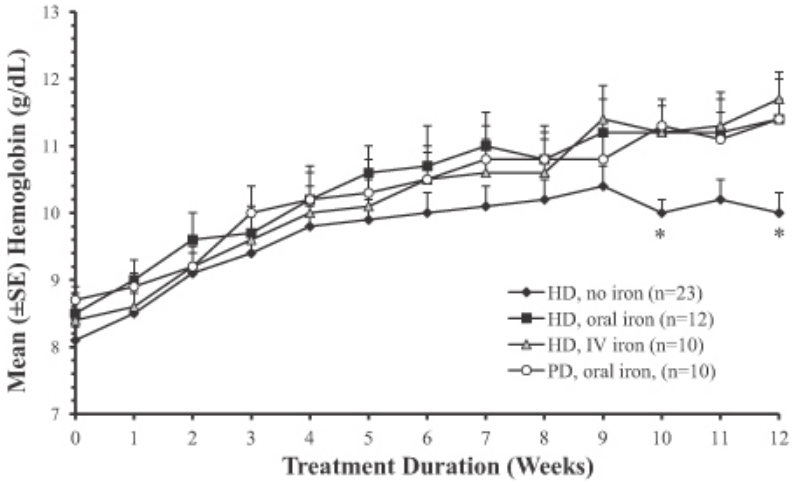
This randomized, open-label study was designed to evaluate the safety and efficacy of roxadustat for correction of anemia in 60 incident dialysis patients (of which 55 were efficacy evaluable) who were on dialysis for at least two weeks and not more than four months and had not been treated with ESAs, and to compare the treatment responses to roxadustat under the different iron supplementation conditions. All treatment groups in Study 053 met their primary endpoint in increasing Hb level during treatment: each cohort achieved maximum mean Hb increases from baseline, ranging between 2.8 g/dL to 3.5 g/dL, resulting from 12 weeks of roxadustat treatment. We observed that at week 12 in excess of 90% of the patients achieved a greater than 1 g/dL increase in Hb from baseline. In addition, while roxadustat corrected anemia without iron supplementation, oral iron enabled an optimal Hb response. More importantly, oral iron was as effective as IV iron for Hb correction by roxadustat. In contrast, ESA therapy requires IV iron supplementation in this patient population.

This study also showed that roxadustat can correct anemia regardless of the patient's level of inflammation as measured by CRP. At Week 12, the median weekly dose of roxadustat was 4.0 mg/kg in this trial of incident dialysis patients and is similar to the median weekly dose of 4.45 mg/kg at Week 12 in Study 040, our trial of roxadustat in stable dialysis patients. In contrast, ESA therapy typically involves higher doses at the time of dialysis initiation.

The 48 HD patients were randomized to one of the three iron supplementation options: oral iron, IV iron or no iron. Included in the 60 patients were 12 peritoneal dialysis, or PD, patients who received oral iron. This study incorporated the same tier-weight based dosing regimen utilized in Study 041.

Hb Correction in Incident Dialysis Patients Without IV Iron Administration. All three cohorts of roxadustat treated HD patients (no iron, oral iron or IV iron supplementation) and PD patients (oral iron) achieved a significant increase in the maximum Hb change from baseline, the primary efficacy endpoint. Most importantly, the maximum increase in Hb was not significantly different between roxadustat treated HD patients supplemented with oral iron (3.4 g/dL) and those supplemented with IV iron (3.5 g/dL). In contrast, a published study of ESAs in this patient population showed that patients supplemented with oral iron achieved a Hb response comparable to no iron supplementation and significantly lower Hb response than those supplemented with IV iron. These Phase 2 data demonstrate that roxadustat, unlike ESAs, may eliminate the need for IV iron and thus avoid the side effects of IV iron in DD-CKD patients.

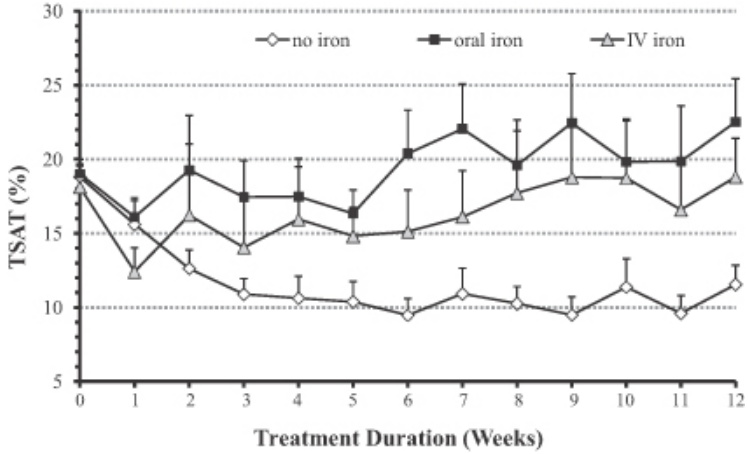
FGCL-4592-053: Hemoglobin Over Time During Anemia Correction with Roxadustat in Incident Dialysis Patients, with No Iron, Oral Iron, or IV Iron Supplementation



Note: Hb = hemoglobin; HD = hemodialysis; PD = peritoneal dialysis; n= number of patients
Note: *p<0.05 compared to IV iron and oral iron

Maintenance of Iron Stores. In an exploratory analysis of this study, transferrin saturation, or TSAT, a marker of iron stores, was well maintained during this period of intensive production of red blood cells with oral iron alone, indicating that iron stores can be maintained without IV iron.

FGCL-4592-053: TSAT Over Time During Anemia Correction With Roxadustat In Incident Dialysis Patients, With No Iron, Oral Iron, or IV Iron Supplementation



Hb Correction Independent of Inflammation Status. As is typical of incident dialysis patients, about half of all patients had elevated CRP levels at baseline. In a post-hoc analysis of this study, we observed that Hb responses following roxadustat treatment were independent of baseline CRP levels. These data demonstrate that, unlike the ESAs, roxadustat has the potential to overcome the suppressive effects of inflammation on Hb responsiveness to treatment.

Significant Reduction in Hepcidin. Consistent with our other studies, in an exploratory analysis of this study we observed that patients' hepcidin levels were significantly reduced, most notably in the no iron and oral iron cohorts, by ≥ 50% from baseline, and to a lesser extent in the IV iron cohort. At follow-up (4 weeks after stopping roxadustat), hepcidin levels returned towards baseline values. Hepcidin reduction may be one of the mechanisms for overcoming the Hb suppressive effects of inflammation by making iron more available for roxadustat-induced erythropoiesis.

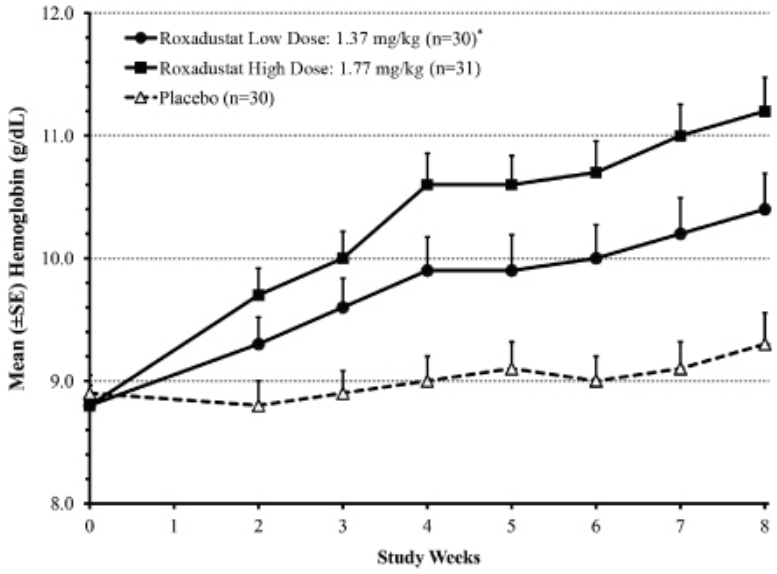
China Phase 2 Studies

In China, roxadustat is known as FG-4592. We performed two Phase 2 studies in China, one trial in NDD-CKD patients, and another trial in DD-CKD patients. In these trials, Hb correction in NDD-CKD patients and Hb maintenance in DD-CKD patients replicated the results seen in the US trials.

Study 047: 8 Week Placebo-Controlled NDD-CKD

In this multi-center, double-blind, placebo-controlled study, 91 anemic CKD patients were randomized 2:1 to roxadustat or placebo treatment groups, respectively, in two sequential dose cohorts or placebo. Iron repletion at baseline was not required and IV iron supplementation was prohibited during the trial; oral iron supplementation was allowed during the trial, similar to the corresponding US Study 041. The study used tier-weight starting dose for four weeks after which the roxadustat dose was adjusted, depending upon the initial response to treatment. Study 047 met its primary endpoint of a mean maximum increase from baseline Hb at the end of Week 8. The mean maximum Hb increases at the end of eight weeks of treatment were 1.6 g/dL and 2.4 g/dL in the low-dose and the high dose cohort, respectively, compared to 0.4 g/dL for placebo, $p < 0.0001$ for each cohort compared to placebo.

FGCL-4592-047: Hb Over Time (g/dL) in Chinese NDD-CKD Patients

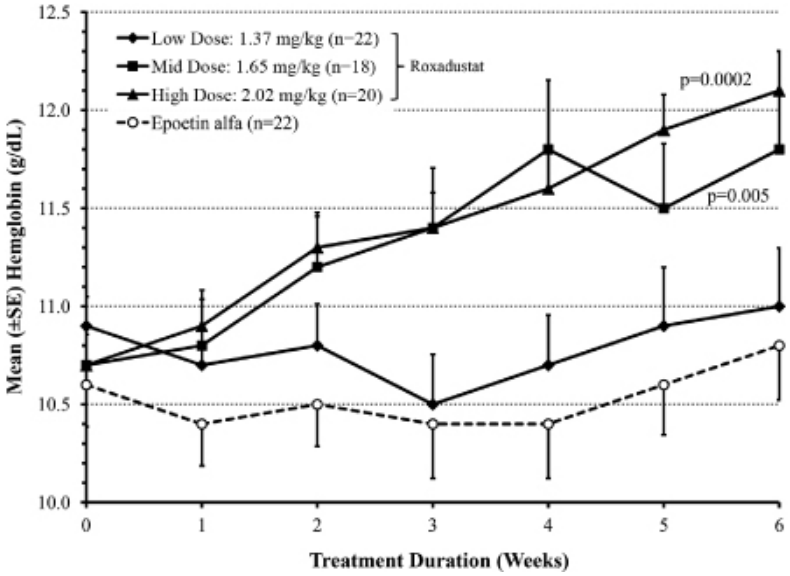


* n at baseline

Study 048: Stable Dialysis Conversion in China

In this multi-center, open-label, ESA-controlled study, 84 HD patients (of which 82 were efficacy evaluable) with Hb 9 to 12 g/dL previously maintained with ESAs were randomized 3:1 to roxadustat or epoetin alfa treatment groups, respectively, in three sequential dose cohorts of increasing starting doses of roxadustat. This study design was similar to Part 1 of Study 040. Study 048, an exploratory study, achieved its objective of number (%) of patients with successful dose conversion whose Hb levels are maintained at no lower than 0.5 g/dL below their mean baseline value at the end of Weeks 5 and 6 (59.1% for the low-dose, 88.9% for the mid-dose, and 100% for the high dose). The Hb responses to the roxadustat treatment of Chinese dialysis patients, with the low dose cohort were numerically similar to epoetin alfa, while the mid-dose and the high-dose cohorts each had a statistically significantly higher Hb response rate than epoetin alfa. Hb responses to the roxadustat treatment of Chinese dialysis patients (as shown in the figure below) were similar to Part 1 of Study 040 in the United States.

FGCL-4592-048: Hb Over Time in Chinese Stable Dialysis Patients



Safety Summary

As of October 22, 2014, 1,503 subjects have received roxadustat in our clinical development program, including 537 healthy volunteers and 966 CKD patients (both dialysis and non-dialysis). The longest treatment exposure (10 participants in an ongoing open-label extension study) is over 2 years. A range of roxadustat doses, up to 3.0 mg/kg in DD-CKD patients and up to 5.0 mg/kg in healthy volunteers, have been administered and all roxadustat doses have been well-tolerated. The following summarizes the safety findings of our preclinical, Phase 1 and Phase 2 studies:

- *No Overall Safety Signals.* An independent data monitoring committee consisting of external experts in nephrology, hepatology, and biostatistics reviewed safety data from all US and Europe Phase 2 studies, and determined there were no safety signals. The overall frequency and type of treatment-emergent adverse events and serious adverse events, or SAEs, observed in these clinical studies reflect events that would be expected to occur in each of the NDD-CKD and DD-CKD patient populations. Safety analyses did not reveal any association between the rates of occurrence of cardiovascular events with roxadustat dose, rate of Hb rise or Hb level. The SAEs experienced in our studies identified by the

principal investigator as possibly related to roxadustat were a stroke in a patient with a prior history of multiple strokes, one incident of vomiting, and one incident of deep venous thrombosis. The most commonly reported treatment emergent adverse events in the Phase 2 studies were diarrhea, nausea, urinary tract infection, nasopharyngitis, peripheral edema, hyperkalemia, headache, hypertension and upper respiratory tract infection.

Of our completed Phase 2 clinical studies, four (Studies 017, 047, 040 and 048) were controlled, two with placebo and two with ESA.

For Study 017, which had a treatment period of 4 weeks, for 88 subjects on roxadustat, and 28 subjects on placebo, we observed treatment emergent SAEs, or TSAEs, in 4 patients (4.5%) on roxadustat, with 0 cardiovascular SAEs and 0 SAEs for the composite safety endpoint. There were also TSAEs in 1 patient (3.6%) in the placebo arm of the study, including 1 cardiovascular SAE and 0 SAEs for the composite safety endpoint. The composite safety endpoint (exploratory analysis) includes death, myocardial infarction, congestive heart failure, subendocardial ischaemia, cerebrovascular accident, thrombosis (fistula), arteriovenous fistula occlusion, angina pectoris, and vascular graft thrombosis. A patient may experience more than one SAE, in which case a patient is only counted once in this analysis. TSAEs observed in patients treated with roxadustat were arteriovenous fistula site complications, dyspnea, femoral neck fracture and non-cardiac chest pain. SAEs observed in patients treated with placebo were acute renal failure and pericarditis.

For Study 047, which had a treatment period of 8 weeks, for 61 subjects on roxadustat, and 30 subjects on placebo, we observed TSAEs in 8 patients on roxadustat (13.1%), with 0 cardiovascular SAEs, and 0 SAEs for the composite safety endpoint, and TSAEs in 4 patients on placebo (13.3%), including 1 cardiovascular SAE (3.3%), and 1 SAE (3.3%) for the composite safety endpoint. TSAEs observed in patients treated with roxadustat were chronic renal failure (4), upper respiratory tract infection (1), hyperkalaemia (2) and urinary tract infection (1). TSAEs observed in patients treated with placebo were unstable angina (1), anemia (1), retinal detachment (1), pneumonia (1) and gastritis (1).

For Study 040, which had a treatment period of 19 weeks, for 66 subjects on roxadustat, and 23 subjects on ESAs, we observed TSAEs in 15 patients on roxadustat (22.7%), including 1 cardiovascular SAEs (1.5%), and 8 SAEs for the composite safety endpoint (12.1%), and TSAEs in 4 patients on ESAs (17.4%), including 2 cardiovascular SAEs (8.7%), and 4 SAEs (17.4%) for the composite safety endpoint. TSAEs categorized by System Organ Class, a standard event classification, observed in patients treated with roxadustat were infections and infestations (5), metabolism and nutrition disorders (2), cardiac disorders (1), gastrointestinal disorders (1), nervous system disorders (2), respiratory, thoracic and mediastinal disorders (2), skin and subcutaneous tissue disorders (1), injury, poisoning and procedural complications (2), and psychiatric disorders (1). TSAEs categorized by System Organ Class observed in patients treated with ESA were infections and infestations (3), metabolism and nutrition disorders (3), cardiac disorders (1), respiratory, thoracic and mediastinal disorders (1), blood and lymphatic system disorders (1) and vascular disorders (1).

For Study 048 which had a treatment period of 6 weeks, for 74 subjects on roxadustat, and 22 subjects on ESAs, we observed 0 TSAEs in patients on roxadustat, including cardiovascular SAEs and for the composite safety endpoint. There were also 0 TSAEs in the patients taking ESAs.

The differences in the SAE percentages described are not considered statistically significant.

The three SAEs described above that were considered by the principal investigator to be possibly related to roxadustat did not occur in these four studies.

- *No Liver Enzyme Safety Signal.* Liver enzymes were monitored closely in the roxadustat Phase 2 clinical development program. No evidence of hepatotoxicity was observed in any of the roxadustat clinical trials, and the independent data monitoring committee concluded that there was no concern for

hepatotoxicity to date. Liver enzymes are being monitored in Phase 3 according to current FDA guidelines, without any special requirements.

- *Extensive Evaluation of Cancer Risk.* Furthermore, to assess the potential cancer risk of roxadustat, we conducted 12 tumor studies in rodents. These studies included xenograft, syngeneic, or spontaneous tumors of lung, colon, breast, pancreas, melanoma, ovarian, renal, prostate and leukemic origin, several of which are reported to be dependent on vascular endothelial growth factor, or VEGF, a protein that can be regulated by HIF for which increased levels have potentially been linked to increased tumor growth. No effect on tumor promotion was observed with roxadustat in any of the studies. In addition, roxadustat had no effect on tumor initiation or metastasis in the studies in which these end-points were also measured. Five other HIF-PH inhibitors from our library have been evaluated in many of the same rodent tumor models as roxadustat, as well as some additional ones (35 studies of six HIF-PH inhibitors in 18 models total), with no observed effect on tumor initiation, promotion or metastasis. Finally, no significant increases in plasma VEGF levels have been observed in any of our nonclinical studies at clinically relevant erythropoietic doses of roxadustat.

  Results from two-year rat and mouse carcinogenicity studies with roxadustat have been completed. Roxadustat treatment had no adverse effect on survival and did not cause carcinogenic effects in either species. Final reports are expected in the fourth quarter of 2014 or early 2015. Two-year rodent carcinogenicity studies that were conducted with one of the other HIF-PH inhibitors evaluated in the tumor models showed no effect on mortality or incidence of tumors.

  In clinical studies to date, we and our independent data monitoring committee have not identified any evidence to suggest tumor risk in the use of roxadustat.

- *No QT Prolongation.* We conducted a Thorough QT study evaluating roxadustat doses up to 5 mg/kg (approximately four times the average maintenance dose studied in the NDD-CKD patient population). A lengthened QT interval is a biomarker for certain ventricular arrhythmias and a risk factor for sudden death. Our results demonstrate that roxadustat did not affect the QT interval in this study. Based on the extensive safety data collected to date, we believe that roxadustat has a favorable safety profile that supports its further development in Phase 3 clinical studies.

Our Global Phase 3 Program for Roxadustat

In support of our initial efforts for regulatory approval in the United States and Europe, we have initiated with our partners our global Phase 3 clinical program for roxadustat in North America, South America, Europe and Asia Pacific, with plans for expanding to other regions. As of October 22, 2014, there have been approximately 436 patients enrolled in this Phase 3 clinical program. FibroGen China will begin a separate Phase 3 program in China in the first half of 2015, and Astellas is responsible for Phase 3 studies upon completion of Phase 2 studies in Japan. Roxadustat is the first HIF-PH inhibitor to enter Phase 3 clinical trials. We believe that our ongoing global Phase 3 program will be the largest Phase 3 program ever conducted for an anemia agent. This broad Phase 3 program is designed to meet regulatory approval requirements of multiple regions, and is being jointly implemented with our partners, Astellas and AstraZeneca. The below chart summarizes our ongoing and planned Phase 3 clinical trials, all of which include Hb level maintenance as a study objective once correction or conversion is achieved.

Ongoing and Planned Roxadustat Phase 3 Clinical Trials

	Study Number, Enrollment Start Date for Ongoing Trials	Company Sponsor	Dose Frequencies for Ongoing Trials	Comparator	Estimated # of Patients to be Enrolled	Random-ization	Study Objective
United States and Europe Trials							
NON-DIALYSIS							
	FGCL-4592-060, November 2012	FibroGen	TIW, BIW, QW	Placebo	Up to 600	2:1	Correction
	1517- CL-0608, October 2013	Astellas	TIW, BIW, QW	Placebo	450 to 600	2:1	Correction
	D5740C00001, July 2014	AstraZeneca	TIW	Placebo	2,600	1:1	Correction
	1517-CL-0610, April 2014	Astellas	TIW, BIW, QW	Darbepoetin alfa	570	2:1	Correction
				NDD-CKD Sub Total	**4,000 to 4,500**		
	DIALYSIS						
				Stable and Incident Dialysis			
*	FGCL-4592-063, February 2014	FibroGen	TIW	Epoetin alfa	Up to 750	1:1	Correction
	1517- CL-0613	Astellas	TIW	Epoetin alfa or Darbepoetin alfa	750	376:200:174	Conversion
	FGCL-4592-064	FibroGen	TIW	Epoetin alfa	750	1:1	Conversion
*	D5740C00002, July 2014	AstraZeneca	TIW	Epoetin alfa	1,425	1:1	Correction & Conversion
				DD-CKD Sub Total	**3,000 to 3,700**		
				NDD and DD-CKD Total for the U.S. and EU	**7,000 to 8,000**		
				China Trials			
Non- Dialysis							
	FGCL-4592-808	FibroGen	TIW	Placebo	150	2:1	Correction
Stable Dialysis							
	FGCL-4592-806	FibroGen	TIW	Epoetin alfa	300	2:1	Correction & Conversion
				China Total	**450****		

TIW = three times weekly; BIW = twice weekly; QW = weekly

* Study ‘063 consists of only incident dialysis patients, Study ‘002 consists of both incident dialysis patients and conversion of stable dialysis patients. All other dialysis studies consist of only conversion of stable dialysis patients.

** Mandatory post-approval safety study of approximately 2,000 patients expected to be required in China.

The below chart summarizes the planned and ongoing Phase 3 clinical trials by regulatory approval region, emphasizing the differences in estimated patients enrolled, minimum and average treatment durations, and resulting “patient years” (the product of estimated number of patients and average patient treatment duration). The studies supporting both U.S. and EU approval have extended treatment durations in the U.S. (52+ weeks) as compared with the EU (36+ weeks).

Regional Differences in Estimated Approval Requirements
Roxadustat Phase 3 Clinical Trials

	Study Sponsor	Study Number	Estimated # of Patients to be Enrolled		
			United States	Europe	China
Non-Dialysis					
	FibroGen	FGCL-4592-060	Up to 600*	Up to 600*	
	Astellas	1517-CL-0608	450-600*	450-600*	
	AstraZeneca	D5740C00001	2,600		
	Astellas	1517-CL-0610		570	
	FibroGen	FGCL-4592-808			150
NDD-CKD Sub Total by Region			Up to 3,800	Up to 1,770	150
Stable and Incident Dialysis					
	FibroGen	FGCL-4592-063**	Up to 750*	Up to 750*	
	Astellas	1517-CL-0613	750*	750*	
	FibroGen	FGCL-4592-064	750*	750*	
	AstraZeneca	D5740C00002**	1,425		
	FibroGen	FGCL-4592-806			300
DD-CKD Sub Total by Region			Up to 3,675	Up to 2,250	300
Total by Approval Region			**~7,500**	**~4,000**	**450*** **
Combined U.S. and EU total			**~7,000 – 8,000**		
Minimum Treatment Duration			52 Weeks	36 Weeks	26-52 Weeks
Average Patient Treatment Duration			~1.3-1.5 years	~1 year	~32 Weeks****
Patient Years by Approval Region			**~10,000+**	**~4,000**	**~275**
Estimated Time to Complete Patient Enrollment			1H 2016		2H 2015

* Same patients used for U.S. approval and Europe approval, with extended treatment durations for U.S. approval.
** Study ‘063 consists of only incident dialysis patients, Study ‘002 consists of both incident dialysis patients and conversion of stable dialysis patients. All other dialysis studies consist of only conversion of stable dialysis patients.
*** Mandatory post-approval safety study of approximately 2,000 patients expected to be required in China.
**** 350 patients will be treated for a minimum of 26 weeks and 100 patients will be treated for a minimum of 52 weeks.

To maximize the commercial potential for roxadustat, we have incorporated several unique elements into our Phase 3 program. We are performing the first placebo-controlled Phase 3 studies in NDD-CKD patients to potentially demonstrate the benefits of anemia therapy and safety of roxadustat compared to placebo. We are also performing the largest Phase 3 study in incident dialysis anemia patients, who have the highest risk for death, and are the most difficult patients to stabilize and treat for anemia in CKD. Based on data from our Phase 2 studies, we believe that roxadustat may offer a safer alternative to ESAs for this particularly vulnerable patient population. We are also evaluating the cardiovascular safety of roxadustat compared to placebo in NDD-CKD patients to first demonstrate a lack of increased risk to qualify for marketing approval by the FDA, and in these patients we will have an opportunity to measure improvements in patient outcomes with anemia therapy. Separately, we are evaluating cardiovascular safety of roxadustat compared to ESA in DD-CKD patients.

Primary and Secondary Endpoints of Our Phase 3 Program

With our partners, we have designed our Phase 3 studies to evaluate the following endpoints, most of which were evaluated in our Phase 2 studies.

- Primary efficacy endpoints for anemia correction studies:
  - U.S.: Hb change from baseline to the average Hb level during weeks 28-52.
  - EU: Cumulative % patients with Hb response by week 24. Hb response is defined as Hb of 11 g/dL and an increase of at least 1 g/dL from baseline.
- Primary efficacy endpoints for conversion and maintenance studies:
  - U.S.: Hb change from baseline to the average Hb level during weeks 28-52.
  - EU: Hb change from baseline to the average Hb level during weeks 28-36.
- The primary safety endpoints for U.S. approval will be major adverse cardiac events, commonly referred to as MACE, which is a composite endpoint designed to identify major safety concerns, in particular relating to cardiovascular events such as cardiovascular death, myocardial infarction and stroke, and will be pooled across multiple studies and evaluated separately in our NDD-CKD trials and our DD-CKD trials.
- We expect that our Phase 3 clinical trials supporting approval in Europe will be required to include MACE+ as a safety endpoint which, in addition to the MACE endpoints, also incorporates measurements of hospitalization rates due to heart failure or unstable angina.
- We also plan to evaluate secondary endpoints, including the following:
  - IV iron usage in roxadustat-treated patients relative to ESA-treated patients with DD-CKD.
  - Red blood cell transfusion rate in roxadustat-treated relative to placebo treated patients with NDD-CKD.
  - Hypertension adverse events in roxadustat-treated patients relative to ESA-treated patients with DD-CKD, and blood pressure in roxadustat-treated patients relative to placebo-treated patients with NDD-CKD.
  - Total cholesterol, LDL-cholesterol and VLDL-cholesterol levels in roxadustat-treated patients relative to placebo-treated patients with NDD-CKD and relative to ESA-treated patients in all three anemic CKD patient populations.
  - Quality of life in roxadustat-treated patients relative to placebo-treated patients with NDD-CKD.
  - CKD progression in roxadustat-treated patients relative to placebo-treated patients with NDD-CKD.
  - Hospitalization rate in roxadustat-treated patients relative to placebo-treated patients with NDD-CKD and relative to ESA-treated patients in all three anemic CKD patient populations.
  - Rate of vascular access thrombosis in roxadustat-treated patients relative to ESA-treated patients in DD-CKD.

Dosing Regimen

Our Phase 3 studies incorporate dosing regimens that were extensively tested in our six Phase 2 studies.

- *Identified Dosing Regimen.* The dosing regimens for our Phase 3 studies are designed to achieve an appropriate rate and magnitude of Hb rise. In our Phase 2 studies, we explored ranges of therapeutic doses under several dosing regimens, including both tier-weight and fixed starting doses and conversion doses. Our Phase 3 program will use two tier-weight starting doses for ESA-naive patients

(70 mg for patients between 45 and 70 kg and 100 mg for patients between 70 and 160 kg). Our Phase 3 dosing strategies are based on our understanding of effective approaches, derived from our Phase 2 studies, tested in modeling and simulation, and were designed to achieve Hb correction for patients with varying dose requirements in a manner that is optimal for both patients and physicians.

- *Dose Titration.* Our Phase 3 program will use a pre-determined sequence of dose steps to titrate to a patient's particular response to roxadustat, which we found to be simple to use and sufficient to correct anemia in our Phase 2 studies. In our Phase 2 anemia correction studies, only one or two cycles of dose titration were necessary to achieve Hb correction in at least 80% of patients on average.
- *Dose Frequency.* In preclinical and Phase 1 studies, we observed that intermittent dosing yielded optimal responses to roxadustat. Our Phase 2 studies indicated that three times weekly, twice weekly and weekly dosing regimens achieved Hb maintenance. Our Phase 3 program will dose three times weekly for all studies except two (060 and 0608) which will dose some patients twice per week and some patients once per week. We believe that intermittent dosing may help ensure a consistent and durable treatment effect, and avoid the loss of effect that may be associated with more frequent dosing.
- *Dose Conversion for Dialysis Patients Previously Treated with ESAs.* In our Phase 2 conversion studies, we tested a variety of starting doses and developed a mathematical relationship between baseline ESA dose and roxadustat dose required to maintain Hb levels. We use dose conversion tables derived from these Phase 2 studies to formulate starting roxadustat doses in our Phase 3 trials for patients who switch to roxadustat from ESAs.

Our Phase 2 studies indicated that this dosing regimen enabled anemia correction up to 24 weeks and Hb maintenance up to 19 weeks when converting a patient from ESA.

Clinical Trial Eligibility, Iron Status, and Iron Supplementation During Treatment

Unlike ESA clinical trials where patient study eligibility criteria included a requirement of adequate iron availability (measured by ferritin ³ 100 ng/mL and TSAT ³ 20%) and encouraged IV iron use, roxadustat Phase 2 studies included anemic NDD-CKD patients with ferritin ³ 30 ng/mL and TSAT³ 5% and anemic DD-CKD patients with ferritin ³ 50 ng/mL and TSAT ³10%, which permits the inclusion of patients who are iron deficient. Hemoglobin response was generally achieved in iron deficient NDD-CKD and DD-CKD patients (ferritin <100 ng/mL and TSAT< 20%) despite the fact that IV iron was not allowed during roxadustat treatment.

Our placebo-controlled Phase 3 NDD-CKD studies will use iron eligibility criteria employed in our Phase 2 studies, allow oral iron, but prohibit the use of IV iron (except as a rescue medication). In our Phase 3 DD-CKD studies, since ESA serves as the comparator and similar treatment conditions are required for roxadustat and ESA, study eligibility criteria include ferritin ³ 100 ng/mL and TSAT ³ 20%. Patients will be randomized to roxadustat or ESA, and will be encouraged to take oral iron as a first line supplemental agent. IV iron is permitted if there is inadequate Hb response to treatment and if the patient is iron deficient (ferritin <100 ng/mL and TSAT< 20%).

Status with Regulatory Agencies

In the last two years, we and our collaboration partners have had interactions with regulatory agencies in multiple territories regarding the planned development and potential path to approval of roxadustat.

Most recently, we met with the FDA in May, June and July of 2014 to discuss the overall scope of our Phase 3 development program. In order to comply with FDA's recommendation, we have designed and sized our Phase 3 program for, and will incorporate MACE composite safety endpoints that we believe will be required for approval in the United States for all new anemia therapies.

We have also discussed our Phase 3 clinical development program with three National Health Authorities in the EU and obtained Scientific Advice from the European Medicines Agency, which was confirmed in writing in January 2014 with respect to the adequacy of our current clinical development program to support the indication for the treatment of anemia in NDD-CKD and DD-CKD patients. We expect the MAA submission in Europe to precede our NDA filing in the United States.

Investigational New Drug and Clinical Trial Applications

Roxadustat is being studied under one Investigational New Drug Application, or IND, and several Clinical Trial Applications, or CTAs, all with a specified indication of treatment of anemia in CKD. We submitted the IND in the United States to the FDA in April 2006. Our collaboration partner, Astellas, submitted the CTA in Japan to the Pharmaceuticals and Medical Devices Agency in June 2009. We and Astellas have submitted CTAs in Europe to the EMA, beginning in 2013.

Opportunities in Other Anemia Indications

Based on roxadustat's safety and efficacy profile to date and other potential advantages over ESAs, we believe that in addition to treating anemia in CKD, roxadustat has the potential to treat anemia associated with many other conditions, such as chemotherapy-induced anemia, anemia related to inflammatory diseases, MDS and surgical procedure requiring transfusions. We think that roxadustat, if successful, could potentially address the significant unmet need in these anemia markets.

HIF-PH Inhibitor Platform

We have been a world leader in prolyl hydroxylase inhibition since the mid-nineties. Over the past two decades, we have built a robust drug discovery platform based on our deep understanding of the inhibition of prolyl hydroxylase enzymes using small molecules. Our platform is supported not only by internal research but also by numerous academic collaborations, including a long-standing funded collaboration with a research group at the University of Oulu, Finland, headed for many years by our scientific co-founder, Dr. Kari I. Kivirikko. Dr. Kivirikko is one of the world's leading experts in collagen prolyl hydroxylases, and he remains an advisor to us.

Prior to the discovery of HIF regulation by prolyl hydroxylase activity, we had acquired compound collections from several pharmaceutical companies and assembled a diverse library of prolyl hydroxylase inhibitors to target collagen prolyl hydroxylase enzymes for fibrosis. Consequently, we were particularly well positioned to rapidly generate proof-of-concept for a number of aspects of HIF biology, and to direct medicinal chemistry efforts towards increasing potency and selectivity for the newly identified HIF-PH enzymes.

We have applied our expertise in the field of HIF-PH inhibition to develop an understanding, not only of the role of HIF in erythropoiesis, but also of other areas of HIF biology with important therapeutic implications. This consistent progression of discovery has led to findings relating to HIF-mediated effects associated with inflammatory pathways, various aspects of iron metabolism, insulin sensitivity and glucose and fat metabolism, neurological disease, and stroke. The extensive patent portfolio covering our discoveries represents an important competitive advantage.

The strength of our platform capitalizes on these internal discoveries, as well as some of the complexities of HIF biology that we and the scientific community have uncovered over the past decade. There are at least three different HIF-PH enzymes that are known to regulate the stability of HIF—these enzymes are commonly referred to in the scientific literature as PHD1, PHD2 and PHD3. Studies of genetically modified mice, in which the individual HIF-PH enzymes have been deleted, have revealed that PHD2 plays a major role in the regulation of erythropoiesis by HIF. In contrast, PHD1 and PHD3 appear to play less important roles in HIF-mediated erythropoiesis, but instead have been implicated in other important biological pathways.

We believe that inhibitors selectively targeting PHD1 or PHD3 could have important therapeutic applications beyond anemia. For example, as PHD1 has been implicated in ischemic tissue injury, it has been proposed that PHD1 inhibitors may provide a novel therapeutic approach to protect organs and tissues from ischemic damage. PHD3 on the other hand has been implicated in insulin signaling, raising the possibility that PHD3 inhibitors may have therapeutic utility in the treatment of diabetes. Despite the challenges associated with selectively inhibiting just one enzyme from a closely related family, we have made important advances in the identification of selective HIF-PH inhibitors. We currently have active research programs focused on exploring the therapeutic utility of PHD1 selective inhibitors and PHD3 selective inhibitors. A lead candidate from our PHD1 inhibitor program, FG-8205, is currently in preclinical evaluation for use as a cardioprotective agent to prevent the onset of heart failure following a heart attack.

In addition, FG-6874, another novel HIF-PH inhibitor selected from our proprietary compound library, has recently completed Phase 1 single dose and multiple dose studies in which it was found to be well tolerated. We are planning on exploring FG-6874 for hematopoietic stem cell mobilization and certain other indications.

In September 2011, we submitted a CTA in Singapore for our HIF-PH inhibitor FG-6874; however, no indication was specified under this CTA as it was for a Phase 1 trial. While we have other HIF-PH inhibitors in preclinical evaluation, such as FG-8205, we have not submitted any INDs or CTAs with respect to such compounds at this time.

ROXADUSTAT FOR THE TREATMENT OF ANEMIA IN CHRONIC KIDNEY DISEASE IN CHINA

We believe there is a particularly significant unmet medical need for the treatment of anemia in CKD in China. Specifically, anemia is undertreated in the rapidly growing number of dialysis stage patients and anemia is not treated in non-dialysis patients including patients who are eligible for dialysis but are not treated due to a shortage of dialysis facilities, and cannot easily obtain anemia treatment outside of the dialysis system. In the context of the rapidly growing Chinese pharmaceutical market, we believe that the demand for anemia therapy will continue to grow as a result of an expanding CKD population, as well as the central government's mandate to make dialysis, which is still in the early stages of infrastructure development, more available through expansion of government reimbursement and build-out of dialysis facilities. We believe that roxadustat is a particularly promising product candidate for this market.

Addressable Patient Populations in China

Based on a cross-sectional survey performed between September 2009 and September 2010 published in the *Lancet* (Zhang, et al. *Lancet* (2012)), there are an estimated 119.5 million CKD patients in China. There were approximately 19 million patients in CKD stage 3, stage 4 and stage 5 which we have grouped into three categories: dialysis dependent CKD patients, or DD-CKD; Dialysis Eligible patients who need dialysis under treatment guidelines but are not dialyzed, or Dialysis Eligible NDD-CKD; and stages 3 and 4 patients as well as stage 5 patients who are not eligible for dialysis, or Other NDD-CKD.

DD-CKD (Dialysis)

Dialysis can be delivered in the form of hemodialysis, or HD, or peritoneal dialysis, or PD. In China, HD is mostly performed at dialysis clinics within hospitals, not at freestanding dialysis centers outside of hospitals which is the common practice in the United States. PD is self-administered at home by patients, and they visit their nephrologists on a monthly basis at the hospital for monitoring and follow-up.

Dialysis Eligible NDD-CKD

Dialysis Eligible NDD-CKD refers to patients who need dialysis under Chinese treatment guidelines but are not dialyzed. The Chinese treatment guidelines recommend initiation of dialysis at eGFR<10 mL/min/1.73 m^2 (and eGFR<15 mL/min/1.73m^2 for diabetic nephropathy patients). The Minister of Health estimated that one to two

million people in China were eligible for dialysis in 2011, and of those we believe that only 300,000 to 400,000 are on dialysis. While the size of dialysis population is large and approaches that of the United States, it nevertheless falls far short of the number who require dialysis treatment. We believe that this Dialysis Eligible NDD-CKD population is characteristic of developing markets like China and is at risk for severe anemia.

Other NDD-CKD

Other NDD-CKD refers to the other sub-groups of CKD patients within non-dialysis who are earlier stage: CKD patients in stage 3 and stage 4, as well as stage 5 who are not eligible for dialysis. Many of these patients receive medical care in endocrinology, cardiology or internal medicine clinics where they are treated for their primary disease.

Unmet Medical Need

DD-CKD Patients are Under-Treated for Anemia

We believe there is chronic under-treatment for anemia within the DD-CKD patient population, as many patients do not reach target Hb levels despite ESA therapy. The consensus opinion of the expert panel assembled by the Chinese Journal of Nephrology in 2013 advocated treating to Hb 11.0 g/dL to 13.0 g/dL, whereas we believe, based on our key opinion leader Advisory Board Meeting in Shanghai in March 2013 that in clinical practice, nephrologists generally use Hb 10.0 g/dL to 12.0 g/dL as the target. However, according to the 2012 Shanghai Dialysis Registry, approximately 50% of patients in Shanghai did not exceed a Hb level of 10.0 g/dL and approximately 75% did not exceed Hb 11.0 g/dL. Over 19% of dialysis patients failed to reach a severely low Hb level of 8.0 g/dL. The Chinese Renal Data System reported that in 2011, the most recently reported data, the average Hb level of DD-CKD patients in the registry was approximately 9.1 g/dL and the percentage of patients who reached Hb levels greater than or equal to 11.0 g/dL was only about 21%.

We believe there are a number of factors that have led to under-treatment of anemia in the dialysis population, including:

- The ESA doses used are generally not sufficient to treat to target Hb levels for certain patient populations. We believe that the reasons include constraints on reimbursement for anemia treatment and fixed hospital pharmacy budgets, as well as safety and efficacy limitations of these drugs. Lower dose levels are particularly ineffective in the hypo-responsive patient population.
- The use of IV iron, which is often needed to correct Hb to target levels with ESAs, is limited due to limited reimbursement and perceived clinical risk. According to the Shanghai Dialysis Registry, in 2011, less than 9% of dialysis patients in Shanghai were treated with IV iron.
- For the PD population, where patients are not already visiting the hospital for HD and are receiving ESA treatment during dialysis, similar logistical and financial issues that impede ESA use in the NDD-CKD population discussed below apply to these patients.

Dialysis Eligible NDD-CKD and Other NDD-CKD Patients are Largely Un-Treated for Anemia

Apart from the ESAs used by the dialysis patients in China, we believe that there is a low level of use of ESAs in the non-dialysis population. Based on our clinical trial experience in China, we believe use of ESAs in this population is generally limited to “CKD Clinics” at major research hospitals in top cities where CKD patients are admitted into programs for academic research purposes. We believe there are a number of significant impediments that inhibit the use of ESAs in the outpatient setting, for patients who are not already visiting the hospital for dialysis treatment on a regular basis.

- Generally, under the Chinese healthcare system, patients do not have a personal physician but rather are seen by the physician on the schedule on the day of the visit. This limited continuity of care makes managing the potential risks of ESAs and the titration of ESA treatment needed to maintain Hb within target range particularly difficult.

- Hypertension and associated co-morbidities are top risk factors for the CKD population. Many physicians in China believe that for the outpatient NDD-CKD population, the risk of developing new or exacerbating existing hypertension from ESA with the attendant risk of worsening renal failure outweigh the benefits of treating anemia.
- Injectable drugs like ESAs present a challenge in China because even subcutaneous administration is performed at hospitals and not in the home. Frequent hospital visits for injections, for the sole purpose of receiving ESA treatment, can present a substantial logistical and financial burden on patients.
- Nephrologists are the primary prescribers of ESAs. Those CKD patients with hypertension or diabetes who are treated by other physicians, such as cardiologists and endocrinologists, are generally not treated with ESAs.
- Non-dialysis patients are covered under outpatient reimbursement, unlike dialysis patients who are covered under Severe Disease reimbursement, when available. The lower level of reimbursement coverage means a higher patient co-pay, which further limits ESA use and compliance.

We believe that these impediments have contributed to a low rate of ESA use in the NDD-CKD population in China, and that roxadustat, as an oral agent triggering the HIF mechanism of action, has the potential to make this population accessible for effective anemia treatment in CKD.

Growing Market Opportunity

Healthcare expenditures in China have more than doubled over the past five years, from $156 billion in 2006 to $357 billion in 2011. China is projected by IMS Health to become the world's second largest pharmaceutical market after the United States by 2016 (IMS Market Prognosis, May 2012). We believe several factors will continue to drive the growth of the overall pharmaceutical market in China as well as the market for the treatment of anemia in CKD. These factors include continuing urbanization, an aging population and the increasing prevalence of chronic diseases (particularly diabetes and hypertension which are common causes of CKD), and income growth. We also believe that the increasing standard of living will drive higher rates of disease awareness, leading to greater rates of diagnosis and treatment.

The strong growth in the China healthcare sector is a direct result of central government policy. In 2009, the Chinese government implemented healthcare reform that greatly expanded reimbursement coverage across population, scope, and level of coverage, and in 2011, the 12th Five Year Plan placed the biomedical industry and development of innovative medicines as a strategic priority for the country. The following table shows the growth and size of the China healthcare market:

	2006 ($US)	2011 ($US)
Total Healthcare Expenditures	$156 billion	$357 billion
Per Capita Healthcare Expenditures	$119	$261
Market Size for Pharmaceuticals	$27 billion	$71 billion
Percentage of Population with Health Insurance	43%	>95%
China in Global Ranking of Pharmaceutical Markets	9th	3rd

Source: Health care in China: Entering "uncharted waters", McKinsey & Company, healthcare systems and services practice, November 2012

Current ESA Market Size and Drivers of Market Growth in China

Total ESA sales in China were approximately $145 million in 2013, and the ESA market in China has grown at a 25% compound annual growth rate between 2006 and 2013 based on data from IMS Health.

We believe that given the limited availability of dialysis in China, dialysis is still in the early stages of development relative to the United States, and has the potential for sustained long-term growth. We believe growth of dialysis will be driven by the expansion of reimbursement and expansion of dialysis facilities. We further believe that the growing pipeline of CKD patients and expansion of reimbursement will drive growth in demand for anemia treatment in CKD patients.

- *Expansion of Reimbursement.* Reimbursement exists for the use of ESAs in the treatment of anemia in CKD and the coverage levels are expanding. Under Basic Medical Insurance, the reimbursement program for the urban population, coverage for healthcare and drugs is categorized into one of three categories: outpatient, inpatient, and Severe Disease. Both the Dialysis Eligible and Other NDD-CKD patients are reimbursed under outpatient coverage. As an example, coverage levels for outpatient are in the 60-85% range in Shanghai, depending on level of hospital visited and patient age. Dialysis patients, on the other hand, receive reimbursement under the more generous Severe Disease coverage, which is reimbursement for catastrophic healthcare expenditures. Coverage levels are set at a minimum level of 50% by policy and are as high as 85% for employees and 92% for retirees in Shanghai. We expect the availability of Severe Disease reimbursement to significantly drive the utilization of dialysis services and ESAs in the coming years.
- *Expansion of Dialysis Infrastructure.* The number of DD-CKD patients increased from approximately 70,000 in 2007 to an estimated 300,000 to 400,000 in 2013 and has grown at a compound annual growth rate of 25% to 30% per year from 2007 to 2013. Despite this substantial rate of growth, the Ministry of Health and the Chinese Society of Nephrology have publicly recognized the need for further investment in dialysis infrastructure to accommodate the expected continued growth of the patient population requiring dialysis. PD is an alternative to HD and does not require the level of capital investment in facilities and equipment that is necessary to enable HD. At the end of 2012, PD was estimated to account for 10% of the current dialysis population.
- *Demographics-Driven Growth.* Diabetes and hypertension are common causes of CKD, the rates of which have been growing in China over past two decades. China is experiencing epidemiological changes in metabolic diseases due to economic development, urbanization and an aging population. We believe the increase in diabetes and hypertension prevalence will result in increasing numbers of patients with CKD in the future.

Our China Solution

We believe that roxadustat, if approved, has the potential to address the unmet medical need for the treatment of anemia in each of the three categories of CKD patients in China. Several of the safety, efficacy, reimbursement and convenience advantages that roxadustat, our oral therapeutic, potentially offers over ESAs (see "—Our Solution—Roxadustat—A Novel, Orally Administered Treatment for Anemia") are particularly applicable in the China market.

Roxadustat May Address Chronic Under-Treatment in DD-CKD Patients

We expect roxadustat to be viewed as more attractive than ESAs, and particularly attractive within certain categories of the dialysis population—patients who are not treated to target Hb levels for any reason, patients who are hyporesponsive to ESAs, patients on PD, which is home-based, and DD-CKD patients who have not previously received ESA treatment.

- *Roxadustat May Increase Rate of Successful Anemia Treatment.* We believe that the level of ESA dosing generally used in China is not adequate to achieve target Hb levels for many dialysis patients, especially with minimal use of IV iron. The dose levels used are within a very narrow range due to clinical concerns over ESA safety at higher doses. Moreover, reimbursement limits may cap ESA dose. In contrast, assuming roxadustat is approved, we believe we can price roxadustat so that reimbursable doses of roxadustat will be sufficient to treat most patients to target Hb levels.

- *Roxadustat May Address Hyporesponsiveness.* Hyporesponsive patients, who often fail to respond to ESA treatment, in particular are often inadequately treated due to need for significantly higher doses of ESAs. Our data suggest that roxadustat may be safe and effective in this patient population without the use of high doses.
- *Roxadustat May Reduce Requirements for IV Iron.* ESAs generally require IV iron for effective anemia treatment, and IV iron use is limited in China due to limited reimbursement and perceived clinical risk. Roxadustat potentially eliminates the need for IV iron to reach treatment target.

Roxadustat May Address Lack of Access of ESA Treatment in NDD-CKD Patients

We view NDD-CKD as the segment where roxadustat, with the benefits of the HIF mechanism of action and being an orally administered small molecule, could potentially represent the only viable treatment solution for this patient population.

- *Roxadustat May Make Treatment Accessible and Feasible.* As an oral agent, roxadustat eliminates the need for frequent hospital visits which are needed for ESA administration, decreasing the overall cost and inconvenience of treatment, particularly for DD-CKD patients undergoing PD who are otherwise treated in the home, as well as Dialysis Eligible NDD-CKD and Other NDD-CKD patients.
- *Roxadustat May Have an Improved Safety Profile.* ESA treatment is associated with an increased risk of severe adverse events including hypertension, stroke, myocardial infarction and death. Our data suggest that roxadustat may not increase the risk of these events and therefore may be safer than ESAs thereby potentially removing a significant deterrent to anemia therapy in China.

Roxadustat May Add Value in Both the NDD-CKD and DD-CKD Patient Populations

- *Roxadustat May Reduce Overall Cost of Treatment Associated With Anemia.* For the equivalent reimbursement cost to the government, we believe that roxadustat may deliver a higher potential clinical benefit compared to ESAs. Roxadustat, if approved, could treat patients to target Hb level. Roxadustat could also potentially lower the use of IV iron and anti-hypertensives. Moreover, the total cost of care would be reduced by lowering loss of time and cost of hospital-based ESA injections, and eliminating the infrastructure costs necessary to store ESAs in a cold storage environment. Finally, patients would benefit by reducing the cost of travel to the hospital and the potential lost wages for hospital visits.

Commercialization

Regulatory Strategy

We plan to seek product approval from the China Food and Drug Administration, or CFDA, as a Domestic Class 1.1 drug through our China subsidiary, FibroGen China. FibroGen China submitted a CTA to the CFDA for roxadustat for the treatment of anemia in CKD in March 2013. This Domestic Class 1.1 designation allows us to use the “green channel”, which may facilitate expedited approval with access to the regulatory authorities for formal and informal dialogue about development plans. We believe the domestic pathway represents the fastest route for bringing roxadustat to market and providing patients with access to a potentially safer, more effective, more convenient and more accessible therapy.

We believe the development of roxadustat is aligned with the Chinese government’s current policies. The Chinese government is building dialysis infrastructure to address the unmet need for dialysis. We believe that anemia treatment is a critical component of any national dialysis program, and the cost of anemia treatment is an important factor in the public health burden of CKD.

FibroGen China has completed Phase 1 and Phase 2 clinical trials in China and expects to start Phase 3 clinical trials in China in the first half of 2015, with Phase 3 data expected in the second half of 2016 and, assuming the Phase 3 clinical trial is successful, possible NDA approval in China in mid-2017. However, actual dates depend on a variety of factors and are subject to numerous risks and uncertainties, including with respect to patient enrollment, safety results, manufacturing, third party contractors and government regulators, some of which are out of our control. See also "Risk Factors" beginning on page 18, and particularly those risk factors under the heading "Risk Related to the Development and Commercialization of Our Product Candidates." These trials have been conducted, and will continue to be conducted, in parallel with but independently of the other trials conducted in the global roxadustat development program. All available safety data from the global program will be included in the China NDA submission.

Manufacturing Certification

FibroGen China plans to secure all New Drug and Manufacturing Licenses (including a Drug Approval Code) required for commercialization of roxadustat in China. A Manufacturing License is fundamental for production and sale of drugs in China, and it is the Manufacturing License, not the New Drug License which is granted at NDA approval, that gives FibroGen China the right to market roxadustat. With the Manufacturing License, FibroGen China will have the right to sell roxadustat (issue "fa-piaos", or invoices, for the sale) into the highly regulated pharmaceutical distribution system, and recognize revenues for such sale. FibroGen China will also have the right to negotiate pricing with the government and the right to apply for reimbursement for roxadustat.

FibroGen China is completing construction and validation of its manufacturing facility in Beijing. We received a Pharmaceutical Production Permit, which is a general manufacturing license, for the manufacturing facility in August 2014, and we expect to receive the Manufacturing Licenses that will be necessary to manufacture roxadustat in the next few years after successful completion of the registration and GMP validation campaigns. *(See "—Manufacture and Supply" and "—Government Regulation—Regulation in China").*

Market Segmentation

We believe DD-CKD market in China is readily addressable in the near term, and we believe roxadustat has the potential to deliver a compelling value proposition in particular to certain subgroups within DD-CKD: patients who are not treated to target Hb levels for any reason, patients who are hypo-responsive to ESAs, and patients on PD, which is performed at home. In addition, we believe that roxadustat, if approved, would have the potential to be the preferred anemia treatment for newly-initiated dialysis patients who have not been previously treated with ESA. With the expected expansion of Severe Disease reimbursement, we believe that the number of DD-CKD patients will increase steadily. We believe that it could require more than a decade for China to address the treatment gap between patients who need dialysis and those who are actually dialyzed.

If roxadustat is approved, we believe the Dialysis Eligible NDD-CKD population could represent another readily accessible and potentially new market segment for anemia therapy. There is an urgent and severe unmet medical need for these very sick patients, and the current low rate of treatment within this patient group could be addressed by an approved anemia treatment such as roxadustat. We view the Other NDD-CKD population as a longer term market opportunity where the potential number of patients could be substantial.

We believe the hospital-based nature of the China healthcare system is a very attractive feature of this market as it lends itself to rapid adoption of roxadustat within nephrology practices and across specialties, unlike in the United States where dialysis is performed separately at freestanding dialysis centers and CKD is treated at widely dispersed clinics and primary care offices across the country. In China, within nephrology, the same physicians care for dialysis, Dialysis Eligible NDD-CKD and Other NDD-CKD patients. Moreover, cardiologists and endocrinologists are located at the same hospitals as nephrologists, and prescriptions from all specialties are often filled at the same hospital pharmacy; as a result, the points of sale are highly concentrated.

Reimbursement

As roxadustat is potentially a chronic use drug that addresses an unmet medical need and is intended to benefit large numbers of Chinese patients, we intend to apply for reimbursement by the Chinese government. Pricing for drugs sold without reimbursement is determined by the drug manufacturer, whereas pricing for drugs under reimbursement is determined by the government. We believe the compelling pharmaco-economic value proposition will support fair pricing for roxadustat.

AstraZeneca

We have entered into an agreement with AstraZeneca relating to roxadustat in China. Under the agreement, FibroGen China will hold all of the regulatory licenses issued by China regulatory authorities and be primarily responsible for regulatory, clinical and manufacturing activities.

AstraZeneca will conduct commercialization activities as well as serve as the national distributor for roxadustat, sourcing the distribution of roxadustat to a network of regional and local distributors. FibroGen China will be responsible for medical affairs and physician education.

We believe that the collaboration will not only help to accelerate market access and patient adoption, but also reduce our risks associated with roxadustat launch in China, as AstraZeneca has significant experience with the China market and will be paying for launch-related commercialization costs in advance and recouping 50% of these expenses from initial roxadustat profits.

Clinical Trials

Our clinical development plan is based upon an agreement with the CFDA that our NDA package will include Phase 1, 2 and 3 trials performed exclusively in China, as well as reference data from Phase 1 and Phase 2 trials performed outside of China.

Clinical Trials of Roxadustat in China

We have successfully completed Phase 1 and Phase 2 trials in China. A summary of our data and comparison to data from our trials performed outside of China is as follows:

Phase 1 Trials

We completed Phase 1 trials of single and multiple ascending doses of roxadustat. Key findings were:

- Roxadustat pharmacokinetic parameters in Chinese are similar to those in Caucasians and Japanese.
- Stimulation of endogenous erythropoietin, a marker of roxadustat pharmacodynamics, in Chinese is similar to stimulation in Caucasians and Japanese.
- Roxadustat was well tolerated and there were no negative safety signals.

Phase 2 Trials

We completed a Phase 2 double-blind placebo controlled trial in NDD-CKD patients and a Phase 2 randomized trial of roxadustat compared to epoetin alfa in DD-CKD patients. Results of these trials are very similar to results from comparable trials performed in the United States. See “Business—Our Development Program for Roxadustat.” The results of the DD-CKD trial were presented at the 2013 World Congress of Nephrology and the results of the NDD-CKD trial were presented at the 2013 American Society of Nephrology meeting. Key findings of these trials are as follows:

DD-CKD Trial Results

- Roxadustat achieved Hb maintenance in DD-CKD patients who discontinued treatment with epoetin alfa.
- In a post-hoc analysis, the data met the primary endpoint of our planned Phase 3 trial in China in this patient population.
- There were no serious adverse events after starting roxadustat and most common adverse events were muscle spasms, abdominal discomfort, decreased appetite and infections which were typical of those expected for DD-CKD patients. There were no dose-related trends or imbalances in the nature of adverse events between roxadustat and epoetin alfa groups.

NDD-CKD Trial Results

- By Week 9, roxadustat increased Hb levels significantly compared to placebo ($p<0.001$).
- In a post-hoc analysis, the data met the primary endpoint of our planned Phase 3 trial in China in this patient population.
- Serious adverse events were progression of CKD, infection and high potassium levels and the most common adverse events were infections, high potassium levels, nausea and dizziness. The percentage of patients with adverse events was similar for patients treated with roxadustat compared to patients treated with placebo. There were no imbalances in the nature of adverse events between the patient groups.

Strategy for Continued Development of Roxadustat in China

We plan to perform two Phase 3 trials in China to support approval of roxadustat for treatment of anemia in DD-CKD and NDD-CKD patients. Based on discussions with the CFDA, our planned Phase 3 trials are designed to confirm Phase 2 results. Consequently, these Phase 3 trials are similar in design and endpoints to our Phase 2 trials in DD-CKD and NDD-CKD, except that our Phase 3 trials will include a larger number of patients and will study longer dosing durations. The overall designs of our planned Phase 3 trials are as follows:

Phase 3 Trial in DD-CKD (FGCL-4592-806):

- Design: Randomized, multicenter, open-label, active control.
- Patients: CKD on dialysis.
- Number: 300.
- Control treatment: epoetin alfa.
- Randomization: 2:1 (roxadustat:epoetin alfa).
- Dosing duration: 26 weeks with option for some patients to continue dosing to Week 52.
- Primary endpoint: Hb mean change from baseline averaged over Weeks 23 to 27.

Phase 3 Trial in NDD-CKD (FGCL-4592-808):

- Design: Randomized, multicenter, double-blind, placebo controlled.
- Patients: CKD not on dialysis.
- Number: 150.
- Control treatment: placebo.
- Randomization: 2:1 (roxadustat:placebo).
- Dosing duration: 8 weeks followed by open-label treatment to week 26 and option for some patients to continue dosing to week 52.
- Primary endpoint: Proportion of patients who achieve a confirmed Hb response at any time up to and including Week 9.

In designing these trials, we had several important considerations:

- We had successful Phase 2 trials, and in post-hoc analyses our Phase 2 trial results met the primary endpoints of our planned Phase 3 trials.
- The dosing regimens in our planned Phase 3 trials are based on the dosing regimens in our China Phase 2 trials doses that met the primary endpoints.
- Dosing duration to meet the primary endpoint in the NDD-CKD Phase 3 trial is identical to the China Phase 2 trial dosing duration with additional dosing beyond eight weeks as part of this trial.
- Dosing duration to meet the primary endpoint in the DD-CKD Phase 3 trial is longer than the China Phase 2 trial dosing duration but similar to U.S. Phase 2 trial dosing duration.
- Increased number of patients in Phase 3 increases the trials' power, or ability to detect the primary endpoint.

The CFDA is currently reviewing our Phase 3 clinical trial application, and we expect to begin enrolling subjects in the first half of 2015.

Planned Phase 4 Studies

The CFDA imposes a five-year monitoring surveillance period after NDA approval on all Class 1.1 innovative drugs like roxadustat. Based on current CFDA guidelines, we believe we will need to conduct a 2,000 subject post-marketing observational study to demonstrate the long-term safety of roxadustat as well as provide additional information related to the quality and stability of the manufacturing process for roxadustat. The study design will be determined after Phase 3 data become available.

FG-5200 FOR THE TREATMENT OF CORNEAL BLINDNESS IN CHINA

Corneal blindness, defined as visual acuity of 3/60 or less, is caused by various factors, including scarring resulting from infections, such as herpes simplex, physical trauma, chemical injury and genetic diseases affecting the function of the cornea. In countries with sufficient tissue banks and skilled surgeons, the treatment for corneal blindness is the replacement of the damaged cornea with a corneal graft from donor corneas from human cadavers. Despite use of immunosuppressive drugs, graft rejection remains a serious problem, resulting in graft failure within five years in approximately 35% of cases in the United States. We are developing FG-5200 for the treatment of corneal blindness resulting from partial thickness corneal damage.

In China, there are ethical or religious beliefs, cultural norms and significant infrastructure barriers that limit organ donation or tissue banking possibilities, resulting in an extreme shortage of cadaver corneas. Alternatives

to cadaver corneas, such as collagen derived from porcine tissue or fish scales, are experimental, and to our knowledge, have not yielded satisfactory results. In many cases of corneal blindness, infection and other factors lead to serious risks to the patient.

Market Opportunity

Approximately 40,000 corneal grafts were performed in the U.S. in 2011 using tissue from human cadavers. In contrast, while there are approximately 4 to 5 million patients in China with corneal blindness and an incidence of 100,000 cases of corneal blindness each year, there were only about 3,000 corneal grafts performed in China in 2007 using tissue from human cadavers. We believe the number of corneal grafts using cadaver tissue in China may decrease significantly due to recent changes in government policy.

FG-5200 as a Potential Solution to This Unmet Medical Need

FG-5200 Corneal Implant

Our expertise in fibrosis and extracellular matrix proteins has allowed us to develop processes for producing human collage types I, II and III, as well as coordinate expression of several enzymes involved in assembly of collagen. We have successfully produced a proprietary version of recombinant human collagen III that is suitable for use in cornea repair.

FG-5200, a corneal implant that we intend to apply for approval as a medical device in China, is designed to serve as an immediately functional replacement cornea as well as a temporary scaffold to allow for regeneration of the native corneal tissue. In contrast, cadaver graft tissue is never “turned over”; in fact, only limited integration occurs over the life of the graft. Our FG-5200 implant is made of recombinant human collagen that has been formed into a highly concentrated fibrillar matrix to provide physical characteristics optimal for corneal implantation.

In animal models, FG-5200 persists for less than one year, at which time native tissue has completely regrown, including both epithelium (the outer cell layer of the cornea) and stroma. The stroma in these animal models is seen to be infiltrated with nerve fibers, leading to the reacquisition of the touch response critical to the avoidance of additional corneal damage.

Corneal implants using human donor tissue are currently being reimbursed by the government, and similar to many other implantable Class III devices in China (including stents and bone grafts), we would expect that FG-5200 could be added to the reimbursement list for medical devices, if approved.

Clinical Testing of FG-5200

An initial clinical study outside of China has been conducted to test the safety and feasibility of using a biosynthetic implant composed of recombinant human collagen for the treatment of severe corneal damage as an alternative to human donor tissue. Ten patients with advanced keratoconus, or severe corneal scarring, were implanted with the recombinant collagen implants and have been followed for more than five years. Two-year follow-up data were reported in *Science Translational Medicine* (Fagerholm et al., (2010)) and four-year follow-up data were reported in *Biomaterials* (Fagerholm et al., *Biomaterials* (2014)). Key clinical findings include the following:

- Patients with biosynthetic implants had a 4-year mean corrected visual acuity of 20/54 and gained on average more than 5 Snellen lines of vision on an eye chart.
- Nerve re-growth and touch sensitivity was closer to that of healthy corneas and significantly better in corneas with biosynthetic implants than in human donor corneas.
- Corneas with biosynthetic implants maintained a stable shape and thickness without any need for a long course of immunosuppression therapy.

- There has been no recruitment of inflammatory dendritic cells into the biosynthetic implant area and no episodes of rejection, in contrast to the control arm of human donor cornea transplantation, where a rejection episode was observed.

Using our animal models, we tested FG-5200 against the original formulation of our implants used in the clinical study described above, which contained a lower collagen concentration. The animal studies showed no difference in safety but improved epithelialization with FG-5200 due to the less intrusive suturing technique possible with the new, higher collagen content formulation.

We plan to meet with the CFDA to reach agreement on design and patient size of our clinical program for FG-5200.

FG-5200 Strategy

FibroGen China has submitted a device classification application to the CFDA to designate FG-5200 corneal implants as a Domestic Class III medical device. We have not submitted an investigational device exemption or similar application for FG-5200. We are currently focused on planning, building and certifying our corneal implant manufacturing process in China prior to initiating a pivotal study.

Subject to CFDA designation, we currently plan to manufacture FG-5200 clinical trial material in an aseptic production suite built within the same Beijing manufacturing plant in which we will manufacture roxadustat for China.

We plan to develop FG-5200 in China first. If FG-5200 is successful in China, we believe there is a future opportunity to develop FG-5200 in other Asian countries where cadaver materials are in short supply, in part because cultural norms and infrastructure and other challenges in tissue banking limit tissue donations. We also believe there is an opportunity to obtain CE Marking to facilitate entry into other markets, such as Latin America. We may develop FG-5200 in the United States and Europe as well, where cadaver corneas are available but the required immunosuppressive therapy may make FG-5200 a potentially attractive alternative.

FG-3019 FOR THE TREATMENT OF FIBROSIS AND CANCER

We were founded to discover and develop therapeutics for fibrosis. We began studying connective tissue growth factor, or CTGF, shortly after its discovery. Our ongoing internal research, efforts with collaboration partners and the work of other investigators have consistently demonstrated elevated CTGF levels in pathologic fibrotic conditions characterized by sustained production of extracellular matrix, or ECM, elements that are key molecular components of fibrosis. Our accumulated discovery research efforts indicate that CTGF is a critical common element in the progression of serious diseases associated with fibrosis.

From our library of fully-human monoclonal antibodies that bind to different parts of the CTGF protein and block various aspects of CTGF biological activity, we selected FG-3019, for which we have exclusive worldwide rights. We believe that FG-3019 blocks CTGF and inhibits its central role in causing diseases associated with fibrosis. Our data to date indicate that FG-3019 is a promising and highly differentiated product with broad potential to treat a number of fibrotic diseases and cancers. We are currently conducting Phase 2 trials in idiopathic pulmonary fibrosis, or IPF, pancreatic cancer and liver fibrosis. FG-3019 has received orphan drug designation in IPF in the United States.

Based on its ability to block CTGF, FG-3019 may be a treatment for a broad array of fibrotic disorders of nearly every organ system. In animal studies of FG-3019, such as radiation-induced pulmonary fibrosis in mice, we have demonstrated that FG-3019 is capable of reversing fibrosis. In clinical trials, we have used advanced medical imaging technology to quantify changes in fibrosis throughout the lungs. Our data to date using these measures demonstrate that FG-3019 may stabilize and in some instances reverse pulmonary fibrosis and improve pulmonary function in IPF patients.

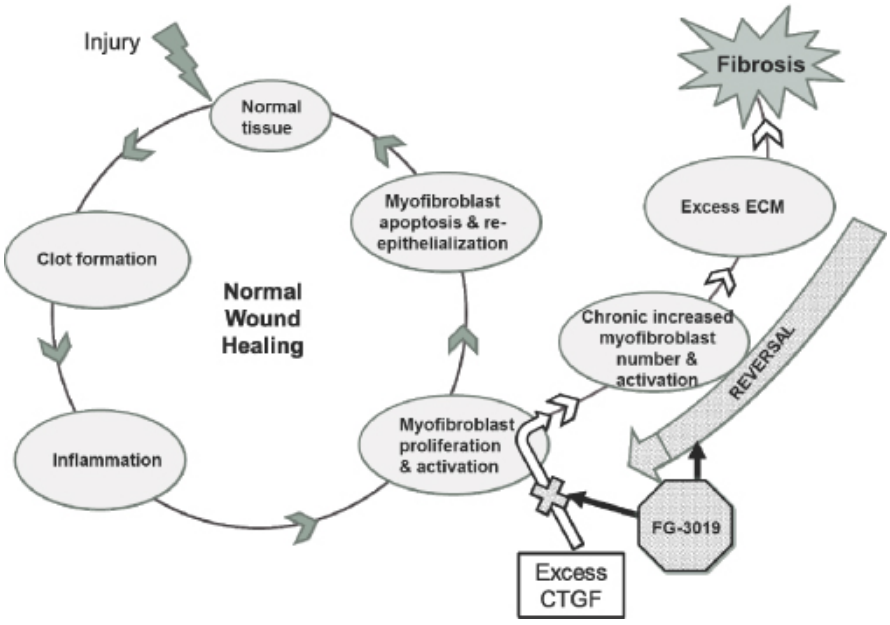
Certain cancers have a prominent ECM component that contributes to metastasis and progressive disease. Specifically, ECM is the connective tissue framework of an organ or tissue; all tumors have ECM. In the case of fibrotic tumors, ECM is more pronounced and there is more fibrosis than in other tumor types. In mouse models of pancreatic cancer, FG-3019 treatment has demonstrated reduction of tumor mass, slowing of metastasis and improvement in survival. In an open-label Phase 2 study of FG-3019 plus gemcitabine and erlotinib, FG-3019 demonstrated a dose-dependent improvement in one year survival rate.

Results to date indicate that FG-3019 has broad potential to address unmet needs for the treatment of fibrotic diseases and cancers. Specifically, given the preclinical and clinical data in pulmonary fibrosis and pancreatic cancer, our primary focus for clinical development of FG-3019 is additional Phase 2 clinical trials in metastatic pancreatic cancer and IPF. We are also conducting exploratory clinical trials with FG-3019 in liver fibrosis secondary to viral infection.

Overview of Fibrosis

Fibrosis is an aberrant response of the body to tissue injury that may be caused by trauma, inflammation, infection, cell injury, or cancer. The normal response to injury involves the activation of cells that produce collagen and other components of the ECM that are part of the healing process. This healing process helps to fill in tissue voids created by the injury or damage, segregate infections or cancer, and provide strength to the recovering tissue. Under normal circumstances, where the cause of the tissue injury is limited, the scarring process is self-limited and the scar resolves to approximate normal tissue architecture. However, in certain disease states, this process is prolonged and excessive and results in progressive tissue scarring, or fibrosis, which can cause organ dysfunction and failure as well as, in the case of certain cancers, promote cancer progression.

Excess CTGF Causes Fibrosis. FG-3019 Blocks CTGF and Reverses Fibrosis

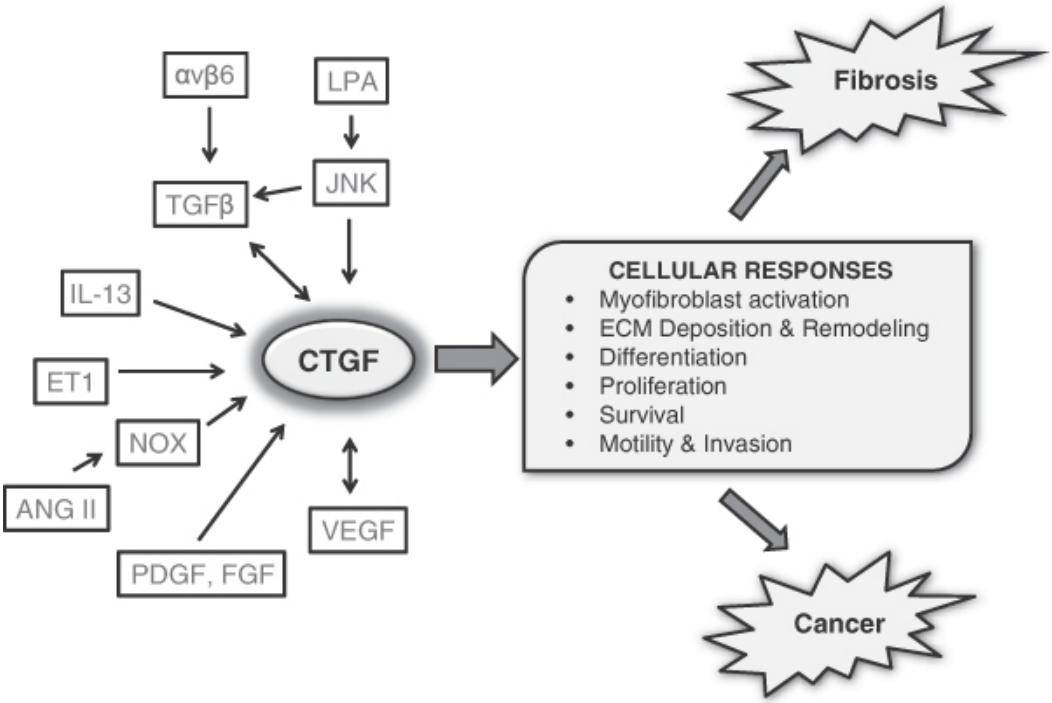


Excess CTGF levels are associated with fibrosis. CTGF increases the abundance of myofibroblasts, a cell type that drives wound healing, and stimulates them to deposit ECM proteins such as collagen at the site of tissue injury. In the case of normal healing of a limited tissue injury, myofibroblasts eventually die by programmed cell

death, or apoptosis, and the fibrous scarring process recedes. In fibrotic conditions, excess CTGF results in chronic activation of myofibroblasts, which leads to chronic ECM deposition and fibrosis (see figure above).

Multiple biological agents and pathways have been implicated in the fibrotic process (Wynn J Pathol (2008)). Many fibrosis pathways converge on CTGF (see figure below), which the scientific literature demonstrates to be a central mediator of fibrosis (Oliver et al, J Inv Derm (2010)). In the case of cancer, the sustained tumor-associated fibrotic tissue promotes tumor cell survival and metastasis. The figure below shows the commonality of cellular mechanisms that may result in fibrosis and cancer.

Most Biological Factors Implicated in Fibrosis Work Through CTGF



CTGF is a secreted glycoprotein produced by fibroblasts, endothelium, mesangial cells and other cell types, including cancers, and is induced by a variety of regulatory modulators, including TGF-b and vascular endothelial growth factor, or VEGF. CTGF expression has been demonstrated to be up-regulated in fibrotic tissues. Thus, we believe that targeting CTGF to block or inhibit its activity could stop or reverse tissue fibrosis. In addition, since CTGF is implicated in nearly all forms of fibrosis, we believe FG-3019 has the potential to provide clinical benefit in a wide range of clinical indications that are characterized by fibrosis.

Until recently, it was believed that fibrosis was an irreversible process. It is now generally understood that the process is dynamic and potentially amenable to reversal. Based on studies in animal models of fibrosis of the liver, kidney, muscle and cardiovascular system, it has been shown that fibrosis can be reversed. It has also been demonstrated in humans that fibrosis caused by hepatitis virus can be reversed (Chang et al. Hepatology (2010)). Additionally, we have generated data in human and animal studies that lung fibrosis can be reversed in some instances upon treatment with FG-3019. We do not believe that there is clinical evidence that therapies currently

on the market directly prevent or reverse fibrosis in human disease. While certain other companies are working on topical inhibition of CTGF, we are not aware of other products in development that target CTGF inhibition for deep organ fibrosis and cancer.

Clinical Development of FG-3019—Overview

We have performed clinical trials of FG-3019 in IPF, pancreatic cancer, liver fibrosis and diabetic kidney disease. We are currently conducting an extension study for an open-label Phase 2 trial in IPF; a randomized, double-blind placebo-controlled Phase 2 trial in IPF; an open-label Phase 2 trial in pancreatic cancer; and a randomized, double-blind, placebo-controlled Phase 2 trial in liver fibrosis. In ten Phase 1 and Phase 2 clinical studies involving FG-3019 to date, including more than 340 patients who were treated with FG-3019 (146 patients dosed for more than 6 months), FG-3019 has been well-tolerated across the range of doses studied, and there have been no dose-limiting toxicities seen thus far.

In IPF, we completed a Phase 1 single dose trial, and subsequently advanced the program to an ongoing open-label Phase 2 trial of FG-3019 in 89 patients, which has completed its one year treatment period and based on encouraging results is now in an extension phase. We are also conducting a randomized, double-blind, placebo-controlled Phase 2 trial. Both Phase 2 trials are designed to evaluate the effects of FG-3019 on pulmonary function, extent of fibrosis and health-related quality of life.

In pancreatic cancer, we performed an open-label, dose-finding Phase 2 trial in a total of 75 patients with advanced pancreatic cancer. We recently began a randomized, active-control, neoadjuvant Phase 2 trial combining FG-3019 with nab-paclitaxel plus gemcitabine in approximately 40 patients with locally advanced pancreatic cancer. We anticipate interim data from this study in the second half of 2015. We also expect to begin a randomized Phase 2 trial of FG-3019 in metastatic pancreatic cancer patients in the first half of 2015. However, actual dates depend on a variety of factors and are subject to numerous risks and uncertainties, including with respect to patient enrollment, safety results, manufacturing, third party contractors, and government regulators, some of which are out of our control. See also “Risk Factors” beginning on page 18, and particularly those risk factors under the heading “Risks Related to the Development and Commercialization of Our Product Candidates.”

We are conducting a Phase 2 clinical trial with FG-3019 in liver fibrosis associated with hepatitis B, or HBV, in Hong Kong and Thailand, where the prevalence of HBV is high. A small pilot clinical study in liver fibrosis associated with hepatitis C, or HCV, associated fibrosis is also being conducted in Hong Kong.

Early clinical development included studies in diabetic kidney disease. Although no adverse outcomes were observed, we decided not to pursue this indication at this time based on the difficulty of the regulatory path and the extensive clinical trials likely to be required for approval for the treatment of diabetic kidney disease.

The table below provides a summary of our clinical trials involving FG-3019:

Completed and Ongoing FG-3019 Clinical Trials

Study, Study #	Study Design	Dose (mg/kg)	Frequency	Treatment Duration (weeks)	Subjects
Phase 1—IPF, FGCL-MC3019-002	Open-label, dose-escalation	1, 3, or 10	Single		21
Phase 2—IPF, FGCL-3019-049	Open-label, dose-escalation	15 or 30	Every 3 weeks	45 weeks	89*
Phase 2—IPF, FGCL-3019-067	Double-blind, placebo-controlled (1:1)	30 mg/kg	Every 3 weeks	45 weeks	Target 136**
Phase 2—Pancreatic Cancer, FGCL-MC3019-028	Open-label, dose-escalation	3, 10, 15, 25, 35, or 45 17.5 or 22.5	Every other week Weekly	Until disease progression 1 to 89 weeks	75
Phase 2—Pancreatic Cancer, FGCL-3019-069	Open-label, active control (1:1)	35	Cycle 1 = Days 1, 8 and 15 Subsequent Cycles = Every other week	24 weeks	Target 40**
Phase 2—HBV- Liver Fibrosis, FGCL-3019-801	Double-blind, placebo-controlled (2:1)	15 or 45	Every 3 weeks	45 weeks	Target 120**
Phase 2—HCV- Liver Fibrosis, FGCL-3019-802	Open-label	30	Every 3 weeks	45 weeks	Target 15**
Phase 1—Diabetic Kidney Disease, FGCL-MC3019-003	Open-label, dose-escalation	3 or 10	Days 0, 14, 28 and 42	6 weeks	24
Phase 2—Diabetic Kidney Disease, FGCL-3019-029	Double-blind, placebo-controlled (1:1:1)	5 or 10	Every 2 weeks Every 4 weeks	12 weeks 12 weeks	38
Phase 2—Diabetic Kidney Disease, FGCL-3019-032	Double-blind, placebo-controlled	3 or 10	Biweekly	26 weeks	46

* Study 049 completed its one year treatment period and, based on encouraging results, is now in an ongoing extension phase.
** Currently enrolling.

Idiopathic Pulmonary Fibrosis

Understanding IPF and the Limitations of Current Therapies

IPF is a form of progressive pulmonary fibrosis, or abnormal scarring, that destroys the structure and function of the lungs. As tissue scarring progresses in the lungs, transfer of oxygen into the bloodstream is increasingly impaired. Average life expectancy at the time of confirmatory diagnosis of IPF is estimated to be between 3 to 5 years, with approximately two-thirds of patients dying within five years of diagnosis. Thus, the survival rates are comparable to some of the most deadly cancers. The cause of IPF is unknown but is believed to be related to unregulated cycles of injury, inflammation and fibrosis.

Patients with IPF experience debilitating symptoms, including shortness of breath and difficulty performing routine functions, such as walking and talking. Other symptoms include chronic dry, hacking cough, fatigue, weakness, discomfort in the chest, loss of appetite and weight loss. Over the last decade, refinements in diagnosis criteria and enhancements in high-resolution computed tomography, or HRCT, imaging technology have enabled more reliable diagnosis of IPF and clearer distinction from other interstitial lung diseases.

The U.S. prevalence and incidence of IPF are estimated to be 44,000 to 135,000 cases, and 21,000 new cases per year, respectively, based on Raghu et al. (Am J Respir Crit Care Med (2006)) and on data from the United Nations Population Division. We believe that with the availability of technology to enable more accurate diagnoses, the number of individuals diagnosed per year with IPF will continue to increase. In 2011, Decision Resources Group estimated that there will be approximately $4.6 billion in sales of IPF drugs in the United States and Europe in 2020.

Pirfenidone has been approved to treat IPF in Europe, Canada, Japan and the United States. According to the FDA advisory committee submission by its sponsor, pirfenidone has been shown to have a modest effect on slowing the progression of IPF as measured by forced vital capacity, or FVC, in a minority (less than 15%) of patients. Nintedanib has also been approved to treat IPF in the United States and has been submitted for accelerated approval in the EU. We believe that FG-3019 has the potential to stabilize or reverse lung fibrosis and if approved, improve the prognosis for patients with IPF.

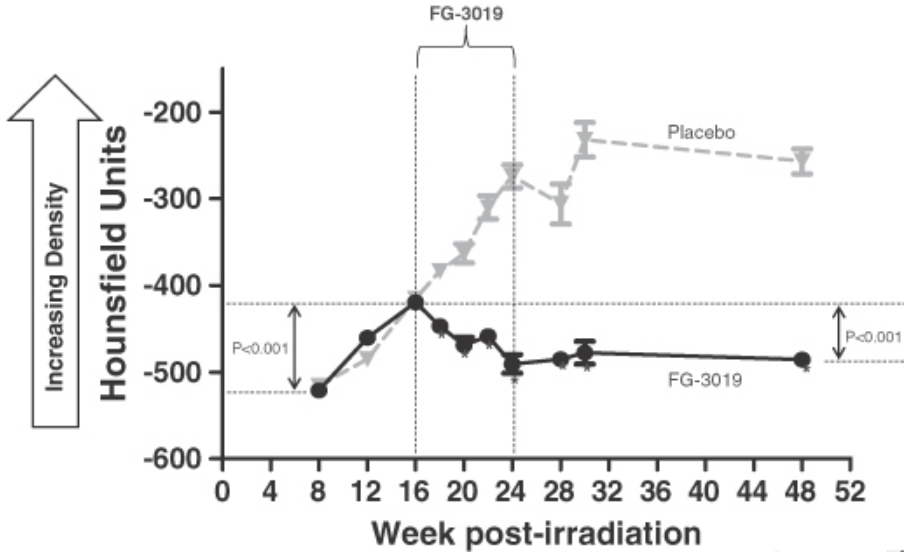
Reversal of Lung Damage in Preclinical Models with FG-3019 in Pulmonary Fibrosis

While there are no established animal models for IPF, we selected the mouse model of radiation-induced lung damage from a variety of other models because we believe that it most closely approximates the process of lung fibrosis seen in humans. We conducted a proof of concept study of FG-3019 using this model as summarized in the figures below.

In this model, a single irradiation of the thorax causes lung tissue damage that over time results in progressive fibrosis. Lung density, indicative of tissue damage, was monitored by HRCT and began to increase eight to 12 weeks after irradiation.

Sixteen weeks after irradiation, measured lung density was significantly elevated and continued to increase in the placebo-treated animals until reaching a plateau at Week 30. Therapeutic treatment with FG-3019 began at Week 16. Significant decreases in lung fibrosis were measurable at Week 18 and it continued to decrease over the eight weeks of FG-3019 treatment through Week 24.

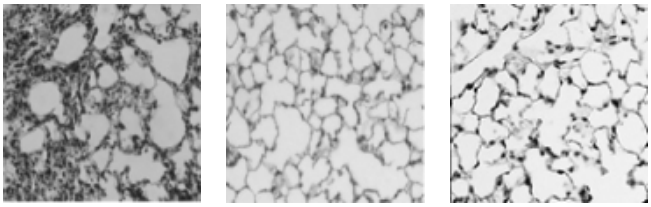
FG-3019 Treatment Starting 16 Weeks After Irradiation Reverses Lung Fibrosis in Mice as Measured by HRCT (Mean ± SE)



* indicates FG-3019-treated lung density is significantly different (p£ 0.05) from placebo-treated

Rapid reversal of lung damage was confirmed by examining tissue histology which showed substantial changes within two weeks of initiating treatment. Prior to FG-3019 treatment (Week 16) lung histology showed lung damage characterized by increased cellularity and tissue remodeling. After two weeks of treatment with FG-3019 (Week 18), damage had been reversed and the structure of the lung more closely resembled that of a non-irradiated or normal mouse. The figure below is representative of the typical pattern of structural changes observed in the mice in this study.

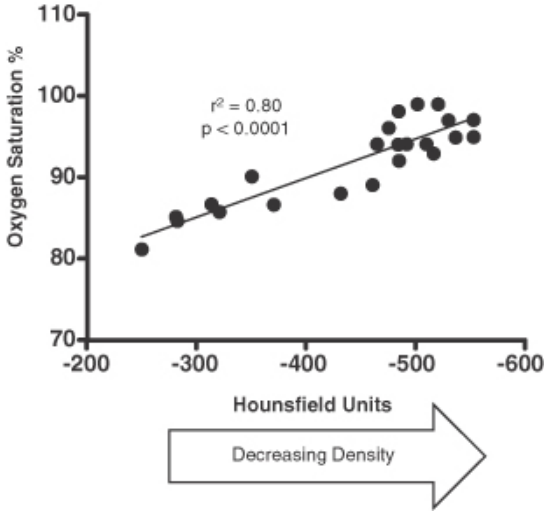
Two Weeks After FG-3019 Treatment: Structural Changes Could be Seen by Lung Histology in Mice



Week 16 Pre-Treatment	Week 18 2 Weeks after starting FG-3019 Treatment	Normal

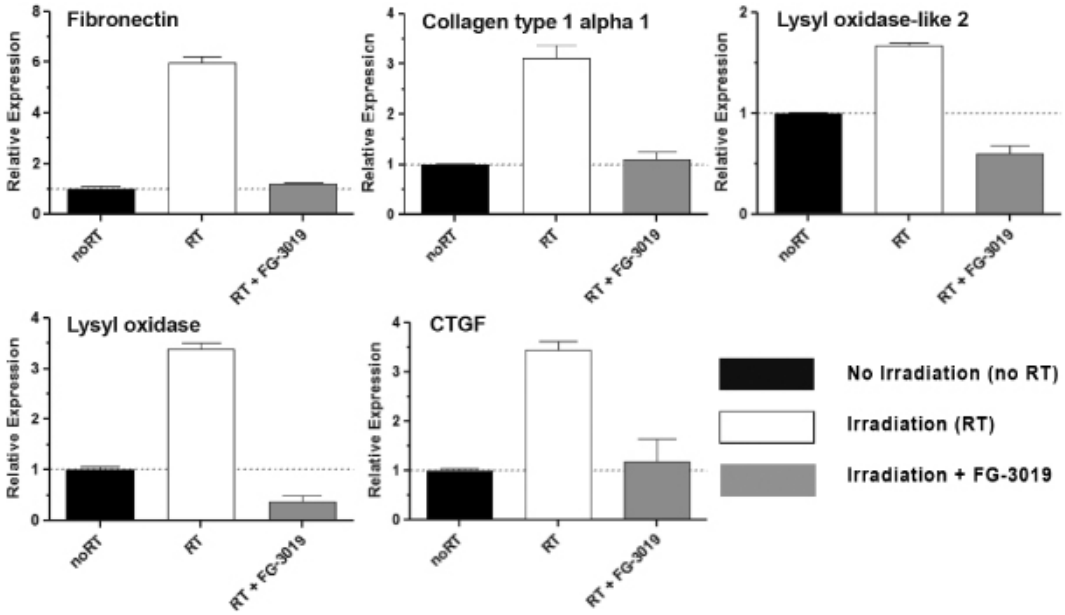
As shown below, reduced lung density consistently correlated with improved lung function, as measured by blood oxygenation.

Improvement of Lung Fibrosis Corresponds with Improvement in Lung Function in Mice



Gene expression changes were also examined at Week 18, two weeks after initiation of treatment with FG-3019. Irradiation induced increased expression of genes involved in ECM deposition, such as fibronectin, collagen type 1 alpha 1, lysyl oxidase, CTGF and lysyl oxidase-like 2. FG-3019 treatment was shown to reduce expression of these genes, as illustrated below.

Examples of Changes in Gene Expression by mRNA Microarray Analysis (mean ± SE) after FG-3019 Treatment in Mice



Clinical Trials of FG-3019 for IPF

Study 002 was a Phase 1 open-label study to determine the safety and PKs of escalating single doses of FG-3019. Patients with a diagnosis of IPF by clinical features and surgical lung biopsy received a single IV dose of FG-3019 at 1, 3, or 10 mg/kg. A total of 21 patients were enrolled in the study; 6 patients received a dose of 1 mg/kg, 9 patients received 3 mg/kg, and 6 patients received 10 mg/kg. FG-3019 was well tolerated across the range of doses studied; and there were no dose-limiting toxicities. Treatment emergent adverse events that were considered to be possibly related by the principal investigator to FG-3019 were mild and self-limited, consisting of pyrexia, cough and headache.

We completed the initial one-year treatment portion of Study 049, a Phase 2 open-label, dose-escalation study to evaluate the safety, tolerability, and efficacy of FG-3019 in 89 patients with IPF. FG-3019 was administered at a dose of 15 mg/kg in Cohort 1 (53 patients) and 30 mg/kg in Cohort 2 (36 patients) by IV infusion every 3 weeks for 45 weeks. Nineteen patients from Cohort 1 participated in the current 1 year extension of dosing. Efficacy endpoints are pulmonary function assessments, extent of pulmonary fibrosis as measured by quantitative imaging and measures of health-related quality of life.

HRCT is typically used to diagnose IPF based on visual assessments of computed tomography, or CT, images of lung fibrosis. We used quantitative HRCT to measure changes in fibrosis in this Study 049. We used software to quantify whole lung fibrosis from the compilation of 1 mm HRCT sections of the entire lung. The computer algorithm, which our vendor validated, provides an overall determination of the percentage of the lung that contains individually the three characteristic forms of IPF fibrosis, including reticular IPF fibrosis which is expected to make the most dynamic contribution to overall lung fibrosis.

The extent of lung fibrosis as measured by quantitative HRCT has been shown to be accurate and reproducible (Kim et al. Eur Radiol (2011)). Recent publications based on similar quantitative HRCT methods have identified an association between worsening pulmonary fibrosis and mortality in IPF (Maldonado et al. Eur Resp J (2014); Oda et al. Respiratory Research (2014)). However, HRCT has not been used by the FDA to establish efficacy in IPF.

Eighty-nine patients in this Phase 2 open label study received at least one dose of FG-3019. We defined disease severity in terms of baseline pulmonary function, measured as the FVC percent of the predicted value for a healthy matched person of the same age, or FVC percent predicted. Severe disease was FVC percent predicted < 55%, moderate disease was FVC percent predicted between 55% and 80%, and mild disease was FVC percent predicted >80%.

In Cohort 1, we enrolled patients with a wide range of disease severity to assess safety and efficacy across the full spectrum. Baseline FVC percent predicted for Cohort 1 was 43% to 90%, with a mean of 62.8%. In contrast, other IPF clinical trials, such as those for pirfenidone and nintedanib, have enrolled patients who on average had mild to moderate disease (mean FVC percent predicted 73.1% to 85.5%). Fourteen patients in Cohort 1 withdrew, and ten of the 14 had severe disease.

In order to enroll IPF patients similar to those in other IPF trials, we amended the protocol for Cohort 2 to include only patients with mild to moderate disease (FVC ³ 55% predicted). Baseline FVC percent predicted for Cohort 2 was 53% to 112%, with a mean of 72.7%. Based on this definition of disease severity, 37 patients in Cohort 1 and 32 patients in Cohort 2 had mild to moderate disease.

Disease Severity in Enrolled and Evaluated Patients Treated with FG-3019 in FGCL-3019-049

		Cohort 1				Cohort 2			
		Severe	Moderate	Mild		Severe	Moderate	Mild	
	FVC % Predicted	< 55%	55% to 80%	> 80%		< 55%	55% to 80%	> 80%	
		N			Total	N			Total
Total	**Enrolled**	16	34	3	53	4	22	10	36
	Complete	5	30	3	38	1	17	10	28
Evaluated	**Enrolled**		34	3	37		22	10	32
	Complete		30	3	33		17	10	27

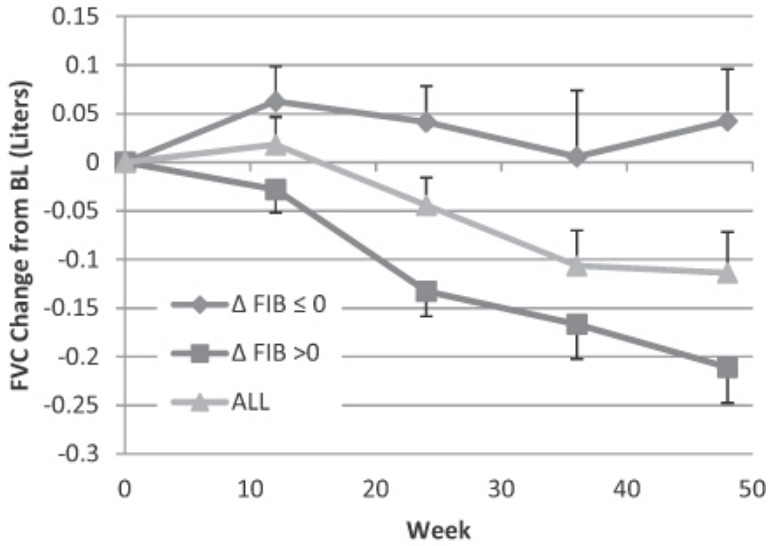
The table below provides a summary of the observed quantitative change in fibrosis for patients in Cohorts 1 and 2 as measured by HRCT. Twenty-four percent of these patients had improved fibrosis at Week 48. We believe that this is the first trial to demonstrate reversal of fibrosis in IPF. Stable fibrosis has been considered the only achievable favorable outcome in IPF. The table below sets forth the number of patients who showed stable or improved fibrosis at Weeks 24 and 48 compared to the amount of fibrosis at the start of the trial.

Changes in Fibrosis in Patients with Mild to Moderate IPF Treated with FG-3019 in FGCL-3019-049

	Stable or Improved Compared to Baseline		Improved Compared to Baseline		Improved Compared to Week 24
	Week 24	Week 48	Week 24	Week 48	Week 48
Cohort 1	21/45 (47%)	14/38 (37%)	12/45 (27%)	12/38 (32%)	8/38 (21%)
Cohort 2	12/29 (41%)	9/28 (32%)	5/29 (17%)	4/28 (14%)	8/26 (31%)
Combined	33/74 (45%)	23/66 (35%)	17/74 (23%)	16/66 (24%)	16/64 (25%)

Fibrosis improvement or stabilization in patients with mild to moderate disease as measured by HRCT correlated with improvement or stabilization of pulmonary function measured by FVC ($p<0.0001$; $r=-0.59$ Cohorts 1 and 2 combined). The figure below shows FVC changes up to Week 48 for patients with stable or improved fibrosis versus patients with worsening fibrosis. Patients with stable or improved fibrosis showed improved pulmonary function, on average, which was significantly different or better than patients with worsening fibrosis who showed a substantial decline in FVC ($p= 0.0001$, Cohorts 1 and 2 combined). Patients with worsening fibrosis had pulmonary function that was similar to the annual decline in pulmonary function for typical IPF patients.

Categorical Analysis of FVC Change from Baseline (BL) (mean ±SE) in FGCL-3019-049



The FVC changes observed in Study 049 are compared to the changes reported in Phase 3 clinical trials for pirfenidone and nintedanib in the table below.

Comparison of FGCL-3019-049 Mean FVC Change in One year to Phase 3 Results for Pirfenidone and Nintedanib

		Mean Change of FVC in One Year			
	N Pbo/Active	Placebo	Active	Difference	%
Pirfenidone I*	174/174	-350	-181	169	48.3%
Pirfenidone II*	173/171	-274	-220	54	19.8%
Pirfenidone III†	238/223	-280	-164	116	41.5%
Nintedanib I	204/307	-205	-95	110	53.6%
Nintedanib II	217/327	-205	-95	110	53.6%
FG-3019	0/66	-	-140		

*Week48, FVC (rank ANCOVA w/ imputation)
† Linear slope analysis

Eighty-nine patients had at least one adverse event. The most common reported events were cough, fatigue, shortness of breath, upper respiratory tract infection, sore throat, bronchitis, nausea, dizziness and urinary tract infection. To date, including the 1-year extension of dosing, there have been 45 SAEs in 31 patients, four of which were considered possibly related by the principal investigator to study treatment. During the first year of treatment there were 32 SAEs in 24 patients. Adverse events observed to date are consistent with typical conditions observed in this patient population.

In aggregate, the data from the Phase 2 open-label, dose-escalation study indicate that a subset of FG-3019 treated IPF patients experienced improvements in lung fibrosis with commensurate improvement in pulmonary function and a potential for prolonged benefit with continued treatment. These results are consistent with the mouse disease model results which showed that FG-3019 treatment can reverse lung fibrosis and result in improved pulmonary function. We believe that our patient data showing correlated improvements in both fibrosis and lung function in some patients have not been seen in previously published IPF clinical studies.

Clinical Development Plan for FG-3019 in IPF

Study 067 is an ongoing Phase 2, randomized, double-blind, placebo-controlled study to evaluate the safety and efficacy of FG-3019 in approximately 136 IPF patients with mild to moderate disease (baseline FVC percentage predicted between 55% and 90%). Patients are being randomized (1:1) to 30 mg/kg of FG-3019 or placebo, every 3 weeks, for 45 weeks. As with our open-label Phase 2 trial, Study 049, the primary efficacy endpoint for Study 067 is change in FVC from baseline. Secondary endpoints are extent of pulmonary fibrosis as measured by quantitative HRCT, other pulmonary function assessments and measures of health-related quality of life. The study is currently enrolling and we plan to meet with the FDA to discuss the further development of FG-3019, including the potential to explore higher doses and more frequent dosing, which may further improve efficacy. We anticipate reporting data from this study in the second half of 2016. However, the actual date will depend on a variety of factors and are subject to numerous risks and uncertainties, including with respect to patient enrollment, safety results, manufacturing, third party contractors and government regulators, some of which are out of our control. See also “Risk Factors” beginning on page 18, and particularly those risk factors under the heading “Risks Related to the Development and Commercialization of Our Product Candidates.”

Pancreatic Cancer

Understanding Pancreatic Cancer and the Limitations of Current Therapies

Pancreatic ductal adenocarcinoma, or pancreatic cancer, is the fourth leading cause of cancer deaths in the United States. U.S. prevalence of pancreatic cancer is estimated to be 44,000. According to the National Cancer Institute, in 2014 there are projected to be approximately 46,000 new cases of pancreatic cancer and approximately 39,000 deaths from the disease in the United States. According to the World Health Organization, or WHO, and based on data from the United Nations Population Division, there were approximately 79,000 new cases of pancreatic cancer and approximately 78,000 deaths in the EU in 2012. The National Cancer Center of Japan estimated that in 2010 (latest year available) there were 32,330 new cases of pancreatic cancer. In 2013, Decision Resources Group estimated that there will be approximately $1.3 billion in sales of pancreatic cancer drugs in 2022.

Pancreatic cancer is aggressive and typically not diagnosed until it is largely incurable. Most patients are diagnosed after the age of 45, and according to the American Cancer Society, 94% of patients die within five years from diagnosis. The majority of patients are treated with chemotherapy, but pancreatic cancer is highly resistant to chemotherapy. Approximately 15% to 20% of patients are treated with surgery; however, even for those with successful surgical resection, the median survival is approximately two years, with a five year survival rate of 15% to 20% (Neesse et al. Gut (2011)). Radiation treatment may be used for locally advanced diseases, but it is not curative.

The duration of effect of approved anti-cancer agents to treat pancreatic cancer is limited. Gemcitabine demonstrated improvement in median overall survival from approximately four to six months, and erlotinib in combination with gemcitabine demonstrated an additional ten days of survival. Nab-paclitaxel in combination with gemcitabine was recently approved by the FDA for the treatment of pancreatic cancer, having demonstrated median survival of 8.5 months. These drugs illustrate that progress in treatment for pancreatic cancer has been limited, and there remains a need for substantial improvement in patient survival and quality of life. The approved chemotherapeutic treatments for pancreatic cancer target the cancer cells themselves. Tumors are composed of cancer cells and associated non-cancer tissue, or stroma, of which ECM is a major component. In certain cancers such as pancreatic cancer, both the stroma and tumor cells produce CTGF which in turn promotes the proliferation and survival of stromal and tumor cells. CTGF also induces ECM deposition that provides advantageous conditions for tumor cell adherence and proliferation, and promotes metastasis, or tumor cell migration, to other parts of the body.

Pancreatic cancers are generally resistant to powerful chemotherapeutic agents, and there is now growing interest in the use of an anti-fibrotic agent to diminish the supportive role of stroma in tumor cell growth and metastasis. The anti-tumor effects observed with FG-3019 indicate that it has the potential to inhibit tumor expansion through effects on tumor cell proliferation and apoptosis as well as reduce metastasis.

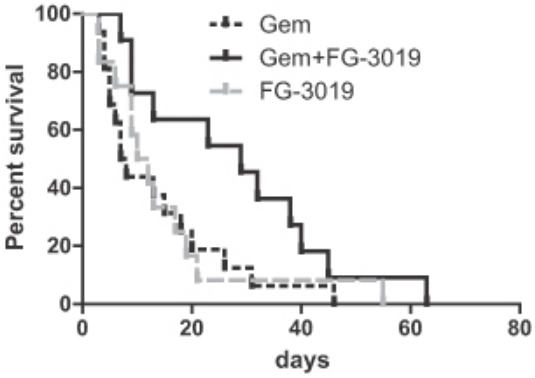
Preclinical Models of FG-3019 for Pancreatic Cancer

We tested FG-3019 in mouse models of pancreatic cancer, where it has demonstrated reduction of tumor mass and metastasis in several models, including the genetically engineered KPC mouse model. This is a preferred model for studying pancreatic cancer because all KPC mice spontaneously develop pancreatic cancer that closely approximates many features of the human disease, including similar genetic mutations, expression of CTGF, extensive stroma, metastases and ascites, or abdominal fluid, formation. KPC mouse tumors, like human pancreatic cancer tumors, are highly resistant to anti-cancer therapies. We performed two short-term studies of tumor responses to treatment and a long-term study of survival which were all conducted with staggered enrollment as mice developed tumors of sufficient size.

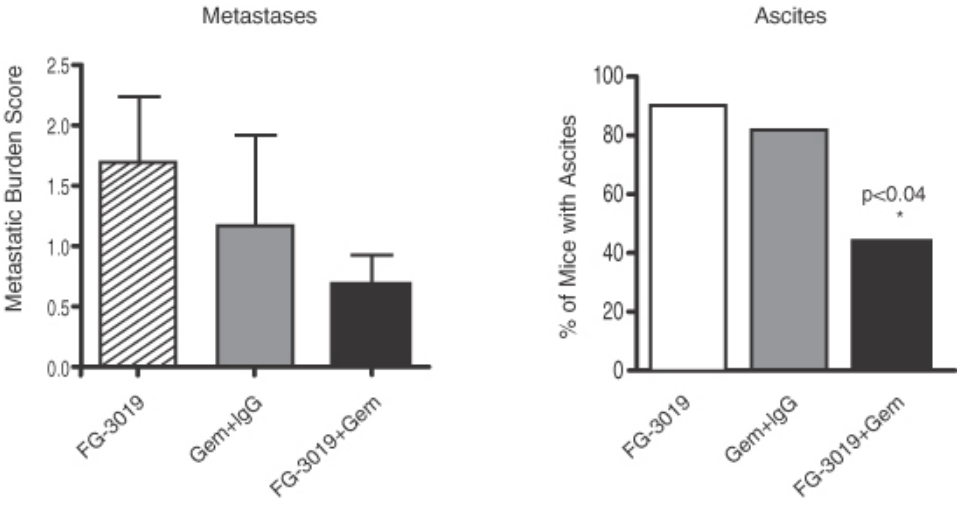
After initiation of treatment, mice randomized to FG-3019 alone survived for 11 days, which is comparable to the historical experience with gemcitabine alone of 7.5 days. The combination of FG-3019 plus gemcitabine increased survival to 29 days.

In additional studies, malignant hemorrhagic ascites were significantly reduced and liver metastases were reduced (although the reduction was not statistically significant) with the combination of FG-3019 plus gemcitabine. Both FG-3019 and FG-3019 plus gemcitabine increased tumor cell apoptosis significantly compared to gemcitabine alone. Our data suggest that FG-3019 may increase tumor cell apoptosis and improve survival in mice by inhibiting expression of XIAP, or X-linked inhibitor of apoptosis. XIAP is one of a family of proteins whose function is to inhibit apoptosis. Elevated expression of XIAP promotes cell survival and is one mechanism by which tumor cells can become resistant to chemotherapeutic agents. FG-3019 decreased XIAP levels significantly whereas gemcitabine did not decrease XIAP levels. The combination of FG-3019 and gemcitabine was even more effective as shown in the figure below.

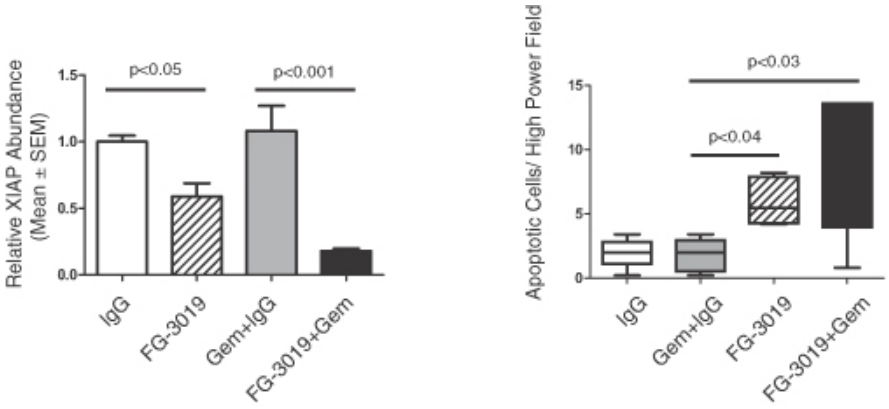
FG-3019 Plus Gemcitabine Treatment Increased Survival (11-13 Mice per Group) in the KPC Mouse Model



FG-3019 Plus Gemcitabine Treatment Reduced Metastasis and Ascites in the KPC Mouse Model (mean ±SE) (*Indicates Statistically Significant Difference from Gemcitabine + IgG)



FG-3019 Plus Gemcitabine Treatment Reduced Expression of Tumor Pro-Survival Gene XIAP and Increased the Number of Apoptotic Cells in the KPC Mouse Model



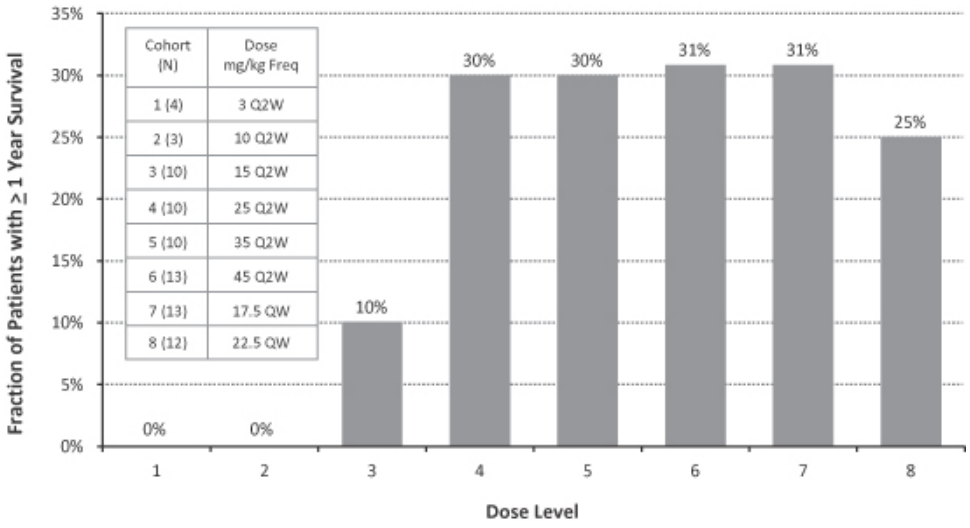
Median inter-quartile ranges and maximum and minimum observations

Clinical Trials of FG-3019 for Pancreatic Cancer

We completed an open-label Phase 2 (FGCL-MC3019-028) dose finding trial of FG-3019 combined with gemcitabine plus erlotinib in patients with previously untreated locally advanced (stage 3) or metastatic (stage 4) pancreatic cancer. The trial tested FG-3019 doses of 3 mg/kg, 10 mg/kg, 15 mg/kg, 25 mg/kg, 35 mg/kg and 45 mg/kg administered every two weeks, and FG-3019 doses of 17.5 mg/kg and 22.5 mg/kg administered weekly after a double loading dose. On Day 15, treatment began with gemcitabine 1000 mg/m^2 weekly for three weeks in a four week cycle and erlotinib 100 mg daily. Treatment continued until progression of the cancer or the patient withdrew for other reasons. Patients were then followed until death. Tumor status was evaluated by CT imaging every eight weeks until disease progression to assess changes in tumor mass.

Seventy-five patients were enrolled in this study with 66 (88%) having stage 4 metastatic cancer. The study demonstrated a dose-related increase in survival, as described in the figure below. At the lowest doses, no patients survived for even one year while at the highest doses up to 31% of patients survived one year.

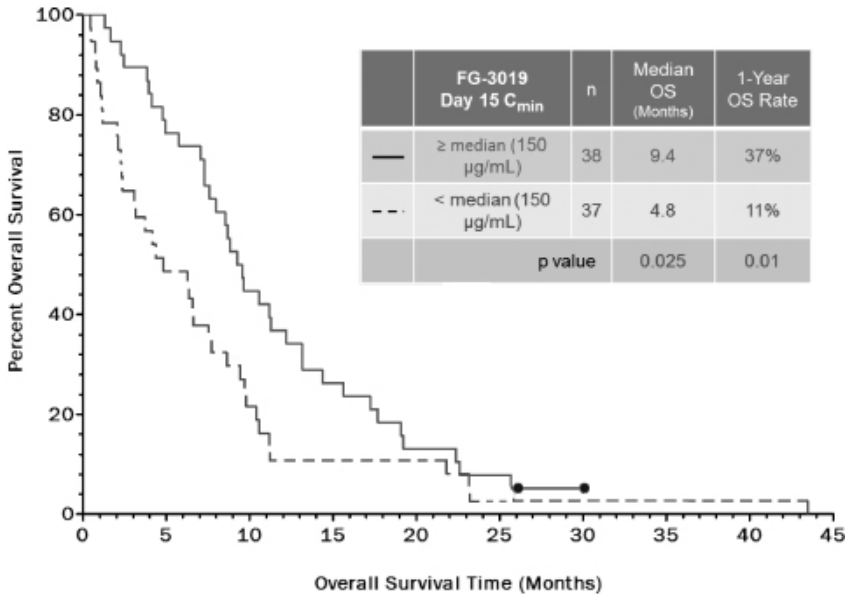
Effect of FG-3019 Dose on One Year Survival in Pancreatic Cancer



* QW = weekly; Q2W = twice weekly

A post-hoc analysis found that there was a significant relationship between survival and trough levels of plasma FG-3019 measured immediately before the second dose (Cmin), as illustrated below. Cmin greater than or equal to 150 µg/mL was associated with significantly improved progression-free survival (p=0.01) and overall survival (p=0.03) versus those patients with Cmin less than 150 µg/mL. For patients with Cmin $\geq$ 150 µg/mL median survival was 9.4 months compared to median survival of 4.8 months for patients with Cmin < 150 µg/mL. Similarly, 37% of patients with Cmin $\geq$ 150 µg/mL survived for longer than one year compared to 11% for patients with Cmin < 150 µg/mL. These data suggest that sufficient blockade of CTGF requires FG-3019 threshold blood levels of approximately 150 µg/mL in order to improve survival in patients with advanced pancreatic cancer.

Increased Pancreatic Cancer Survival Associated with Increased Plasma Levels of FG-3019



The Kaplan-Meier plot provides a representation of survival of all patients in the clinical trial. Each vertical drop in the curve represents a recorded event (death) of one or more patients. When a patient's event cannot be determined either because he or she has withdrawn from the study or because the analysis is completed before the event has occurred, that patient is "censored" and denoted by a symbol (—) on the curve at the time of the last reliable assessment of that patient.

In the study, the majority of adverse events were mild to moderate, and were consistent with those observed for erlotinib plus gemcitabine treatment without FG-3019. There were 99 treatment emergent SAEs; six of which were assessed as possibly related by the principal investigator, and 93 as not related to study treatment. We did not identify any evolving dose-dependent pattern, and higher doses of FG-3019 were not associated with higher numbers of SAEs or greater severity of the SAEs observed.

In both the KPC mouse study and in this clinical trial, FG-3019 treatment had a substantial effect on survival with no apparent increase to the toxicity of the chemotherapeutic regimen.

Clinical Development Plan for FG-3019 in Pancreatic Cancer

For pancreatic cancer, we have recently begun enrolling an open-label, randomized (1:1) Phase 2 trial (FGCL-3019-069) of FG-3019 combined with gemcitabine plus nab-paclitaxel chemotherapy versus the chemotherapy regimen alone in patients with marginally inoperable pancreatic cancer that has not been previously treated. Approximately 40 patients are expected to be treated for up to 6 months and the number may be increased based on preliminary results. The overall goal of the trial is to determine whether the FG-3019 combination can convert inoperable pancreatic cancer to operable cancer. Tumor removal is the only chance for cure of pancreatic cancer, but only 15% to 20% of patients are eligible for surgery. The use of an anti-fibrotic agent in combination with chemotherapy may shrink the tumor size enough to enable surgical removal free from major blood vessels. The patients will then be followed for disease progression and overall survival. We will also perform numerous studies of the effects of treatment on gene and protein expression using pre-treatment and post-treatment tumor biopsies.

We also plan to perform a randomized (1:1) Phase 2 trial of FG-3019 combined with gemcitabine and nab-paclitaxel compared to the chemotherapy regimen alone to assess disease progression and survival in approximately 240 patients with previously untreated metastatic pancreatic cancer. The overall goal is to confirm our open-label Phase 2 data that suggest combinations of FG-3019 and chemotherapy may increase survival. We plan to open this study for enrollment in the first half of 2015.

Liver Fibrosis

Understanding Liver Fibrosis and the Limitations of Current Therapies

Fibrosis in the liver is caused primarily by hepatitis virus infection, obesity associated disorders such as non-alcoholic steatohepatitis, or NASH, and excessive consumption of alcohol. Repetitive injury to the liver from these causes leads to worsening fibrosis culminating in liver cirrhosis, organ failure and increased risk of hepatocellular carcinoma. There are no approved pharmaceutical treatments for liver fibrosis in the United States. Treating the underlying cause of disease may stabilize or reverse fibrosis, but only liver transplantation can treat fibrosis that has advanced to cirrhosis.

Despite advances in HBV and HCV antiviral therapy, reversal of fibrosis is slow, and largely observed in patients with mild to moderate fibrosis. Nonetheless, a significant proportion of hepatitis patients have pre-cirrhotic or cirrhotic liver fibrosis and treatments that address the fibrotic process itself would provide benefit for patients with approaching liver failure. Aside from weight loss, there are no available treatments for NASH. The American Liver Foundation estimates a prevalence of 0.9 to 2.5 million cases in the United States for advanced NASH. As in other forms of fibrosis, elevated tissue and plasma levels of CTGF have correlated with disease severity.

According to the World Health Organization, about 240 million people worldwide are chronically infected with HBV and approximately 130 to 150 million people are chronically infected with HCV. NASH and non-alcoholic fatty liver disease are associated with obesity and are becoming increasingly important causes of cirrhosis. NASH has been estimated to affect 5% to 7% of the general population (Starley et al. Hepatology (2010)).

Clinical Development of FG-3019 for Liver Fibrosis

A randomized, placebo-controlled Phase 2 clinical trial is currently being conducted with FG-3019 in 120 patients with HBV-associated liver fibrosis in Hong Kong and Thailand, where the prevalence of HBV is high. The primary endpoint of the trial is change in fibrosis as assessed in liver biopsies. Efficacy data comparing low and high doses of FG-3019 compared to placebo are expected in 2015. A small pilot clinical study in HCV is also being conducted in Hong Kong.

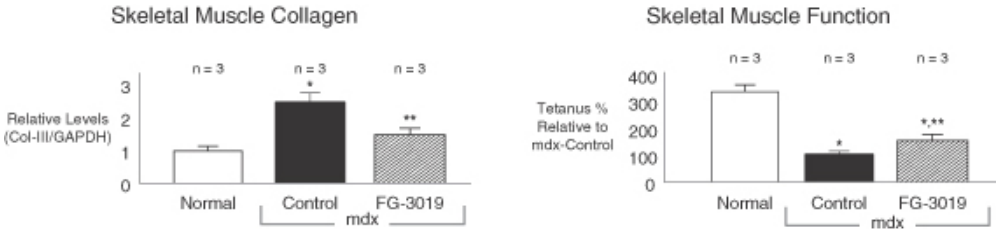
Our future clinical development strategy for liver fibrosis is under active consideration. The need and opportunity for an anti-fibrotic therapy to prevent cirrhosis associated with hepatitis and NASH patients are sizable. However, there is no regulatory consensus on study end-points because clinical manifestations of liver disease do not become apparent until fibrosis is advanced. As with HRCT for pulmonary fibrosis, the imaging technologies are improving for assessment of liver fibrosis, and we are evaluating their applicability to clinical trials for liver fibrosis. There are active efforts by the FDA and liver medical societies to focus on clinical trial design for liver fibrosis and address this challenge. Liver biopsies, the gold standard for measuring liver fibrosis, have significant risks and sample only a small portion of the liver. In a manner similar to our approach to IPF where we assess lung fibrosis by quantitative HRCT, we are currently exploring other non-invasive measurements of overall liver fibrosis, such as magnetic resonance elastography.

FG-3019 for Duchenne Muscular Dystrophy

In the United States, 1 in 3,500 boys have Duchenne muscular dystrophy, or DMD, and there are currently no approved disease-modifying treatments. Most children, despite taking steroids to mitigate progressive muscle

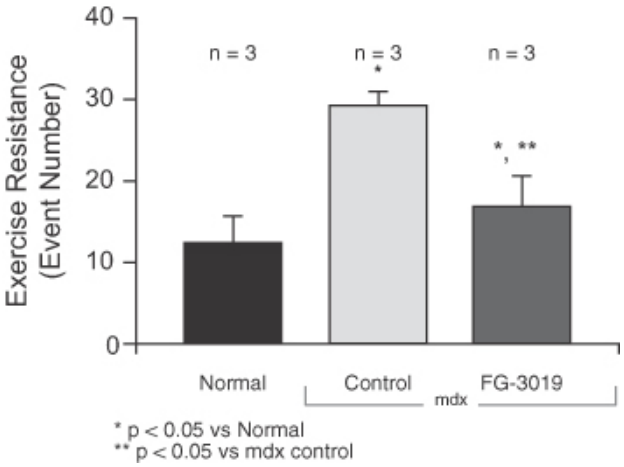
loss, are wheelchair bound by age 12, and median survival is age 25. DMD is caused by absence of the dystrophin protein resulting in abnormal muscle structure and function and buildup of fibrosis in muscle, leading to diminished mobility, pulmonary function and cardiac function. Constant myofiber breakdown results in persistent activation of myofibroblasts and altered production of ECM resulting in extensive fibrosis in skeletal muscles of DMD patients. Desguerre et al. (2009) showed that muscle fibrosis was the only myo-pathologic parameter that significantly correlated with poor motor outcome as assessed by quadriceps muscle strength, manual muscle testing of upper and lower limbs, and age at ambulation loss.

Higher CTGF levels correlate with more skeletal muscle fibrosis, and increased CTGF mRNA levels have been found in human DMD muscle and in the mdx mouse model, an accepted model of DMD (Pessina (2014)). It has also been shown in mdx mice that increased CTGF expression occurs concurrently with the progression of cardiac fibrosis, or cardiomyopathy (Au (2011)), and precedes the onset of overt cardiac dysfunction. Vial et al (2008) published results indicating that CTGF induced several ECM constituents and had an inhibitory effect on muscle cell differentiation by decreasing nuclear translocation of myogenin and myosin. CTGF treatment of myoblasts induced their de-differentiation, or failure to become mature muscle cells. These data suggest that in muscle tissue, CTGF directly impacts not just fibrosis but muscle cell phenotype. Morales (2011) showed that CTGF over-expression in tibialis anterior muscle of normal mice induced extensive skeletal muscle damage. CTGF over-expression induced fibrosis and caused a decrease of the specific isometric contractile force of the muscle. When CTGF over-expression stopped, the pathology was reversed. As compared with the mdx mouse model of DMD, both mdx mice with hemizygous CTGF gene deletion (causing a reduction of CTGF levels), and mdx mice treated with FG-3019 performed better in an exercise endurance test, had better muscle strength in isolated muscles and reduced skeletal muscle impairment, apoptotic damage and fibrosis. The figures below show decreased fibrosis (as measured by collagen) and increased muscle strength (as measured by relative tetanus %) in the FG-3019 treated mdx mice as compared to the mdx control mice.



* p < 0.05 vs Normal
** p < 0.05 vs mdx control
Morales et al. Human Molecular Genetics, 2013, Vol. 22, No. 24

The figure below shows the results in a 5-minute treadmill exercise tolerance test performed by Morales, Hum Mol Genet-Suppl Data (2013). The FG-3019-treated mdx mice stopped fewer times to rest than the untreated mdx mice (mdx-Control), and were more similar to normal mice.



In a 2009/2010 study, which we used in support of our patent titled “Methods for Treatment of Muscular Dystrophy” issued in 2014, Brandan et al. found that there was a tendency of FG-3019 to increase contraction of the diaphragm muscle in a limited number of FG-3019-treated mdx mice on an electromyographic test, as compared with untreated mdx mice. These results suggest the potential for improvement of respiratory function using this therapeutic approach.

We currently plan to conduct a clinical trial with FG-3019 to assess its ability to impact muscle pathology and improve muscle function in DMD patients. We have plans to work with the TREAT-NMD Advisory Committee for Therapeutics to refine clinical trial design and optimize target patients and appropriate endpoint measures.

FG-3019 for Radiation Countermeasures

The National Institute of Allergy and Infectious Diseases, or NIAID, has sponsored the consortium, Medical Countermeasures Against Radiological Threats, or MCART, to develop medical countermeasures to treat the key pathological conditions and delayed effects resulting from acute radiation exposure. MCART is mandated to develop animal models that adhere to all criteria of FDA’s *Guidance for Industry Product Development Under the Animal Rule* (May 2014). Under this draft FDA guidance, the FDA may grant conditional marketing approval based on adequate and well-controlled animal efficacy studies when human challenge studies would not be ethical and field trials after accidental or intentional human exposure have not been feasible, provided the results of those animal studies establish that the drug is reasonably likely to produce clinical benefit and certain other conditions are met.

FibroGen has initiated discussions with MCART at the University of Maryland regarding evaluation of FG-3019 in their established model of whole thorax lung irradiation (WTLI) in non-human primates. If efficacy can be demonstrated in non-human primates comparable to that achieved in the radiation inducted fibrosis in mice, it could enable limited FDA approval of FG-3019 as a medical countermeasure. Such an approval could potentially lead to procurement of FG-3019 for national health security.

Other Potential Indications for FG-3019

We believe that FG-3019 has potential to be a treatment for cancers and a broad array of fibrotic disorders, including:

- Cancers—melanoma, breast cancer, and squamous cell lung carcinoma for which there is an estimated U.S. prevalence of over 80,000 patients.
- Lung—scleroderma lung disease
- Liver—NASH, graft rejection
- Kidney—diabetic nephropathy, focal segmental glomerular sclerosis
- Cardiovascular system—congestive heart failure, pulmonary arterial hypertension

Investigational New Drug and Clinical Trial Applications

FG-3019 is being studied in the United States for the treatment of IPF under an IND that we submitted to the FDA in August 2003. FG-3019 is also being studied in the United States for the treatment of locally advanced or metastatic pancreatic cancer under an IND that we submitted to the FDA in September 2004. We have not submitted an IND for liver fibrosis as the Phase 2 clinical studies are being conducted in Hong Kong and Thailand. We submitted the CTA for FG-3019 in liver fibrosis in Thailand in September 2012 and two clinical trial certificates (CTA equivalent) for FG-3019 in liver fibrosis in Hong Kong in May of 2010 and March of 2013. We have not submitted an IND for Duchenne muscular dystrophy as it is still in the preclinical phase of development.

Commercialization Strategy for FG-3019

Our goal, if FG-3019 is successful, is to be a leader in the development and commercialization of novel approaches for inhibiting deep organ fibrosis and treating some forms of cancer. To date, we have retained exclusive worldwide rights for FG-3019. We plan to retain commercial rights to FG-3019 in North America and will also continue to evaluate the opportunities to establish co-development partnerships for FG-3019 as well as commercialization collaborations for territories outside of North America.

COLLABORATIONS

Our Collaboration Partnerships for Roxadustat

Astellas

We have two agreements with Astellas for the development and commercialization of roxadustat, one for Japan, and one for Europe, the Commonwealth of Independent States, the Middle East and South Africa. Under these agreements we provided Astellas the right to develop and commercialize roxadustat for anemia in these territories.

We share responsibility with Astellas for clinical development activities required for United States and EU regulatory approval of roxadustat, and share equally those development costs under the agreed development plan for such activities. Astellas will be responsible for clinical development activities and all associated costs required for regulatory approval in all other countries in the Astellas territories. Astellas will own and have responsibility for regulatory filings in its territories. We are responsible, either directly or through our contract manufacturers, for the manufacture and supply of all quantities of roxadustat to be used in development and commercialization under the agreements.

The Astellas agreements will continue in effect until terminated. Either party may terminate the agreements for certain material breaches by the other party. In addition, Astellas will have the right to terminate the agreements

for certain specified technical product failures, upon generic sales reaching a particular threshold, upon certain regulatory actions, or upon our entering into a settlement admitting the invalidity or unenforceability of our licensed patents. Astellas may also terminate the agreements for convenience upon advance written notice to us. In the event of any termination of the agreements, Astellas will transfer and assign to us the regulatory filings for roxadustat and will assign or license us the relevant trademarks used with the products in the Astellas territories. Under certain terminations, Astellas is also obligated to pay us a termination fee.

Consideration under these agreements includes a total of $360.1 million in upfront and non-contingent payments, and milestone payments totaling $557.5 million, of which $542.5 million are development and regulatory milestones, and $15.0 million are commercial-based milestones. Total consideration, excluding development cost reimbursement and product sales-related payments, could reach $917.6 million. The aggregate amount of such consideration received through September 30, 2014 totals $462.6 million.

Additionally, under these agreements, Astellas pays 100% of the commercialization costs in their territories. Astellas will pay us a transfer price for our manufacture and delivery of roxadustat based on a calculation based on net sales of roxadustat in the low 20% range.

In addition, Astellas has separately invested $80.5 million in the preferred stock of FibroGen, Inc. to date.

AstraZeneca

We also have two agreements with AstraZeneca for the development and commercialization of roxadustat for anemia, one for China, or the China agreement, and one for the United States and all other countries not previously licensed to Astellas (the RoW), or the U.S. / RoW agreement. Under these agreements we provided AstraZeneca the right to develop and commercialize roxadustat for anemia in these territories.

We will share responsibility with AstraZeneca for clinical development activities required for United States regulatory approval of roxadustat. AstraZeneca will be responsible for all of our development costs incurred under the agreed development plan for roxadustat in the United States and EU, to the extent those costs are not covered by Astellas, after an initial 50% development cost sharing period in which our funding obligations are limited to a total of $116.5 million. Thereafter, AstraZeneca will be solely responsible for additional development costs for all such costs. In China, our subsidiary FibroGen China will conduct the development work for CKD anemia and will hold all of the regulatory licenses issued by China regulatory authorities and be primarily responsible for regulatory, clinical and manufacturing. China development costs are shared 50/50. AstraZeneca is also responsible for 100% of development expenses in all other licensed territories outside of China. We are responsible, through our contract manufacturers, for the manufacture and supply of all quantities of roxadustat to be used in development and commercialization under the agreements.

Under the AstraZeneca agreements, we receive upfront and subsequent non-contingent payments totaling $402.2 million, which we expect to receive in various amounts through 2015, and including a $62 million time based development milestone which became non-contingent as of July 30, 2014. Potential milestone payments under the agreements total $1.2 billion, of which $571.0 million are development and regulatory milestones, and $652.5 million are commercial-based milestones. Total consideration under the agreements, excluding development cost reimbursement, transfer price payments, royalties and profit share, could reach $1.6 billion. The aggregate amount of such consideration received through September 30, 2014 totals $220.2 million.

Payments under these agreements include over $500 million in upfront, non-contingent and other payments received or expected to be received prior to the first U.S. approval, excluding development expense reimbursement.

Under the U.S./RoW agreement, AstraZeneca may, subject to certain conditions, purchase $20 million of our common stock at the initial public offering price in a concurrent sale with this offering, or pay us $20 million at

the time of this offering, and in any event no later than December 15, 2015. AstraZeneca has elected to enter into an agreement to purchase shares of our common stock with an aggregate purchase price of $20 million in a separate private placement concurrent with the completion of this offering at a price per share equal to the initial public offering price. The sale of these shares will not be registered under the Securities Act. The closing of this offering is not conditioned upon the closing of such concurrent private placement, and if the offering is not completed by December 1, 2015, then AstraZeneca remains obligated to pay us $20 million no later than December 15, 2015. In connection with the purchase of our shares of common stock in the concurrent private placement AstraZeneca has also entered into a standstill agreement which provides that for five years following the date of the final prospectus for this offering, neither AstraZeneca nor its representatives will, directly or indirectly, among other things, acquire any additional securities or assets of ours, solicit proxies for our securities, participate in a business combination involving us, or seek to influence our management or policies, except with the prior consent of our board of directors and in certain other specified circumstances involving a change of control of our company. In addition, AstraZeneca has agreed to vote its shares in favor of nominees to our board of directors, increases in the authorized capital stock of the company and amendments to our equity plans approved by the board of directors, in each case as recommended by a majority of our board of directors. AstraZeneca has also agreed, subject to specified exceptions, not to sell shares purchased by it in the concurrent private placement for the two-year period following such purchase and to limitations on the volume of its sales of such shares thereafter. In addition, AstraZeneca will agree to enter into a 180-day lock-up agreement in favor of the underwriters in this offering.

Under the U.S./RoW agreement, AstraZeneca will pay for all commercialization costs in the U.S. and RoW, AstraZeneca will be responsible for the United States commercialization of roxadustat, with FibroGen undertaking specified promotional activities in the ESRD segment in the United States. In addition, we will receive a transfer price for delivery of commercial product based on a percentage of net sales in the low- to mid-single digit range and AstraZeneca will pay us a tiered royalty on net sales of roxadustat in the low 20% range.

Under the China agreement, which is conducted through FibroGen China, the commercial collaboration is structured as a 50/50 profit share. AstraZeneca will conduct commercialization activities in China as well as serve as the master distributor for roxadustat and will fund roxadustat launch costs in China until FibroGen China has achieved profitability. At that time, AstraZeneca will recoup 50% of their historical launch costs out of initial roxadustat profits in China.

AstraZeneca may terminate the U.S./RoW agreement upon specified events, including our bankruptcy or insolvency, our uncured material breach, technical product failure, or upon 180 days prior written notice at will. If AstraZeneca terminates the U.S/RoW agreement at will, in addition to any unpaid non-contingent payments, it will be responsible to pay for a substantial portion of the post-termination development costs under the agreed development plan until regulatory approval.

AstraZeneca may terminate the China agreement upon specified events, including our bankruptcy or insolvency, our uncured material breach, technical product failure, or upon advance prior written notice at will. If AstraZeneca terminates our China agreement at will, it will be responsible to pay for transition costs as well as make a specified payment to FibroGen China.

In the event of any termination of the agreements, but subject to modification upon termination for technical product failure, AstraZeneca will transfer and assign to us the regulatory filings and approvals for roxadustat in the affected territories, grant us licenses and conduct certain transition activities.

COMPETITION

The pharmaceutical and biotechnology industries are highly competitive, particularly in some of the indications we are developing drug candidates, including anemia in CKD, IPF, pancreatic cancer and liver fibrosis. We face competition from multiple other pharmaceutical and biotechnology companies, many of which have significantly

greater financial, technical and human resources and experience in product development, manufacturing and marketing. These potential advantages of our competitors are particularly a risk in IPF, pancreatic cancer and liver fibrosis, where we do not currently have a development or commercialization partner.

We expect any products that we develop and commercialize to compete on the basis of, among other things, efficacy, safety, convenience of administration and delivery, price, the level of generic competition and the availability of reimbursement from government and other third party payors.

If either of our lead product candidates is approved, they will compete with currently marketed products, and product candidates that may be approved for marketing in the future, for treatment of the following indications:

Roxadustat—Anemia in CKD

If roxadustat is approved for the treatment of anemia in patients with CKD, competing drugs are expected to include ESAs such as epoetin alfa (EPOGEN® marketed by Amgen Inc. in the United States, Procrit® marketed by Johnson & Johnson, Inc. in the United States, and Eprex® also marketed by Johnson & Johnson in other markets and Espo® marketed by Kyowa Hakko Kirin, or KHK, in Japan and China), darbepoetin (Aranesp® marketed by Amgen in the United States and Europe, and by KHK in Hong Kong; NESP® marketed by KHK in Japan, Korea, Singapore, Taiwan, Thailand), as well as Mircera® (marketed by Hoffmann-La Roche, or Roche, in Europe and approved in the United States) and NeoRecormon®/Epogin® (marketed by Roche in China and Japan). ESAs have been the standard of care in the treatment of anemia in CKD for over 20 years, serving a significant majority of dialysis patients as well as those non-dialysis patients receiving anemia therapy under nephrology care. Physicians and patients may be reluctant to switch to roxadustat from products with which they have become familiar.

We, and our collaboration partners, will also likely face competition from potential new anemia therapies currently in clinical development. For example, while roxadustat is currently the only HIF-PH inhibitor in Phase 3 development, Akebia Pharmaceuticals, Inc., Bayer Corporation and GlaxoSmithKline plc are all in Phase 2 development of HIF-PH inhibitor product candidates for anemia indications. We may face competition for patient recruitment and enrollment for clinical trials and potentially in commercial sales. In addition, Acceleron Pharma Inc., in partnership with Celgene Corporation, is in Phase 2 development of protein therapeutic candidates to treat anemia and associated complications in patients with b-thalassemia and MDS, and recently received orphan drug status for sotatercept. Noxxon Pharma AG is developing an anti-hepcidin Spiegelmer® (NOX-H94) a mirror image of a natural oligonucleotide, is in Phase 2 development in cancer for the treatment of anemia associated with chronic disease.

The introduction of biosimilars for ESAs into the U.S. market may also increase the competition for roxadustat. A biosimilar product is a follow-on version of an existing, branded biologic product. Under current laws, an application for a biosimilar product should not be approved by the FDA until 12 years after the existing, patent-protected product was approved under a BLA. The patents for epoetin alfa (EPOGEN) expired in 2004 in the EU, and in the United States the remaining patents will expire by 2015. Several biosimilar versions of currently marketed ESAs are available for sale in the EU and many other markets, and several biosimilar versions of epoetin alfa are currently under development, including in the United States. In China, biosimilars of epoetin alfa are offered by Chinese pharmaceutical companies such as EPIAO marketed by 3SBio Inc. and Xue Da Sheng marketed by Hayao Biological.

Two of the largest operators of dialysis clinics in the United States, DaVita Healthcare Partners Inc., or DaVita, and Fresenius Medical Care AG & Co. KGaA, or Fresenius, collectively represent more than 60% of the dialysis market in the United States, and have entered into long-term supply agreements with Amgen that began in January 2012 for 7 years and 3 years, respectively. DaVita is committed to purchase over 90% of its anemia drug needs under an exclusive arrangement. The Fresenius arrangement is non-exclusive. Successful penetration in this market would require a significant agreement with at least either Fresenius or DaVita, on favorable terms and on a timely basis. The currently marketed ESA products are also supported by large pharmaceutical companies with greater experience and expertise in commercialization in the anemia market, including securing

reimbursement, government contracts and relationships with key opinion leaders. We expect that significant resources will be required from us and our collaboration partners, AstraZeneca and Astellas, to overcome the challenges of bringing a new product into an established market with concentrated buyers.

FG-3019

We are currently in Phase 2 development of FG-3019 to treat IPF, pancreatic cancer and liver fibrosis. Most of our competitors have significantly more resources and expertise in development, commercialization and manufacturing, particularly due to the fact that we have not yet established a co-development partnership for FG-3019. For example, both InterMune and Boehringer Ingelheim Pharma GmbH & Co. KG, who are seeking approval for product candidates for the treatment of IPF in the United States, have successfully developed and commercialized drugs in various indications and have built sales organizations that we do not currently have; both have more resources and more established relationships when competing with us for patient recruitment and enrollment for clinical trials or, if we are approved, in the market.

Idiopathic Pulmonary Fibrosis

If approved to treat IPF, FG-3019 would compete with pirfenidone, which is approved for marketing in Europe, Canada and Japan. As of October 2014, InterMune has obtained approval in the United States for pirfenidone for the treatment of IPF and Boehringer Ingelheim has obtained approval in the United States for nintedanib for the treatment of IPF. Nintedanib has also been submitted for accelerated approval in the EU. We believe that if FG-3019 can be shown to safely stabilize or reverse lung fibrosis, and thus stabilize or improve lung function, it can compete with pirfenidone and nintedanib for market share in IPF. However, it may be difficult to encourage treatment providers and patients to switch to FG-3019 from a product they are already familiar with. We will also likely face competition from potential new IPF therapies.

FG-3019 is an injectable protein, which may be more expensive and less convenient than small molecules such as nintedanib and pirfenidone. Other potential competitive product candidates in various stages of Phase 2 development for IPF include Gilead Sciences, Inc.'s simtuzumab, Celgene Corporation's CC-4047 and CC-930, Janssen Biotech, Inc. and Johnson & Johnson Inc.'s CNTO-888, Sanofi's GC-1008, Novartis' QAX-576 and Biogen Idec's STX-100.

Pancreatic Cancer

We are developing FG-3019 to be used in combination with Abraxane® (nab-paclitaxel) and gemcitabine in pancreatic cancer. Celgene's Abraxane was launched in the United States and Europe in 2013 and 2014, respectively, and was the first drug approved in this disease in nearly a decade. Merrimack Pharmaceuticals, Inc. is currently conducting a pivotal Phase 3 clinical trial of MM-398 for the treatment of patients with metastatic pancreatic cancer who have previously failed treatment with gemcitabine. In addition, treatments for cancer are often used in combination instead of as monotherapy; thus, we also face competition for FG-3019 from other agents seeking approval in conjunction with gemcitabine and Abraxane. Examples include: Threshold Pharmaceuticals, Inc. in partnership with Merck KGaA, is in Phase 3 clinical trials of its compound TH-302 in combination with gemcitabine and in Phase 1 clinical trials for TH-302 in combination with gemcitabine and Abraxane, for the treatment of pancreatic cancer; Gilead Sciences, Inc. is in Phase 2 clinical trials of its anti-fibrotic drug candidate, simtuzumab, in combination with gemcitabine for the treatment of pancreatic cancer; and Halozyme Therapeutics, Inc. is in Phase 2 clinical trials to treat pancreatic cancer with its compound PEGPH20 in combination with gemcitabine and Abraxane.

There are a number of other product candidates in clinical trials for pancreatic cancer, many of which are in combination with existing chemotherapies, as both first-line and second-line therapy for metastatic pancreatic cancer. We will not only face a large number of product candidates competing for patient recruitment and enrollment for our clinical trials, but we could also face a substantial number of competitors if FG-3019 is approved for the treatment of pancreatic cancer.

Liver Fibrosis

If approved to treat HBV and HCV associated liver fibrosis, FG-3019 would compete with advances in HBV and HCV antiviral therapy, which may significantly decrease the potential market for FG-3019 in liver fibrosis. HBV and HCV therapies include: Gilead's sofosbuvir (Sovaldi®), entecavir (Baraclude®), adefovir (Hepsera®), lamivudine (Epivir®), simeprevir (Olysio®), tenofovir (Viread®), telbivudine (Tyzeka®), boceprevir, telaprevir and interferon alpha-2a and PEGylated interferon alpha-2a (Pegasys®). Nonetheless, a significant proportion of hepatitis patients have pre-cirrhotic or cirrhotic liver fibrosis and treatments that address the fibrotic process itself could provide benefit for patients with approaching liver failure. Potential antifibrotic competitors in the area of liver fibrosis include Gilead's simtuzumab and Intercept Pharmaceuticals, Inc.'s obeticholic acid (OCA).

MANUFACTURE AND SUPPLY

We have historically and in the future plan to continue to enter into contractual arrangements with qualified third-party manufacturers to manufacture and package our products and product candidates for territories outside of China. We believe that this manufacturing strategy enables us to more efficiently direct financial resources to the research, development and commercialization of product candidates rather than diverting resources to establishing a significant internal manufacturing infrastructure, unless there is additional strategic value for establishing manufacturing capabilities, such as in China. As our product candidates proceed through development, we are discussing the timing of entry into longer term commercial supply agreements with key suppliers and manufacturers in order to meet the ongoing and planned clinical and commercial supply needs for ourselves and our partners. Our timing of entry into these agreements is based on the current development plans for roxadustat, FG-3019 and FG-5200.

Roxadustat

Roxadustat is a small-molecule drug manufactured from generally available commercial starting materials and chemical technologies and multi-purpose equipment available from many third party contract manufacturers. Our third party manufacturers of roxadustat Phase 3 study material include Shanghai SynTheAll Pharmaceutical Co., Ltd. and STA Pharmaceutical Hong Kong Limited and their respective affiliates, or collectively WuXi STA, and Catalent Pharma Solutions, or Catalent. WuXi STA is located in China and currently supplies our API, and intermediate needs for those materials used in our Phase 3 clinical trials. WuXi STA has passed inspections by several regulatory agencies, including the FDA and CFDA, and is cGMP compliant. Catalent is located in the United States and supplies our Phase 3 tablet materials and provides tablet development services. Catalent has passed several regulatory inspections, including by the FDA, and manufactures commercial products for other clients.

To date, we believe that roxadustat has been manufactured under current Good Manufacturing Practices, or cGMP, regulations and in compliance with applicable regulatory requirements for the manufacture of drug substance and drug product used in clinical trials and we and Astellas have performed audits of the existing roxadustat manufacturers. The intended commercial manufacturing route outside of China has been successfully scaled up to multiple hundred kilogram scale and produced more than a metric ton of roxadustat drug substance. We are in discussions with multiple parties, including WuXi STA and other potential suppliers regarding longer term commercial supply arrangements.

In China, we plan to use the clinical material from WuXi STA and will conduct bioequivalence tests before NDA product manufactured at the FibroGen China manufacturing facility in China. We plan to use API and drug product from our FibroGen China manufacturing facility upon commercialization. Until our FibroGen China manufacturing facility is qualified and licensed for the China market, we have no internal manufacturing capabilities and will continue to rely on external contract manufacturers. Even when our manufacturing facility is available to manufacture in and for China, we may use contract manufacturers to supplement commercial supply for China. We do not expect to manufacture from our China facility for use outside of China.

Irix Letter Agreement

In July 2002, we and IRIX Pharmaceuticals, Inc., a third party manufacturer, entered into a Letter of Agreement for IRIX Pharmaceuticals Single Source Manufacturing Agreement, or the Letter of Agreement, in connection with a contract manufacturing arrangement for clinical supplies of HIF-PH inhibitors, including roxadustat. The Letter of Agreement contained a service agreement that included terms and schedule for the delivery of clinical materials, and also included a term sheet for a single source agreement for the GMP manufacture of HIF-PH inhibitors, including roxadustat. Specifically, pursuant to the Letter of Agreement, we and IRIX agreed to negotiate a single source manufacturing agreement that included a first right to negotiate a manufacturing contract for HIF-PH inhibitors, including roxadustat, provided that IRIX is able to match any third party bids within 5%, and the exclusive right to manufacture extends for five years after approval of an NDA. Any agreement would provide that no minimum amounts would be specified until appropriate by forecast, that we and our commercialization partner would have the rights to contract with independent third parties that exceed IRIX's internal capabilities or in the event that we or our commercialization partner determines for reasons of continuity and security that such a need exists, provided that IRIX would supply a majority of the product if it is able to meet the requirements and the schedule required by us and our partner. Subsequent to the Letter of Agreement, we and IRIX have entered into several additional service agreements. IRIX has requested in writing that we honor the Letter of Agreement with respect to the single source manufacturing agreement. To date, we have offered to IRIX opportunities to bid for the manufacture of HIF-PH inhibitors, including roxadustat.

FG-3019

To date, FG-3019 has been manufactured using specialized biopharmaceutical process techniques under an agreement with a qualified third party contract manufacturer, Boehringer Ingelheim. Our contract manufacturer is the sole source for the current clinical supply of the drug substance and drug product for FG-3019. Our contract manufacturer is only obligated to supply the amounts of FG-3019 as agreed on pursuant to work orders that are executed from time to time under our agreement as we determine need for clinical material, and we are not required to make fixed or minimum annual purchases. Our existing agreement allows us to transfer the cell line manufacturing process to another third party manufacturer at our expense, and our contractor is obligated to provide reasonable technology transfer assistance in the event of such a transfer.

FG-5200

The manufacture of FG-5200 requires three distinct steps under cGMP and involves three parties in three locations. Our proprietary recombinant human collagen is produced under contract by a third party in Finland. After quality assurance release, the material is then shipped to our vendor for conversion to a freeze-dried form suitable for production of the FG-5200 medical device. We are currently designing a fabrication plant within the FibroGen China manufacturing facility where the freeze dried collagen will be shipped for the production of FG-5200, first for preclinical and clinical testing using a small scale, pilot process and then potentially as an automated process for commercial use.

GOVERNMENT REGULATION

The clinical testing, manufacturing, labeling, storage, distribution, record keeping, advertising, promotion, import, export and marketing, among other things, of our product candidates are subject to extensive regulation by governmental authorities in the United States and other countries. The process of obtaining regulatory approvals and the subsequent compliance with appropriate federal, state, local and foreign statutes and regulations, including in Europe and China, requires the expenditure of substantial time and financial resources. Failure to comply with the applicable requirements at any time during the product development process, approval process or after approval may subject an applicant and/or sponsor to a variety of administrative or judicial sanctions, including refusal by the applicable regulatory authority to approve pending applications, withdrawal of an approval, imposition of a clinical hold, issuance of warning letters and other types of letters, product recalls,

product seizures, total or partial suspension of production or distribution, injunctions, fines, refusals of government contracts, restitution, disgorgement of profits, or civil or criminal investigations and penalties brought by FDA and the Department of Justice, or other governmental entities.

U.S. Product Approval Process

In the United States, the FDA regulates drugs and biological products, or biologics, under the Public Health Service Act, as well as the FDCA which is the primary law for regulation of drug products. Both drugs and biologics are subject to the regulations and guidance implementing these laws. Pharmaceutical products are also subject to regulation by other governmental agencies, such as the Federal Trade Commission, the Office of Inspector General of the U.S. Department of Health and Human Services, the Consumer Product Safety Commission and the Environmental Protection Agency. The clinical testing, manufacturing, labeling, storage, distribution, record keeping, advertising, promotion, import, export and marketing, among other things, of our product candidates are subject to extensive regulation by governmental authorities in the United States and other countries. The steps required before a drug or biologic may be approved for marketing in the United States generally include:

- Preclinical laboratory tests and animal tests conducted under Good Laboratory Practices.
- The submission to the FDA of an Investigational New Drug application, or IND application for human clinical testing, which must become effective before each human clinical trial commence.
- Adequate and well-controlled human clinical trials to establish the safety and efficacy of the product and conducted in accordance with Good Clinical Practices.
- The submission to the FDA of an NDA, in the case of a small molecule drug product, or a Biologic License Application, or BLA, in the case of a biologic product.
- FDA acceptance, review and approval of the NDA or BLA, as applicable.
- Satisfactory completion of an FDA inspection of the manufacturing facilities at which the product is made to assess compliance with cGMPs.

The testing and approval process requires substantial time, effort and financial resources, and the receipt and timing of any approval is uncertain. The FDA may suspend clinical trials at any time on various grounds, including a finding that the subjects or patients are being exposed to a potentially unacceptable health risk.

Preclinical studies include laboratory evaluations of the product candidate, as well as animal studies to assess the potential safety and efficacy of the product candidate. Preclinical studies must be conducted in compliance with FDA regulations regarding GLPs. The results of the preclinical studies, together with manufacturing information and analytical data, are submitted to the FDA as part of the IND, which includes the results of preclinical testing and a protocol detailing, among other things, the objectives of the clinical trial, the parameters to be used in monitoring safety and the effectiveness criteria to be evaluated if the first phase or phases of the clinical trial lends themselves to an efficacy determination. The IND will become effective automatically 30 days after receipt by the FDA, unless the FDA raises concerns or questions about the conduct of the trials as outlined in the IND prior to that time. In this case, the IND sponsor and the FDA must resolve any outstanding concerns before clinical trials can proceed. The IND must become effective before clinical trials may be commenced.

Clinical trials involve the administration of the product candidates to healthy volunteers, or subjects, or patients with the disease to be treated under the supervision of a qualified principal investigator. Clinical trials must be conducted under the supervision of one or more qualified principal investigators in accordance with GCPs and in accordance with protocols detailing the objectives of the applicable phase of the trial, dosing procedures, research subject selection and exclusion criteria and the safety and effectiveness criteria to be evaluated. Progress reports detailing the status of clinical trials must be submitted to the FDA annually. Sponsors must also timely report to the FDA serious and unexpected adverse events, any clinically important increase in the rate of a serious suspected adverse

event over that listed in the protocol or investigator's brochure, or any findings from other studies or tests that suggest a significant risk in humans exposed to the product candidate. Further, the protocol for each clinical trial must be reviewed and approved by an independent institutional review board, or IRB, either centrally or individually at each institution at which the clinical trial will be conducted. The IRB will consider, among other things, ethical factors, and the safety of human subjects and the possible liability of the institution.

Clinical trials are typically conducted in three sequential phases prior to approval, but the phases may overlap and different trials may be initiated with the same drug candidate within the same phase of development in similar or different patient populations. These phases generally include the following:

Phase 1. Phase 1 clinical trials represent the initial introduction of a product candidate into human subjects, frequently healthy volunteers. In Phase 1, the product candidate is usually tested for pharmacodynamic and pharmacokinetic properties such as safety, including adverse effects, dosage tolerance, absorption, distribution, metabolism and excretion.

Phase 2. Phase 2 clinical trials usually involve studies in a limited patient population to (1) evaluate the efficacy of the product candidate for specific indications, (2) determine dosage tolerance and optimal dosage and (3) identify possible adverse effects and safety risks.

Phase 3. If a product candidate is found to be potentially effective and to have an acceptable safety profile in Phase 2 studies, the clinical trial program will be expanded to Phase 3 clinical trials to further evaluate clinical efficacy, optimal dosage and safety within an expanded patient population at geographically dispersed clinical study sites.

Phase 4. Phase 4 clinical trials are conducted after approval to gain additional experience from the treatment of patients in the intended therapeutic indication and to document a clinical benefit in the case of drugs approved under accelerated approval regulations, or when otherwise requested by the FDA in the form of post-market requirements or commitments. Failure to promptly conduct any required Phase 4 clinical trials could result in withdrawal of approval.

The results of preclinical studies and clinical trials, together with detailed information on the manufacture, composition and quality of the product candidate, are submitted to the FDA in the form of an NDA (for a drug) or BLA (for a biologic), requesting approval to market the product. The application must be accompanied by a significant user fee payment. The FDA has substantial discretion in the approval process and may refuse to accept any application or decide that the data is insufficient for approval and require additional preclinical, clinical or other studies.

Review of Application

Once the NDA or BLA submission has been accepted for filing, which occurs, if at all, 60 days after submission, the FDA informs the applicant of the specific date by which the FDA intends to complete its review. This is typically 12 months from the date of submission. The review process is often extended by FDA requests for additional information or clarification. The FDA reviews NDAs and BLAs to determine, among other things, whether the proposed product is safe and effective for its intended use, and whether the product is being manufactured in accordance with cGMP to assure and preserve the product's identity, strength, quality and purity. Before approving an NDA or BLA, the FDA may inspect the facilities at which the product is manufactured and will not approve the product unless the manufacturing facility complies with cGMPs and will also inspect clinical trial sites for integrity of data supporting safety and efficacy. During the approval process, the FDA also will determine whether a risk evaluation and mitigation strategy, or REMS, is necessary to assure the safe use of the product. If the FDA concludes a REMS is needed, the sponsor of the application must submit a proposed REMS; the FDA will not approve the application without an approved REMS, if required. A REMS can substantially increase the costs of obtaining approval. The FDA may also convene an advisory committee of external experts to provide input on certain review issues relating to risk, benefit and interpretation of clinical trial data. The FDA may delay approval of an NDA if applicable regulatory criteria are not satisfied and/or the

FDA requires additional testing or information. The FDA may require post-marketing testing and surveillance to monitor safety or efficacy of a product. FDA will issue either an approval of the NDA or BLA or a Complete Response Letter detailing the deficiencies and information required in order for reconsideration of the application.

Pediatric Exclusivity and Pediatric Use

Under the Best Pharmaceuticals for Children Act, or BPCA, certain drugs or biologics may obtain an additional six months of exclusivity in an indication, if the sponsor submits information requested in writing by the FDA, or a Written Request, relating to the use of the active moiety of the drug or biologic in children. The FDA may not issue a Written Request for studies on unapproved or approved indications or where it determines that information relating to the use of a drug or biologic in a pediatric population, or part of the pediatric population, may not produce health benefits in that population.

We have not received a Written Request for such pediatric studies with respect to our product candidates, although we may ask the FDA to issue a Written Request for studies in the future. To receive the six-month pediatric market exclusivity, we would have to receive a Written Request from the FDA, conduct the requested studies in accordance with a written agreement with the FDA or, if there is no written agreement, in accordance with commonly accepted scientific principles, and submit reports of the studies. A Written Request may include studies for indications that are not currently in the labeling if the FDA determines that such information will benefit the public health. The FDA will accept the reports upon its determination that the studies were conducted in accordance with and are responsive to the original Written Request, agreement, or commonly accepted scientific principles, as appropriate, and that the reports comply with the FDA's filing requirements.

In addition, the Pediatric Research Equity Act, or PREA, requires a sponsor to conduct pediatric studies for most drugs and biologicals, for a new active ingredient, new indication, new dosage form, new dosing regimen or new route of administration. Under PREA, original NDAs, BLAs and supplements thereto must contain a pediatric assessment unless the sponsor has received a deferral or waiver. The required assessment must include the evaluation of the safety and effectiveness of the product for the claimed indications in all relevant pediatric subpopulations and support dosing and administration for each pediatric subpopulation for which the product is safe and effective. The FDA, on its own initiative or at the request of the sponsor, may request a deferral of pediatric studies for some or all of the pediatric subpopulations. A deferral may be granted by FDA if they believe that additional safety or effectiveness data in the adult population needs to be collected before the pediatric studies begin. After April 2013, the FDA must send a non-compliance letter to any sponsor that fails to submit the required assessment, keep a deferral current or fails to submit a request for approval of a pediatric formulation.

Post-Approval Requirements

Even after approval, drugs and biologics manufactured or distributed pursuant to FDA approvals are subject to continuous regulation by the FDA, including, among other things, requirements relating to recordkeeping, periodic reporting, product distribution, advertising and promotion and reporting of adverse experiences with the product. After approval, most changes to the approved product, such as adding new indications or other labeling claims are subject to prior FDA review and approval. There also are continuing, annual user fee requirements for any marketed products and the establishments at which such products are manufactured, as well as new application fees for supplemental applications with clinical data.

The FDA may impose a number of post-approval requirements as a condition of approval of an NDA or BLA. For example, the FDA may require post-marketing testing, including Phase 4 clinical trials, and surveillance to further assess and monitor the product's safety and effectiveness after commercialization.

In addition, entities involved in the manufacture and distribution of approved drugs and biologics are required to register their establishments with the FDA and state agencies, and are subject to periodic unannounced

inspections by the FDA and these state agencies for compliance with cGMP requirements. Changes to the manufacturing process are strictly regulated and often require prior FDA approval before being implemented. FDA regulations also require investigation and correction of any deviations from cGMP and impose reporting and documentation requirements upon the sponsor and any third-party manufacturers that the sponsor may decide to use. Accordingly, manufacturers must continue to expend time, money, and effort in the area of production and quality control to maintain cGMP compliance.

Once an approval is granted, the FDA may withdraw the approval if compliance with regulatory requirements and standards is not maintained or if problems occur after the product reaches the market. Later discovery of previously unknown problems with a product, including adverse events of unanticipated severity or frequency, or with manufacturing processes, or failure to comply with regulatory requirements, may also result in revisions to the approved labeling to add new safety information; imposition of post-market studies or clinical trials to assess new safety risks; or imposition of distribution or other restrictions under a REMS program. Other potential consequences include, among other things:

- Restrictions on the marketing or manufacturing of the product, complete withdrawal of the product from the market or product recalls.
- Fines, warning letters or holds on post-approval clinical trials.
- Refusal of the FDA to approve pending NDAs or BLAs or supplements to approved NDAs or BLAs, or suspension or revocation of product license approvals.
- Product seizure or detention, or refusal to permit the import or export of products.
- Injunctions or the imposition of civil or criminal penalties.

The FDA strictly regulates marketing, labeling, advertising and promotion of products that are placed on the market. Drugs may be promoted only for the approved indications and in accordance with the provisions of the approved label. The FDA and other agencies actively enforce the laws and regulations prohibiting the promotion of off-label uses, and a company that is found to have improperly promoted off-label uses may be subject to significant liability.

Prescription Drug Marketing Act

The distribution of pharmaceutical products is subject to the Prescription Drug Marketing Act, or PDMA, which regulates the distribution of drugs and drug samples at the federal level and sets minimum standards for the registration and regulation of drug distributors at the state level. Under the PDMA and state law, states require the registration of manufacturers and distributors who provide pharmaceuticals in that state, including in certain states manufacturers and distributors who ship pharmaceuticals into the state even if such manufacturers or distributors have no place of business within the state. The PDMA and state laws impose requirements and limitations upon drug sampling to ensure accountability in the distribution of samples. The PDMA sets forth civil and criminal penalties for violations of these and other provisions.

Federal and State Fraud and Abuse and Data Privacy and Security and Transparency Laws and Regulations

In addition to FDA restrictions on marketing of pharmaceutical products, federal and state healthcare laws restrict certain business practices in the biopharmaceutical industry. These laws include, but are not limited to, anti-kickback, false claims, data privacy and security, and transparency statutes and regulations.

The federal Anti-Kickback Statute prohibits, among other things, knowingly and willfully offering, paying, soliciting or receiving remuneration, directly or indirectly, to induce, or in return for, purchasing, leasing, ordering or arranging for the purchase, lease or order of any good, facility, item or service reimbursable under Medicare, Medicaid or other federal healthcare programs. The term “remuneration” has been broadly interpreted to include anything of value, including for example, gifts, discounts, the furnishing of supplies or equipment,

credit arrangements, payments of cash, waivers of payment, ownership interests and providing anything at less than its fair market value. The Anti-Kickback Statute has been interpreted to apply to arrangements between pharmaceutical manufacturers on one hand and prescribers, purchasers and formulary managers on the other. Although there are a number of statutory exemptions and regulatory safe harbors protecting certain common activities from prosecution, the exemptions and safe harbors are drawn narrowly, and our practices may not in all cases meet all of the criteria for a statutory exception or safe harbor protection. Practices that involve remuneration that may be alleged to be intended to induce prescribing, purchases or recommendations may be subject to scrutiny if they do not qualify for an exception or safe harbor. Failure to meet all of the requirements of a particular applicable statutory exception or regulatory safe harbor does not make the conduct per se illegal under the Anti-Kickback Statute. Instead, the legality of the arrangement will be evaluated on a case-by-case basis based on a cumulative review of all of its facts and circumstances. Several courts have interpreted the statute's intent requirement to mean that if any one purpose of an arrangement involving remuneration is to induce referrals of federal healthcare covered business, the statute has been violated. The intent standard under the Anti-Kickback Statute was amended by the Patient Protection and Affordable Care Act as amended by the Health Care and Education Reconciliation Act of 2010, or collectively, PPACA, to a stricter intent standard such that a person or entity no longer needs to have actual knowledge of this statute or the specific intent to violate it in order to have committed a violation. In addition, PPACA codified case law that a claim including items or services resulting from a violation of the federal Anti-Kickback Statute constitutes a false or fraudulent claim for purposes of the civil False Claims Act (discussed below). Further, civil monetary penalties statute imposes penalties against any person or entity who, among other things, is determined to have presented or caused to be presented a claim to a federal health program that the person knows or should know is for an item or service that was not provided as claimed or is false or fraudulent.

The federal false claims laws prohibit, among other things, any person or entity from knowingly presenting, or causing to be presented, a false or fraudulent claim for payment or approval to the federal government or knowingly making, using or causing to be made or used a false record or statement material to a false or fraudulent claim to the federal government. As a result of a modification made by the Fraud Enforcement and Recovery Act of 2009, a claim includes "any request or demand" for money or property presented to the US government. Recently, several pharmaceutical and other healthcare companies have been prosecuted under these laws for, among other things, allegedly providing free product to customers with the expectation that the customers would bill federal programs for the product. Other companies have been prosecuted for causing false claims to be submitted because of the companies' marketing of the product for unapproved, and thus non-reimbursable, uses. The federal Health Insurance Portability and Accountability Act of 1996, or HIPAA, created new federal criminal statutes that prohibit knowingly and willfully executing, or attempting to execute, a scheme to defraud any healthcare benefit program, including private third-party payers and knowingly and willfully falsifying, concealing or covering up a material fact or making any materially false, fictitious or fraudulent statement in connection with the delivery of, or payment for, healthcare benefits, items or services.

In addition, we may be subject to data privacy and security regulation by both the federal government and the states in which we conduct our business. HIPAA, as amended by the Health Information Technology for Economic and Clinical Health Act, or HITECH, and its implementing regulations, imposes certain requirements relating to the privacy, security and transmission of individually identifiable health information. Among other things, HITECH makes HIPAA's privacy and security standards directly applicable to business associates—independent contractors or agents of covered entities that receive or obtain protected health information in connection with providing a service on behalf of a covered entity. HITECH also created four new tiers of civil monetary penalties, amended HIPAA to make civil and criminal penalties directly applicable to business associates, and gave state attorneys general new authority to file civil actions for damages or injunctions in federal courts to enforce the federal HIPAA laws and seek attorney's fees and costs associated with pursuing federal civil actions. In addition, state laws govern the privacy and security of health information in certain circumstances, many of which differ from each other in significant ways and may not have the same effect, thus complicating compliance efforts.

Additionally, the federal Physician Payments Sunshine Act within the PPACA, and its implementing regulations, require that certain manufacturers of drugs, devices, biologicals and medical supplies for which payment is available under Medicare, Medicaid or the Children's Health Insurance Program (with certain exceptions) to report information related to certain payments or other transfers of value made or distributed to physicians and teaching hospitals, or to entities or individuals at the request of, or designated on behalf of, the physicians and teaching hospitals and to report annually certain ownership and investment interests held by physicians and their immediate family members.

Also, many states have similar healthcare statutes or regulations that apply to items and services reimbursed under Medicaid and other state programs, or, in several states, apply regardless of the payer. Some states require the posting of information relating to clinical studies. In addition, California requires pharmaceutical companies to implement a comprehensive compliance program that includes a limit on expenditures for, or payments to, individual medical or health professionals. If our operations are found to be in violation of any of the health regulatory laws described above or any other laws that apply to us, we may be subject to penalties, including potentially significant criminal, civil and/or administrative penalties, damages, fines, disgorgement, individual imprisonment, exclusion of products from reimbursement under government programs, contractual damages, reputational harm, administrative burdens, diminished profits and future earnings and the curtailment or restructuring of our operations, any of which could adversely affect our ability to operate our business and our results of operations. To the extent that any of our products will be sold in a foreign country, we may be subject to similar foreign laws and regulations, which may include, for instance, applicable post-marketing requirements, including safety surveillance, anti-fraud and abuse laws and implementation of corporate compliance programs and reporting of payments or transfers of value to healthcare professionals.

Pharmaceutical Coverage, Pricing and Reimbursement

In both domestic and foreign markets, our sales of any approved products will depend in part on the availability of coverage and adequate reimbursement from third-party payers. Third-party payers include government health administrative authorities, managed care providers, private health insurers and other organizations. Patients who are prescribed treatments for their conditions and providers performing the prescribed services generally rely on third-party payers to reimburse all or part of the associated healthcare costs. Patients are unlikely to use our products unless coverage is provided and reimbursement is adequate to cover a significant portion of the cost of our products. Sales of our products will therefore depend substantially, both domestically and abroad, on the extent to which the costs of our products will be paid by third-party payers. These third-party payers are increasingly focused on containing healthcare costs by challenging the price and examining the cost-effectiveness of medical products and services. In addition, significant uncertainty exists as to the coverage and reimbursement status of newly approved healthcare product candidates. The market for our products and product candidates for which we may receive regulatory approval will depend significantly on access to third-party payers' drug formularies, or lists of medications for which third-party payers provide coverage and reimbursement. The industry competition to be included in such formularies often leads to downward pricing pressures on pharmaceutical companies. Also, third-party payers may refuse to include a particular branded drug in their formularies or otherwise restrict patient access to a branded drug when a less costly generic equivalent or other alternative is available.

Because each third-party payer individually approves coverage and reimbursement levels, obtaining coverage and adequate reimbursement is a time-consuming, costly and sometimes unpredictable process. We may be required to provide scientific and clinical support for the use of any product to each third-party payer separately with no assurance that approval would be obtained, and we may need to conduct expensive pharmacoeconomic studies in order to demonstrate the cost-effectiveness of our products. This process could delay the market acceptance of any product and could have a negative effect on our future revenues and operating results. We cannot be certain that our products and our product candidates will be considered cost-effective. Because coverage and reimbursement determinations are made on a payer-by-payer basis, obtaining acceptable coverage and reimbursement from one payer does not guarantee that we will obtain similar acceptable coverage or

reimbursement from another payer. If we are unable to obtain coverage of, and adequate reimbursement and payment levels for, our product candidates from third-party payers, physicians may limit how much or under what circumstances they will prescribe or administer them and patients may decline to purchase them. This in turn could affect our ability to successfully commercialize our products and impact our profitability, results of operations, financial condition and future success.

In addition, in many foreign countries, particularly the countries of the EU and China, the pricing of prescription drugs is subject to government control. In some non-U.S. jurisdictions, the proposed pricing for a drug must be approved before it may be lawfully marketed. The requirements governing drug pricing vary widely from country to country. For example, the EU provides options for its member states to restrict the range of medicinal products for which their national health insurance systems provide reimbursement and to control the prices of medicinal products for human use. A member state may approve a specific price for the medicinal product or it may instead adopt a system of direct or indirect controls on the profitability of a company placing the medicinal product on the market. We may face competition for our product candidates from lower-priced products in foreign countries that have placed price controls on pharmaceutical products. In addition, there may be importation of foreign products that compete with our own products, which could negatively impact our profitability.

Healthcare Reform

In the United States and foreign jurisdictions, there have been, and we expect there will continue to be, a number of legislative and regulatory changes to the healthcare system that could affect our future results of operations as we begin to directly commercialize our products. In particular, there have been and continue to be a number of initiatives at the US federal and state level that seek to reduce healthcare costs. If a drug product is reimbursed by Medicare or Medicaid, pricing and rebate programs must comply with, as applicable, the Medicaid rebate requirements of the Omnibus Budget Reconciliation Act of 1990, as amended, and the Medicare Prescription Drug, Improvement, and Modernization Act of 2003, or the MMA. The MMA imposed new requirements for the distribution and pricing of prescription drugs for Medicare beneficiaries. Under Part D, Medicare beneficiaries may enroll in prescription drug plans offered by private entities that provide coverage of outpatient prescription drugs. Part D plans include both stand-alone prescription drug benefit plans and prescription drug coverage as a supplement to Medicare Advantage plans. Unlike Medicare Part A and B, Part D coverage is not standardized. Part D prescription drug plan sponsors are not required to pay for all covered Part D drugs, and each drug plan can develop its own drug formulary that identifies which drugs it will cover and at what tier or level. However, Part D prescription drug formularies must include drugs within each therapeutic category and class of covered Part D drugs, though not necessarily all the drugs in each category or class. Any formulary used by a Part D prescription drug plan must be developed and reviewed by a pharmacy and therapeutic committee. Government payment for some of the costs of prescription drugs may increase demand for our products for which we receive marketing approval. However, any negotiated prices for our future products covered by a Part D prescription drug plan will likely be lower than the prices we might otherwise obtain from non-governmental payers. Moreover, while the MMA applies only to drug benefits for Medicare beneficiaries, private payers often follow Medicare coverage policy and payment limitations in setting their own payment rates. Any reduction in payment that results from Medicare Part D may result in a similar reduction in payments from non-governmental payers.

Moreover, the recently enacted federal Drug Supply Chain Security Act, imposes new obligations on manufacturers of pharmaceutical products, among others, related to product tracking and tracing. Among the requirements of this new federal legislation, manufacturers will be required to provide certain information regarding the drug product to individuals and entities to which product ownership is transferred, label drug product with a product identifier, and keep certain records regarding the drug product. Further, under this new legislation, manufacturers will have drug product investigation, quarantine, disposition, and notification responsibilities related to counterfeit, diverted, stolen, and intentionally adulterated products, as well as products that are the subject of fraudulent transactions or which are otherwise unfit for distribution such that they would be reasonably likely to result in serious health consequences or death.

Furthermore, political, economic and regulatory influences are subjecting the healthcare industry in the United States to fundamental change. Initiatives to reduce the federal budget and debt and to reform healthcare coverage are increasing cost-containment efforts. We anticipate that Congress, state legislatures and the private sector will continue to review and assess alternative healthcare benefits, controls on healthcare spending through limitations on the growth of private health insurance premiums and Medicare and Medicaid spending, the creation of large insurance purchasing groups, price controls on pharmaceuticals and other fundamental changes to the healthcare delivery system. Any proposed or actual changes could limit or eliminate our spending on development projects and affect our ultimate profitability. In March 2010, PPACA was signed into law. PPACA has the potential to substantially change the way healthcare is financed by both governmental and private insurers. Among other cost containment measures, PPACA established: an annual, nondeductible fee on any entity that manufactures or imports certain branded prescription drugs and biologic agents; revised the methodology by which rebates owed by manufacturers to the state and federal government for covered outpatient drugs under the Medicaid Drug Rebate Program are calculated; increased the minimum Medicaid rebates owed by most manufacturers under the Medicaid Drug Rebate Program; and extended the Medicaid Drug Rebate program to utilization of prescriptions of individuals enrolled in Medicaid managed care organizations. In the future, there may continue to be additional proposals relating to the reform of the U.S. healthcare system, some of which could further limit the prices we are able to charge for our products, or the amounts of reimbursement available for our products. If future legislation were to impose direct governmental price controls and access restrictions, it could have a significant adverse impact on our business. Managed care organizations, as well as Medicaid and other government agencies, continue to seek price discounts. Some states have implemented, and other states are considering, price controls or patient access constraints under the Medicaid program, and some states are considering price-control regimes that would apply to broader segments of their populations that are not Medicaid-eligible. Due to the volatility in the current economic and market dynamics, we are unable to predict the impact of any unforeseen or unknown legislative, regulatory, payer or policy actions, which may include cost containment and healthcare reform measures. Such policy actions could have a material adverse impact on our profitability.

Regulation in China

The pharmaceutical industry in China is highly regulated. The primary regulatory authority is the CFDA, including its provincial and local branches. As a developer, manufacturer and supplier of drugs, we are subject to regulation and oversight by the CFDA and its provincial and local branches. The Drug Administration Law of China provides the basic legal framework for the administration of the production and sale of pharmaceuticals in China and covers the manufacturing, distributing, packaging, pricing and advertising of pharmaceutical products. Its implementing regulations set forth detailed rules with respect to the administration of pharmaceuticals in China. In addition, we are, and we will be, subject to other Chinese laws and regulations that are applicable to business operators, manufacturers and distributors in general.

Pharmaceutical Clinical Development

A new drug must be registered and approved by the CFDA before it can be manufactured and marketed for sale. To obtain CFDA approval, the applicant must conduct clinical trials, which must be approved by the CFDA and are subject to the CFDA's supervision and inspection. There are four phases of clinical trials. Application for registration of new drugs requires completion of Phase 1, 2 and 3 of clinical trials, similar to the United States. In addition, the CFDA may require the conduct of Phase 4 studies as a condition to approval.

Phase 4 studies are post-marketing studies to assess the therapeutic effectiveness of and adverse reactions to the new drug, including an evaluation of the benefits and risks, when used among the general population or specific groups, with findings used to inform adjustments to dosage, among other things.

NDA and Approval to Market

China requires approval of the NDA as well as the manufacturing facility before a drug can be marketed in China. Approval and oversight are performed at a national and provincial levels of the CFDA, involve multiple agencies and consist of various stages of approval.

Under the applicable drug registration regulations, drug registration applications are divided into three different types, namely Domestic New Drug Application, Domestic Generic Drug Application, and Imported Drug Application. Drugs fall into one of three categories, namely chemical medicine, biological product or traditional Chinese or natural medicine.

Class 1 refers to a new drug which has never been marketed in any country. Domestic Class 1.1 refers to a chemical drug within Class 1. FibroGen China as a domestic entity will be submitting a domestic New Drug Application under the Domestic Class 1.1 designation which is the anticipated route by which we expect roxadustat to be considered.

In order to obtain market authorization, FibroGen China must submit to the CFDA an NDA package that contains information similar to what is necessary for a U.S. NDA, including preclinical data, clinical data, technical data on active pharmaceutical ingredient and drug product and related stability data. The stability data must be generated from a three-batch registration campaign that is conducted at our Beijing facility, from which samples will be tested by the CFDA.

If the NDA package is acceptable, FibroGen China will be granted a New Drug License confirming the drug as suitable for marketing. In addition, FibroGen China will be granted a Manufacturing License which lists the Drug Approval Code as well as the name and address of the Manufacturing License holder. Manufacturing further requires a Pharmaceutical Production Permit, or PPP, as well as GMP certification. We recently received a PPP, certifying that our manufacturing facility and manufacturing process in that facility are suitable for the manufacture of a drug for clinical or commercial purposes. A PPP requires demonstration that the facility has: (i) legally qualified pharmaceutical and engineering professionals and necessary technical workers; (ii) the premises, facilities and hygienic environment required for drug manufacturing; (iii) institutions, personnel, instruments and equipment necessary to conduct quality control and testing for drugs to be produced; and (iv) rules and regulations to ensure the quality of drugs. The PPP is required prior to conducting the registration campaign for stability and other data for the NDA.

After NDA approval, FibroGen China will be required to conduct a three-batch validation campaign, one of which will be observed onsite by the CFDA. At the successful completion of the validation campaign and associated inspection, FibroGen China will be granted a GMP certification for the commercial production of roxadustat at our Beijing manufacturing facility. Only after the issuance of the GMP license can roxadustat be manufactured and sold commercially to the China market.

Drug Price Controls

The administration of price control of pharmaceutical products is vested in the national and provincial price administration authorities. Depending on the categories of pharmaceutical products in question, the prices of pharmaceutical products listed in the Medical Insurance Catalogs, drugs with patents and other drugs whose production or trading may constitute monopolies are subject to the control of the National Development and Reform Commission of China, or the NDRC, and the relevant provincial or local price administration authorities. With respect to pharmaceutical products manufactured in China, the national price administration authority from time to time publishes price control lists setting out the names of pharmaceutical products and their respective price ceilings. The provincial price administration authorities also publish price control lists in respect of the pharmaceutical products which are manufactured within their respective areas. The main purpose of the price control policy is to set an upper limit to the prices of pharmaceutical products to prevent excessive increases in the prices of such products. Price controls on medicines are determined based on profit margins that the relevant

authority deems acceptable, the type and quality of the medicine, its production costs, the prices of substitutes and the manufacturer's compliance with applicable GMP standards. Drug companies may apply for an increase in the retail price of their drug to the relevant national or provincial authority if their product has superior effectiveness or other advantages.

Tendering Process for Hospital Purchases of Medicines

Provincial and municipal government agencies such as provincial or municipal health departments also operate a mandatory tender process for purchases by hospitals of a medicine included in provincial medicine catalogs. These government agencies organize tenders in their province or city and typically invite manufacturers of provincial catalog medicines that are on the hospitals' formularies and are in demand by these hospitals to participate in the tender process. A government-approved committee consisting of physicians, experts and officials is delegated by these government agencies the power to review bids and select one or more medicines for the treatment of a particular medical condition. The selection is based on a number of factors, including bid price, quality and a manufacturer's reputation and service. The bidding price of a wining medicine will become the price required for purchases of that medicine by all hospitals in that province or city. This price, however, is effective only until the next tender, where the manufacturer of the winning medicine must submit a new bid. Increasingly, large hospitals are forming purchasing networks in order to increase their purchasing power. In addition, hospitals of certain provinces have begun to implement collective tender processes through online bidding, which is expected to increase the transparency and competitiveness of the tendering system and allow greater access to new entrants.

Device Regulation

In China, medical devices are classified into three different categories, Class I, Class II and Class III, depending on the degree of risk associated with each medical device and the extent of control needed to ensure safety and effectiveness. Classification of a medical device is important because the class to which a medical device is assigned determines, among other things, whether a manufacturer needs to obtain a production permit and whether clinical trials are required. Classification of a medical device also determines the types of registration required and the level of regulatory authority involved in effecting the product registration. FibroGen China has submitted a device classification application to the CFDA to designate FG-5200 corneal implants as a Domestic Class III medical device. Class III devices also require product registration and are regulated by the CFDA under the strictest regulatory control.

Before a Class III medical device can be manufactured for commercial distribution, a manufacturer must effect medical device registration by proving the safety and effectiveness of the medical device to the satisfaction of respective levels of the food and drug administration and clinical trials are required for registration of Class III medical devices. In order to conduct a clinical trial on a Class III medical device, the CFDA requires manufacturers to apply for and obtain in advance a favorable inspection result for the device from an inspection center jointly recognized by the CFDA and the State Administration of Quality Supervision, Inspection and Quarantine. The application for clinical trials involving a Class III medical device with high risk must be approved by the CFDA before the manufacturer may begin clinical trials. A registration application for a Class III medical device must provide required pre-clinical and clinical trial data and information about the medical device and its components regarding, among other things, device design, manufacturing and labeling. The CFDA must provide the application data to the technical evaluation institute for an evaluation opinion within three working days after its acceptance of the application package and decide, within twenty business days after its receipt of the evaluation opinion, whether the application for registration is approved. However, the time for conducting any detection, expert review and hearing process, if necessary, will not be counted in the abovementioned time limit. If the CFDA requires supplemental information, the approval process may take much longer. The registration is valid for five years and application is required for renewal upon expiration of the existing registration certificate. Once a device is approved, a manufacturer must possess a production permit from the provincial level food and drug administration before manufacturing Class III medical devices.

Foreign Regulation Outside of China

We are planning on seeking approval for roxadustat, and potentially for our other product candidates, in Europe, Japan and China as well as other countries. In order to market any product outside of the United States, we would need to comply with numerous and varying regulatory requirements of other countries and jurisdictions regarding quality, safety and efficacy and governing, among other things, clinical trials, manufacturing, marketing authorization, commercial sales and distribution of our products. Whether or not we obtain FDA approval for a product, we would need to obtain the necessary approvals by the comparable foreign regulatory authorities before we can commence clinical trials or marketing of the product in foreign countries and jurisdictions. Although many of the issues discussed above with respect to the United States apply similarly in the context of other countries we are seeking approval in, including Europe and China, the approval process varies between countries and jurisdictions and can involve different amounts of product testing and additional administrative review periods. For example, in Europe, a sponsor must submit a clinical trial application, or CTA, much like an IND prior to the commencement of human clinical trials. A CTA must be submitted to each national health authority and an independent ethics committee.

For other countries outside of the EU, such as China and the countries in Eastern Europe, Latin America or Asia, the requirements governing the conduct of clinical trials, product licensing, pricing, and reimbursement vary from country to country. The time required to obtain approval in other countries and jurisdictions might differ from or be longer than that required to obtain FDA approval. Regulatory approval in one country or jurisdiction does not ensure regulatory approval in another, but a failure or delay in obtaining regulatory approval in one country or jurisdiction may negatively impact the regulatory approval process in other countries.

Regulatory Exclusivity for Approved Products

U.S. Patent Term Restoration

Depending upon the timing, duration, and specifics of the FDA approval of our product candidates, some of our United States patents may be eligible for limited patent term extension under the Drug Price Competition and Patent Term Restoration Act of 1984, commonly referred to as the Hatch-Waxman Act. The Hatch-Waxman Act permits a patent restoration term of up to 5 years as compensation for patent term lost during product development and the FDA regulatory review process. The patent term restoration period is generally one-half the time between the effective date of an initial IND and the submission date of an NDA or BLA, plus the time between the submission date of the NDA or BLA and the approval of that product candidate application. Patent term restoration cannot, however, extend the remaining term of a patent beyond a total of 14 years from the product's approval date. In addition, only one patent applicable to an approved product is eligible for the extension and the application for the extension must be submitted prior to the expiration of the patent. The United States Patent and Trademark Office, in consultation with the FDA, reviews and approves applications for any patent term extension or restoration. In the future, we expect to apply for restoration of patent term for patents relating to each of our product candidates in order to add patent life beyond the current expiration date of such patents, depending on the length of the clinical trials and other factors involved in the filing of the relevant NDA or BLA.

Market exclusivity provisions under the FDCA can also delay the submission or the approval of certain applications of companies seeking to reference another company's NDA or BLA. The Hatch-Waxman Act provides a 5-year period of exclusivity to any approved NDA for a product containing a new chemical entity (NCE) never previously approved by FDA either alone or in combination with another active moiety. No application or abbreviated new drug application (ANDA) directed to the same NCE may be submitted during the 5-year exclusivity period, except that such applications may be submitted after 4 years if they contain a certification of patent invalidity or non-infringement of the patents listed with the FDA by the innovator NDA.

Biologic Price Competition and Innovation Act

The Biologics Price Competition and Innovation Act of 2009, or BPCIA, established an abbreviated pathway for the approval of biosimilar and interchangeable biological products. The abbreviated regulatory approval pathway establishes legal authority for the FDA to review and approve biosimilar biologics, including the possible designation of a biosimilar as "interchangeable" based on similarity to an existing branded product. Under the BPCIA, an application for a biosimilar product cannot be approved by the FDA until 12 years after the original branded product was approved under a BLA. However, an application may be submitted after four years if it contains a certification of patent invalidity or non-infringement to one of the patents listed with the FDA by the innovator BLA holder. The BPCIA is complex and is only beginning to be interpreted and implemented by the FDA. As a result, its ultimate impact, implementation, and interpretation are subject to uncertainty.

Orphan Drug Act

FG-3019 has received orphan drug designation in IPF in the United States. Under the Orphan Drug Act, the FDA may grant orphan designation to a drug or biological product intended to treat a rare disease or condition, which is a disease or condition that affects fewer than 200,000 individuals in the United States, or if it affects more than 200,000 individuals in the United States there is no reasonable expectation that the cost of developing and making a drug product available in the United States for this type of disease or condition will be recovered from sales of the product. Orphan product designation must be requested before submitting an NDA. After the FDA grants orphan product designation, the identity of the therapeutic agent and its potential orphan use are disclosed publicly by the FDA. Orphan product designation does not convey any advantage in or shorten the duration of the regulatory review and approval process.

If a product that has orphan designation subsequently receives the first FDA approval for the disease or condition for which it has such designation, the product is entitled to orphan product exclusivity, which means that the FDA may not approve any other applications to market the same drug or biological product for the same indication for seven years, except in limited circumstances, such as a showing of clinical superiority to the product with orphan exclusivity. The designation of such drug also entitles a party to financial incentives such as opportunities for grant funding towards clinical trial costs, tax advantages and user-fee waivers. Competitors, however, may receive approval of different products for the indication for which the orphan product has exclusivity or obtain approval for the same product but for a different indication for which the orphan product has exclusivity. Orphan product exclusivity also could block the approval of one of our products for seven years if a competitor obtains approval of the same drug or biological product as defined by the FDA or if our drug candidate is determined to be contained within the competitor's product for the same indication or disease. If a drug product designated as an orphan product receives marketing approval for an indication broader than what is designated, it may not be entitled to orphan product exclusivity in any indication.

Orphan designation status in the EU has similar but not identical benefits in that jurisdiction.

Products receiving orphan designation in the EU can receive ten years of market exclusivity, during which time no similar medicinal product for the same indication may be placed on the market. The ten-year market exclusivity may be reduced to six years if, at the end of the fifth year, it is established that the product no longer meets the criteria for orphan designation; for example, if the product is sufficiently profitable not to justify maintenance of market exclusivity. Additionally, marketing authorization may be granted to a similar product for the same indication at any time if the second applicant can establish that its product, although similar, is safer, more effective or otherwise clinically superior; the initial applicant consents to a second orphan medicinal product application; or the initial applicant cannot supply enough orphan medicinal product. An orphan product can also obtain an additional two years of market exclusivity in the EU for pediatric studies. No extension to any supplementary protection certificate can be granted on the basis of pediatric studies for orphan indications.

Foreign Country Data Exclusivity

The EU also provides opportunities for additional market exclusivity. For example, in the EU, upon receiving marketing authorization, an NCE generally receives eight years of data exclusivity and an additional two years of market exclusivity. If granted, data exclusivity prevents regulatory authorities in the EU from referencing the innovator's data to assess a generic application. During the additional two-year period of market exclusivity, a generic marketing authorization can be submitted, and the innovator's data may be referenced, but no generic product can be marketed until the expiration of the market exclusivity.

In China, there is also an opportunity for data exclusivity for a period of six years for data included in an NDA applicable to a new chemical entity. According to the Provisions for Drug Registration, the Chinese government protects undisclosed data from drug studies and prevents the approval of an application made by another company that uses the undisclosed data for the approved drug. In addition, if an approved drug manufactured in China qualifies as an innovative drug, such as Domestic Class 1.1, and the CFDA determines that it is appropriate to protect public health with respect to the safety and efficacy of the approved drug, the CFDA may elect to monitor such drug for up to five years. During this post-marketing observation period, the CFDA will not grant approval to another company to produce, change dosage form of or import the drug while the innovative drug is under observation. The approved manufacturer is required to provide an annual report to the regulatory department of the province, autonomous region or municipality directly under the central government where it is located. Each of the data exclusivity period and the observation period runs from the date of approval for production of the new chemical entity or innovative drug, as the case may be.

INTELLECTUAL PROPERTY

Our success depends in part upon our ability to obtain and maintain patent and other intellectual property protection for our product candidates including compositions-of-matter, dosages, and formulations, manufacturing methods, and novel applications, uses and technological innovations related to our product candidates and core technologies. We also rely on trade secrets, know-how and continuing technological innovation to further develop and maintain our competitive position.

Our policy is to seek to protect our proprietary position by, among other methods, filing United States and foreign patent applications related to our proprietary technologies, inventions and any improvements that we consider important to the development and implementation of our business and strategy. Our ability to maintain and solidify our proprietary position for our products and technologies will depend, in part, on our success in obtaining and enforcing valid patent claims. Additionally, we may benefit from a variety of regulatory frameworks in the United States, Europe, China and other territories that provide periods of non-patent-based exclusivity for qualifying drug products. *See "Government Regulation—Regulatory Exclusivity for Approved Products"*.

We cannot ensure that patents will be granted with respect to any of our pending patent applications or with respect to any patent applications that may be filed by us in the future, nor can we ensure that any of our existing or subsequently granted patents will be useful in protecting our drug candidates, technological innovations, and processes. Additionally, any existing or subsequently granted patents may be challenged, invalidated, circumvented or infringed. We cannot guarantee that our intellectual property rights or proprietary position will be sufficient to permit us to take advantage of current market trends or otherwise to provide or protect competitive advantages. Furthermore, our competitors may be able to independently develop and commercialize similar products, or may be able to duplicate our technologies, business model, or strategy, without infringing our patents or otherwise using our intellectual property.

Our patent estate, on a worldwide basis, encompasses over 200 granted patents and 150 pending patent applications, including over 90 granted patents and 100 pending patent applications relating to roxadustat (FG-4592) and FG-3019. Our currently granted patents with respect to composition-of-matter for roxadustat and FG-3019 are expected to expire in 2024 or 2025. Additional patents and patent applications relating to

manufacturing processes, formulations, and various therapeutic uses, including treatment of specific indications and improvement of clinical parameters provide additional protection for product candidates. Currently granted patents are expected to expire between 2022 and 2025, and pending patent applications, if granted, could extend patent protection to between 2033 and 2034.

The protection afforded by any particular patent depends upon many factors, including the type of patent, scope of coverage encompassed by the granted claims, availability of extensions of patent term, availability of legal remedies in the particular territory in which the patent is granted, and validity and enforceability of the patent. Changes in either patent laws or in the interpretation of patent laws in the United States and other countries could diminish our ability to protect our inventions and to enforce our intellectual property rights. Accordingly, we cannot predict with certainty the enforceability of any granted patent claims or of any claims that may be granted from our patent applications.

The biotechnology and pharmaceutical industries are characterized by extensive litigation regarding patents and other intellectual property rights. Our ability to maintain and solidify our proprietary position for our products and core technologies will depend on our success in obtaining effective claims and enforcing those claims once granted. We have been in the past and are currently involved in various administrative proceedings with respect to our patents and patent applications and may, as a result of our extensive portfolio, be involved in such proceedings in the future. Additionally, in the future, we may claim that a third party infringes our intellectual property or a third party may claim that we infringe its intellectual property. In any of the administrative proceedings or in litigation, we may incur significant expenses, damages, attorneys' fees, costs of proceedings and experts' fees, and management and employees may be required to spend significant time in connection with these actions.

Because of the extensive time required for clinical development and regulatory review of a product candidate we may develop, it is possible that any patent related to our product candidates may expire before any of our product candidates can be commercialized, or may remain in force for only a short period of time following commercialization, thereby reducing the advantage afforded by any such patent.

The patent positions for our most advanced programs are summarized below.

Roxadustat (FG-4592) Patent Portfolio

Our roxadustat patent portfolio includes three granted U.S. patents and one pending U.S. patent application offering protection for roxadustat including composition-of-matter, pharmaceutical compositions, and methods for treating anemia using roxadustat or its analogs. Exclusive of any patent term extension, the granted U.S. patents relating to the composition-of-matter of roxadustat are due to expire in 2024 or 2025. A corresponding regional patent application has been granted in Europe and validated in multiple European Patent Convention member states. Additional corresponding patents and patent applications provide broad international protection in multiple territories worldwide. Exclusive of any patent term extension, these granted foreign patents and pending patent applications, if granted, would extend patent protection to 2024.

Under the Hatch-Waxman Act, we believe that, if roxadustat is approved, we will be eligible for the full five year patent term extension for a granted U.S. patent relating to roxadustat, which extension would expire in 2029 or 2030, depending on the patent extended. *See "Government Regulation—Regulatory Exclusivity for Approved Products—U.S. Patent Term Restoration."*

We also hold various U.S. and foreign granted patents and pending patent applications directed to manufacturing processes for and formulations of roxadustat, crystalline forms and polymorphs of roxadustat, and methods for use of roxadustat to treat anemia or associated conditions, or to improve clinical parameters relating to anemia. Exclusive of any patent term extension, these granted patents are due to expire in 2024 to 2027, and pending patent applications, if granted, could extend patent protection to 2032 to 2034. For example, the crystalline forms patent application has been allowed by the U.S. Patent and Trademark Office and is expected to issue with patent term to 2033, without extension.

Roxadustat China Patent Portfolio

Our Chinese patent portfolio relating to roxadustat includes three granted Chinese patents covering medicaments containing roxadustat for treating conditions including anemia of chronic disease, iron deficiency, and ischemic disorders. These granted patents are due to expire in 2022 through 2024. Our roxadustat patent portfolio in China also includes 15 pending Chinese patent applications relating to composition-of-matter, pharmaceutical compositions containing roxadustat, manufacturing processes for roxadustat, polymorphs and crystalline forms of roxadustat, and various other aspects relating to the treatment of anemia or improvement of anemia-related parameters using roxadustat, which pending applications, if granted, could be expected to expire between 2022 and 2033.

We believe that roxadustat, as a new chemical entity, would be eligible for six years of data exclusivity in China. Furthermore, upon approval as a new drug, roxadustat may receive up to five years of market exclusivity under a CFDA-imposed new drug monitoring period. *See "Government Regulation—Regulatory Exclusivity for Approved Products—Data Exclusivity"*

HIF Anemia-related Technologies Patent Portfolio

We also have an extensive worldwide patent portfolio providing broad protection for proprietary technologies relating to the treatment of anemia. This portfolio currently contains over 45 granted patents and 65 pending patent applications providing exclusivity for use of compounds falling within various and overlapping classes of HIF-PH inhibitors to achieve various therapeutic effects.

This extensive portfolio reflects a series of discoveries we made from the initial days of our HIF program through the present time. Our research efforts have resulted in progressive innovation, and the corresponding patents and patent applications reflect the success of our HIF program. Such discoveries include the ability of HIF-PH inhibitors:

- To induce endogenous erythropoietin in anemic CKD patients.
- To increase efficacy of EPO signaling.
- To enhance EPO responsiveness of the bone marrow, for example, by increasing EPO receptor expression.
- To overcome the suppressive and inhibitory effects of inflammatory cytokines, such as members of the interleukin 1, IL-1, and interleukin 6, IL-6, cytokine families, on EPO production and responsiveness.
- To increase effective metabolism of iron.
- To increase iron absorption and bioavailability, as measured using clinical parameters such as percent transferrin saturation, or TSAT%.
- To overcome iron deficiency through effects on iron regulatory factors such as ferroportin and hepcidin.
- To provide coordinated erythropoiesis resulting in increased reticulocyte hemoglobin content, or CHr, and increased mean corpuscular volume, or MCV.
- To improve kidney function.

The table below sets forth representative granted U.S. patents relating to these and other inventions, including the projected expiration dates of these patents.

PATENT NO.	TITLE	PROJECTED EXPIRATION
6,855,510	Pharmaceuticals and Methods for Treating Hypoxia and Screening Methods Therefor	July 2022
8,466,172	Stabilization of Hypoxia Inducible Factor (HIF) Alpha	December 2022
8,629,131	Enhanced Erythropoiesis and Iron Metabolism	June 2024
8,604,012	Enhanced Erythropoiesis and Iron Metabolism	June 2024
8,609,646	Enhanced Erythropoiesis and Iron Metabolism	June 2024
8,604,013	Enhanced Erythropoiesis and Iron Metabolism	June 2024
8,614,204	Enhanced Erythropoiesis and Iron Metabolism	June 2026
7,713,986	Compounds and Methods for Treatment of Chemotherapy-Induced Anemia	June 2026
8,318,703	Methods for Improving Kidney Function	February 2027

In addition to the U.S. patents listed above, our HIF anemia-related technologies portfolio includes corresponding foreign patents granted and patent applications pending in various territories worldwide.

In March 2013, we obtained the grant of European Patent No. 1463823 (the ‘823 patent), which claims, among other things, the use of a heterocyclic carboxamide compound selected from the group consisting of pyridine carboxamides, quinoline carboxamides, isoquinoline carboxamides, cinnoline carboxamides and beta-carboline carboxamides that inhibits HIF-PH enzyme activity in the manufacture of a medicament for increasing EPO in the prevention, pretreatment, or treatment of anemia. The granted claims of the ‘823 patent encompass the use of roxadustat for the treatment of anemia. On December 5, 2013, Akebia Therapeutics, Inc. filed an opposition to the ‘823 patent with the European Patent Office. An opposition is a mechanism providing for a third-party challenge to a granted European patent. While we believe the ‘823 patent will be upheld in its entirety, the ultimate outcome of the opposition remains uncertain, and ultimate resolution of the proceeding may take two to four years or longer. However, narrowing or even revocation of the ‘823 patent would not affect our exclusivity for roxadustat or our freedom-to-operate with respect to use of roxadustat for the treatment of anemia. Akebia and other third parties may initiate additional or similar proceedings with the European Patent Office or other similar foreign jurisdictions.

FG-3019 Patent Portfolio

Our FG-3019 patent portfolio includes two granted U.S. patents and one pending U.S. patent application providing composition-of-matter protection for FG-3019 and related antibodies, and methods of using FG-3019 or related antibodies in the treatment of fibroproliferative disorders, including IPF, liver fibrosis, and pancreatic cancer, which cases are owned by us or are exclusively licensed by us from Medarex, Inc. (now Bristol-Myers Squibb Co.). Exclusive of any patent term extension, the U.S. patents relating to composition-of-matter of FG-3019 are due to expire in 2024 or 2025. A corresponding regional patent application has been granted in Europe and validated in multiple European Patent Convention member states. Additional corresponding patents and patent applications provide broad international protection in multiple territories worldwide. Exclusive of any patent term extension, these foreign patents, and any patents that may grant from the pending foreign patent applications, are due to expire in 2024.

Under the Hatch-Waxman Act, we believe that, if FG-3019 is approved, we will be eligible for a full five year patent term extension for one U.S. patent relating to FG-3019. In addition, we believe that FG-3019, if approved

under a BLA, should qualify for a 12-year period of exclusivity currently permitted by the BPCIA. See *"Government Regulation—Regulatory Exclusivity for Approved Products"*.

We also hold additional granted U.S. and foreign patents and pending patent applications directed to the use of FG-3019 to treat IPF, liver fibrosis, pancreatic cancer and other disorders. Exclusive of any patent term extension, these granted patents are due to expire in 2022 to 2025, and pending patent applications, if granted, could extend patent protection to between 2031 and 2033.

Trade Secrets and Know-How

In addition to patents, we rely upon proprietary trade secrets and know-how and continuing technological innovation to develop and maintain our competitive position. We seek to protect our proprietary information, in part, using confidentiality and other terms in agreements with our commercial partners, collaboration partners, consultants and employees. Such agreements are designed to protect our proprietary information, and may also grant us ownership of technologies that are developed through a relationship with a third party, such as through invention assignment provisions. Agreements may expire and we could lose the benefit of confidentiality, or our agreements may be breached and we may not have adequate remedies for any breach. In addition, our trade secrets may otherwise become known or be independently discovered by competitors.

To the extent that our commercial partners, collaboration partners, employees and consultants use intellectual property owned by others in their work for us, disputes may arise as to the rights in related or resulting know-how and inventions.

In-Licenses

Dana-Farber Cancer Institute

Effective March 2006, we entered into a license agreement with the Dana-Farber Cancer Institute, or DFCI, under which we obtained an exclusive license to certain patent applications, patents and biological materials for all uses. The patent rights relate to inhibition of prolyl hydroxylation of the alpha subunit of hypoxia-inducible factor (HIF-alpha), and include granted U.S. and foreign patents due to expire in 2022, exclusive of possible patent term extension. The licensed patents relate to use of HIF-PH inhibitors such as roxadustat.

Under the DFCI agreement, we are obligated to pay DFCI for past and ongoing patent prosecution expenses for the licensed patents. We are also obligated to pay DFCI annual maintenance fees, development milestone payments of up to $425,000, sales milestone payments of up to $3 million, and a sub-single digit royalty on net sales by us or our affiliates or sublicensees of products that are covered by the licensed patents or incorporate the licensed biological materials. In addition, each sublicense we grant is subject to a one-time fixed amount payment to DFCI.

Unless earlier terminated, the agreement will continue in effect, on a country-by-country basis, until the expiration of all licensed patents in a country or, if there is no patent covering a licensed product incorporating the licensed biological materials, until 20 years after the effective date of the agreement. DFCI may terminate the agreement for our uncured material breach, if we cease to carry on our business and development activities with respect to all licensed products, if we fail to comply with our insurance obligations, or if we are convicted of a felony related to the manufacture, use, sale or importation of licensed products. We may terminate the agreement at any time on prior written notice to DFCI.

University of Miami

In May 1997, we entered into a license agreement with the University of Miami, or the University, amended in July 1999, under which we obtained an exclusive, worldwide license to certain patent applications and patents for

all uses. The current patent rights include U.S. and foreign patents that relate to biologically active fragments of connective tissue growth factor (CTGF), and corresponding nucleic acids, proteins, and antibodies, and are due to expire in 2019, exclusive of any patent term extension that may be available. The licensed patents relate to FG-3019 and related products.

Under the University agreement, we are obligated to pay for all ongoing patent prosecution expenses for the licensed patents. We are also obligated to pay an upfront licensing fee of $21,500, all of which has been paid, and development milestone payments of up to $450,000, of which $50,000 has been paid, as well as an additional milestone payment, in the low hundreds of thousands of dollars, for each new indication for which we obtain approval for a licensed product, and a single digit royalty, subject to certain reductions, on net sales of licensed products by us or our affiliates or sublicensees.

Unless earlier terminated, the agreement will continue in effect, on a country-by-country basis, until the expiration of all licensed patents in a country. The University may terminate the agreement for our uncured material breach or bankruptcy. We may terminate the agreement for the University's uncured material breach or at any time on prior written notice to the University.

Bristol-Myers Squibb Company (Medarex, Inc.)

Effective July 9, 1998 and as amended on June 30, 2001 and January 28, 2002, we entered into a research and commercialization agreement with Medarex, Inc. and its wholly-owned subsidiary GenPharm International, Inc. (now, collectively, part of Bristol-Myers Squibb Company, or Medarex) to develop fully human monoclonal antibodies for potential anti-fibrotic therapies. Under the agreement, Medarex was responsible for using its proprietary immunizable transgenic mice or HuMAb-Mouse technology during a specified research period, or the Research Period, to produce fully human antibodies against our proprietary antigen targets, including CTGF, for our exclusive use.

The agreement granted us an option to obtain an exclusive worldwide, royalty-bearing, commercial license to develop antibodies derived from Medarex's HuMAb-Mouse technology, for use in the development and commercialization of diagnostic and therapeutic products. In December 2002, we exercised that option with respect to twelve antibodies inclusive of the antibody from which FG-3019 is derived. We granted back to Medarex an exclusive, worldwide, royalty-free, perpetual, irrevocable license, with the right to sublicense, to certain inventions created during the parties' research collaboration, with such license limited to use by Medarex outside the scope of our licensed antibodies.

As a result of the exercise of our option to obtain the commercial license, Medarex is precluded from (i) knowingly using any technology involving immunizable transgenic mice containing unrearranged human immunoglobulin genes with any of our antigen targets that were the subject of the agreement, (ii) granting to a third party a commercial license that covers such antigen targets or those antibodies derived by Medarex during the Research Period, and (iii) using any antibodies derived by Medarex during the Research Period, except as permitted under the agreement for our benefit or to prosecute patent applications in accordance with the agreement.

Medarex retained ownership of the patent rights relating to certain mice, mice materials, antibodies and hybridoma cell lines used by Medarex in connection with its activities under the agreement, and Medarex also owns certain claims in patents covering inventions that arise during the Research Period, which claims are directed to (i) compositions of matter (e.g., an antibody) except formulations of antibodies for therapeutic or diagnostic use, or (ii) methods of production. We own the patent rights to any inventions that arise during the Research Period that relate to antigens, as well as claims in patents covering inventions directed to (a) methods of use of an antibody, or (b) formulations of antibodies for therapeutic or diagnostic use. Upon exercise of our option to obtain the commercial license, we obtained the sole right but not obligation to control prosecution of patents relating solely to the licensed antibodies or products. Medarex has back-up patent prosecution rights in the event we decline to further prosecute or maintain such patents.

In addition to research support payments by us to Medarex during the Research Period, and an upfront commercial license fee in the form of 181,819 shares of FibroGen Series D Convertible Preferred Stock paid upon exercise of our option, we committed development-related milestone payments of up to $11 million per therapeutic product containing a licensed antibody, and we have paid a $1 million development-related milestone, in the form of 133,333 shares of FibroGen Series G Convertible Preferred Stock, for FG-3019 to date. At our election, the remaining milestone payments may be paid in common stock of FibroGen, Inc., preferred stock of FibroGen, Inc., or cash.

With respect to our sales and sales by our affiliates, the agreement also requires us to pay Medarex low single-digit royalties for licensed therapeutic products and low double-digit royalties, plus certain capped sales-based bonus royalties, for licensed diagnostic products. With respect to sales of licensed products by a sublicensee, we may elect to pay the same foregoing royalties or a high double-digit percentage of all payments received by us from such sublicensee. We are also required to reimburse Medarex any pass-through royalties, if any, payable under Medarex's upstream license agreements with Medical Research Council and DNX. Royalties payable by us under the agreement are on a licensed product-by-licensed product and country-by-country basis and subject to reductions in specified circumstances, and royalties are payable for a period until either expiration of patents covering the applicable licensed product or a specified number of years following the first commercial sale of such product in the applicable country.

Unless earlier terminated, the agreement will continue in effect for as long as there are royalty payment obligations by us or our sublicensees. Either party may terminate the agreement for certain material breaches by the other party, or for bankruptcy, insolvency or similar circumstances. In addition, we may also terminate the agreement for convenience upon written notice.

Third Party Filings

Numerous U.S. and foreign issued patents and pending patent applications, which are owned by third parties, exist in the fields in which we are developing products. Because patent applications can take many years to issue, there may be currently pending applications, unknown to us, which may later result in granted patents that use of our product candidates or proprietary technologies may infringe.

If a third party claims that we infringe its intellectual property rights, we may face a number of issues, including but not limited to, litigation expenses, substantial damages, attorney fees, injunction, royalty payments, cross-licensing of our patents, redesign of our products, or processes and related fees and costs

We may be exposed to, or threatened with, future litigation by third parties having patent or other intellectual property rights alleging that our products, product candidates, and/or proprietary technologies infringe their intellectual property rights. If one of these patents were to be found to cover our products, product candidates, proprietary technologies, or their uses, we could be required to pay damages and could be restricted from commercializing our products, product candidates or using our proprietary technologies unless we obtain a license to the patent. A license may not be available to us on acceptable terms, if at all. In addition, during litigation, the patent holder might obtain a preliminary injunction or other equitable right, which could prohibit us from making, using or selling our products, technologies, or methods.

EMPLOYEES

As of September 30, 2014, we had 337 full-time employees, 121 of whom held Ph.D. or M.D. degrees, 262 of whom were engaged in research and development and 75 of whom were engaged in business development, finance, information systems, facilities, human resources or administrative support. None of our U.S. employees are represented by a labor union. The employees of FibroGen China are represented by a labor union under the China Labor Union Law. None of our employees have entered into a collective agreement with us. We consider our employee relations to be good.

FACILITIES

Our corporate and research and development operations are located in San Francisco, California, where we lease approximately 234,000 square feet of office and laboratory space with approximately 35,000 square feet subleased. The lease for our San Francisco headquarters expires in 2023. In addition, we have a leased facility located in South San Francisco, California, which was used as our corporate headquarters prior to moving to our current facility in 2008. The South San Francisco facility is approximately 106,000 square feet and is fully subleased. We also lease approximately 67,000 square feet of office and manufacturing space in Beijing, China. Our lease in China expires in 2021. We believe our facilities are adequate for our current needs and that suitable additional or substitute space would be available if needed.

LEGAL PROCEEDINGS

We are not currently a party to any material legal proceedings.

MANAGEMENT

Executive Officers and Directors

The following table sets forth certain information with respect to our executive officers and directors as of September 30, 2014:

Name	Age	Position
Thomas B. Neff	60	Chairman, Founder, Chief Executive Officer, Director
Pat Cotroneo	50	Vice President, Finance, and Chief Financial Officer
Frank H. Valone, M.D.	65	Chief Medical Officer
K. Peony Yu, M.D.	52	Vice President, Clinical Development
Thomas F. Kearns (2)(3)	77	Director
Kalevi Kurkijärvi, Ph.D. (1)	62	Director
Miguel Madero (3)	65	Director
Rory B. Riggs (1) (3)	61	Director
Roberto Pedro Rosenkranz, Ph.D., M.B.A. (2)(3)	64	Director
Jorma Routti, Ph.D. (2)	75	Director
James A. Schoeneck (1)(2)	57	Director
Julian N. Stern (1)(2)	89	Director
Toshinari Tamura, Ph.D. (3)	70	Director

(1) Member of the audit committee.
(2) Member of the compensation committee.
(3) Member of the nominating and corporate governance committee.

Thomas B. Neff founded FibroGen, Inc. and has served as our Chairman and Chief Executive Officer and as a member of our Board of Directors since 1993. He serves as a Director of FibroGen China Anemia Holdings, Ltd and serves as General Manager of FibroGen (China) Medical Technology Development Co., Ltd. Mr. Neff received a B.A. from Claremont McKenna College with concentrations in Molecular Biology and Government. Subsequently he studied Economics and Finance at the University of the Chicago Graduate School of Business, and was a Fellow of the Thomas J Watson Foundation. He was employed as an investment banker first at Paine Webber Incorporated (1983-1988) and then at Lazard Freres & Co. through 1992. In 1991, he was among 40 selected as future financial industry leaders in a poll of 600 financial leaders by Institutional Investor. Mr. Neff was founder of Pharmaceutical Partners I and Pharmaceutical Partners II, the pioneer entities investing in drug royalties and predecessors to what is now Royalty Pharma. He left the group in 1998 to concentrate on FibroGen but remained as Managing General Partner of PP1 and PPII until all assets were distributed to partners through 2009. He was also founder and General Partner of Three Arch Bay Health Science Fund, a private investment fund focused on emerging biomedical companies, from 1993 to completion in 2011. He received an honorary doctor of medical sciences from Oulu University, Oulu, Finland in 2009. He has been a director of Kolltan Pharmaceuticals, a spin-out from Yale University, since 2009. Mr. Neff is a named inventor on over 100 of our patents and patent applications. The Board believes that Mr. Neff, who has extensive experience and tenure as our founder and Chief Executive Officer, brings historic knowledge, extensive insights into the strategic value of our technologies and continuity to our board of directors. In addition, the Board believes that his financial, corporate structuring and transactional expertise and experience in the life sciences sector provide him with financial, operational, scientific, intellectual property, risk management and industry expertise that is important to our Board.

Pat Cotroneo has served as our Chief Financial Officer since 2008. Mr. Cotroneo joined us in 2000 as Controller, was promoted to Vice President of Finance, and subsequently promoted to Chief Financial Officer in 2008. Prior to joining us, Mr. Cotroneo was at SyStemix, Inc. where he assumed Controller responsibilities for both SyStemix and Genetic Therapy, Inc. (Novartis subsidiaries) from 1993 to 2000. Prior to SyStemix, he was employed by Deloitte & Touche from 1987 to 1993 in various positions. Mr. Cotroneo received a B.S. with honors from the University of San Francisco and was selected a Louise M. Davies scholar.

Frank H. Valone, M.D., has served as our Chief Medical Officer since December 2008. Dr. Valone has more than 14 years of biotechnology industry experience in the leadership of clinical and preclinical development, medical and regulatory affairs and quality assurance and control. He served as Senior Vice President of Medical Affairs of Bayhill Therapeutics Inc., a biopharmaceutical company, from November 2003 to November 2008. He was responsible for clinical, regulatory, quality and nonclinical toxicology/safety aspects related to the development of Bayhill's investigational therapies. Dr. Valone served as Executive Vice President of Clinical Development and Regulatory Affairs of Titan Pharmaceuticals Inc., a biopharmaceutical company, from March 2002 to October 2003. He was responsible for the clinical development of three antibody vaccines, as well as several small molecule and cell therapy development programs for CNS diseases and cancer. From 1994 to 2002, Dr. Valone was the Chief Medical Officer and Senior Vice President of Clinical and Regulatory Affairs of Dendreon Corporation, a biotechnology company. From 1991 to 1996, he served in various positions of The Dartmouth-Hitchcock Medical Center as Adjunct Professor of Medicine and Norris Cotton Cancer Center including Professor of Medicine. From 1982 to 1991, Dr. Valone held various positions at The University of California, San Francisco, including Associate and Chief of Hematology and Oncology at the San Francisco VA Medical Center. From 1995 to 2001, he was Clinical Associate Professor, Department of Medicine, Stanford University. Dr. Valone received a B.A. from Hamilton College and an M.D. from Harvard Medical School. His Post-Doctoral training was at the Brigham and Womens Hospital in Internal Medicine/Allergy and Rheumatology and at Dana-Farber Cancer Institute in Medical Oncology in 1980.

K. Peony Yu, M.D, has served as our Vice President of Clinical Development since December 2008. Dr. Yu brings to us expertise in design and execution of all phases of clinical development programs, including clinical and regulatory strategy, interactions with regulatory authorities in the United States and EU, as well as experience with successful leadership of clinical teams. Prior to joining us, Dr. Yu was Vice President of Clinical Research at Anesiva, Inc., where she was responsible for management of clinical research, statistics/data management, clinical operations, and medical affairs/medical information for all clinical programs, including the late-stage clinical development and approval of Zingo, a drug-device combination for pain management. Prior to Anesiva, Dr. Yu was Director, Clinical Development, at ALZA Corporation (a subsidiary of Johnson & Johnson) where she was Global Clinical Lead for IONSYS, a drug-device combination for post-operative pain, and led a successful New Drug Application resubmission with the U.S. Food & Drug Administration and multiple interactions with European regulatory authorities resulting in marketing approval in 25 European countries. Prior to ALZA, Dr. Yu held previous posts at Pain Therapeutics, Inc., and at Elan Pharmaceuticals. Dr. Yu received a B.S. in Chemical Engineering and an M.D. both from the University of California, Davis, followed by residency training at Stanford Medical School.

Non-Employee Directors

Thomas F. Kearns Jr. has served on our board of directors since November 1996. Mr. Kearns is a retired Partner of The Bear Stearns Companies Inc., an investment banking firm, where he was an investment banker in the healthcare area from 1974 until 1987. Prior to his career at Bear Stearns, Mr. Kearns worked for Merrill Lynch, an investment banking firm, from January 1959 until August 1969. Mr. Kearns is Chairman of the National Advisory Board of Carolina Performing Arts at the University of North Carolina. In 2013, he joined the board of directors of Franklin Street Partners. Mr. Kearns was a Trustee of the University of North Carolina Foundation and Endowment Fund for 16 years and served on the board of directors of Biomet Inc. from January 1980 until May 2005. He received his B.A. in History from the University of North Carolina. We believe that Mr. Kearns is qualified to serve on our board of directors due to his financial expertise stemming from a career in investment banking with a focus on the healthcare industry.

Kalevi Kurkijärvi, Ph.D. has served on our board of directors since November 1996. He has also served on the board of directors of our subsidiary, FibroGen Europe Oy, since November 1997. Dr. Kurkijärvi has been the Chairman and Founding Partner of Innomedica Oy, a business development company specialized in licensing, distributor search and strategic planning for companies in the pharmaceutical or medtech industry, since March 2010, and from August 1997 to February 2010 he acted as Director having financial matters as his main responsibility. He was also the Founding Partner and former Chief Executive Officer of Bio Fund Management

Ltd, a Finnish-Danish venture capital company, from 1997 until 2010. He has also been Chairman and Chief Executive Officer of his family's import-export trading company, Biketex Ltd, since October 1993. Dr. Kurkijärvi has over twenty years experience in international life science business and over ten years in corporate finance. He currently serves on the boards of directors of Innomedica Oy (chair), Biketex Ltd (chair) and Hytest Oy (chair). He previously served on the boards of directors at other biotechnology companies such as of Paratek Pharmaceuticals Inc., Ark Therapeutics Plc, BioTie Therapies Plc (chair), Stick Tech Oy (chair), Hormos Medical Oy (chair), Map Medical Oy (chair), Bio Orbit Oy (chair) and Juvantia Pharma Oy, among others. Prior to founding Bio Fund, Dr. Kurkijärvi worked as Executive Director of the venture capital group at the Finnish National Fund of Research and Development (SITRA). He has also served as Executive Vice President at Wallac Oy, and as President and Chief Executive Officer of Pharmacia Diagnostics Production Oy. Dr. Kurkijärvi received a Ph.D. in Biochemistry and Molecular Biology from the University of Turku in 1992, where he also worked for several years in research and teaching. We believe Dr. Kurkijärvi is qualified to serve on our board of directors because of his scientific and technical background, international business and management experience, and expertise in the life sciences and biotechnology industries as evidenced by the various leadership roles and positions he has held in such industries.

Miguel Madero has served on our board of directors since January 1995. Mr. Madero is the Managing Director at Fomento y Direccion, an investment bank located in Mexico City that he co-founded in 1985. Mr. Madero currently serves on the boards of directors of Provo International, Financiera Convergencia, S.A. de C.V, and MEB Global, S.A. de C.V. and Grupo REMABLO, S.A. DE C.V. He earned a B.A. in Industrial Engineering from the Universidad Iberoamericana in Mexico City and an M.B.A. from the University of Texas at Austin. We believe that Mr. Madero is qualified to serve on our board of directors due to his financial expertise and management experience.

Rory B. Riggs has served on our board of directors since October 1993. Since April 2010, Mr. Riggs has served as founder and Chief Executive Officer of Syntax Analytics, LLC, a development stage venture focused on creating a new information technology platform for large-scale portfolio management. Since June 2006, Mr. Riggs has also served as Managing Member of New Ventures, a venture fund focused on biotechnology and healthcare. Mr. Riggs has been the Managing Member of Balfour LLC, an investment management company focused on biotechnology and healthcare, since January 2001. Mr. Riggs served as the President of Biomatrix, Inc., a biomedical company, from 1996 until 2000. In addition, he was the Chief Financial Officer of Biomatrix from 1996 to 1998. He serves on the boards of directors of Royalty Pharma (Chair), Cibus Global Ltd., Intra-Cellular Therapies, Inc., eReceivables, LLC (Chair), and GeneNews, Ltd. From 1991 to 1995, he was Chief Executive Officer of RF&P Corporation, an investment company owned by the Virginia Retirement System. He was also Managing Director of PaineWebber and Company, a stock brokerage and asset management firm, in the mergers and acquisitions field. Mr. Riggs holds a B.A. from Middlebury College, Vermont and an M.B.A. from Columbia University. We believe that Mr. Riggs is qualified to serve on our board of directors due to his industry experience, management experience and public financial expertise.

Roberto Pedro Rosenkranz, Ph.D., MBA, has served on our board of directors since April 2010. Dr. Rosenkranz was Chairman and Chief Executive Officer of ROXRO Pharma, Inc., a pharmaceutical company, from October 1999 to December 2010. He is also currently executive chairman of Altos Therapeutics LLC, a pharmaceutical company, and has been serving in that capacity since 2012. Dr. Rosenkranz is also on the board of directors of Pherin Pharmaceuticals, Inc., a pharmaceutical company, and the Ronald and Ann Williams Charitable Foundation. Prior to assuming his leadership role at ROXRO, Dr. Rosenkranz was President and Chief Operating Officer of Scios, Inc., a biopharmaceutical company, from 1996 to 1997. From 1995 to 1996, he occupied multiple research, development and marketing positions at Roche Laboratories, a pharmaceutical company. From 1982 to 1996, Dr. Rosenkranz occupied multiple research, development and marketing positions at Syntex Laboratories, Inc., a pharmaceutical company. Dr. Rosenkranz previously sat on the boards of Medcenter Solutions do Brasil SA and Gemini Genomics Limited (also referred to as Gemini Genomics Plc). Dr. Rosenkranz received a B.A. in psychology from Stanford University, a Ph.D. in pharmacology and toxicology from the University of California, Davis, and an M.B.A from Santa Clara University. We believe that Dr. Rosenkranz is qualified to serve on our board of directors because of his scientific and technical background, as well as his experience in various leadership and management roles in the pharmaceutical industry.

Jorma Routti, Ph.D. has served on our board of directors since March 1994. He is also the Chairman of the board of directors of our subsidiary, FibroGen Europe Oy, and has served in that capacity since 2001. Since 2001, Dr. Routti has served as Executive Chairman of CIM Creative Industries Management Ltd., a venture capital firm located in Helsinki, Finland, where he works with investments and research in intellectual property oriented companies as well as with Knowledge Economy developments in several countries. Dr. Routti has served from 1995 to 2000 as Director General of Research of the European Commission, the executive body of the European Union. From 1985 to 1995, Dr. Routti served as President of SITRA, the Finnish Innovation Fund. Dr. Routti served as Dean and Professor at the Helsinki University of Technology from 1972 to 1985 and as a Scientist at CERN in Geneva from 1967 to 1972 and at the University of California, Berkeley. He has served on the board of directors (including as chairman) of several major corporations, high technology companies and international research establishments. Honors received by Dr. Routti include Fulbright and Eisenhower Exchange Fellowships and decorations in Finland and France. He has received a Ph.D. from the University of California, Berkeley in Physics, as well as a MSc in Technical Physics and a DrTechn h.c. in Technology from the Helsinki University of Technology. Dr. Routti was awarded with an honorary doctorate in philosophy from the University of Jyvaskyla, Finland. We believe that Dr. Routti is qualified to serve on our board of directors because of his scientific and technical background, vast experience with research and development, and leadership roles he has assumed serving on the boards of technology and research organizations.

James A. Schoeneck has served on our board of directors since April 2010. He joined Depomed, Inc., a pharmaceutical company, as President and Chief Executive Officer in April 2011 and has served as a director of Depomed, Inc. since December 2007. From September 2005 until he joined Depomed, Inc., Mr. Schoeneck was Chief Executive Officer of BrainCells Inc., a privately-held biopharmaceutical company. Prior to joining BrainCells Inc., he served as Chief Executive Officer of ActivX BioSciences, a development stage biotechnology company. Mr. Schoeneck's pharmaceutical experience also includes three years as President and Chief Executive Officer of Prometheus Laboratories Inc., a pharmaceutical and diagnostics company. Prior to joining Prometheus, Mr. Schoeneck spent three years as vice president and General Manager, Immunology, at Centocor, Inc. (now Janssen Biotech, Inc.), a biotechnology company, where he led the development of Centocor's commercial capabilities. His group launched Remicade®, which has become one of the world's largest pharmaceutical products. Earlier in his career, he spent 13 years at Rhone-Poulenc Rorer, Inc. (now Sanofi), a pharmaceutical company, serving in various sales and marketing positions of increasing responsibility. Mr. Schoeneck holds a B.S. degree in education from Jacksonville State University. We believe that Mr. Schoeneck is qualified to serve on our board of directors because of his extensive management experience in biotechnology.

Julian N. Stern has served as our corporate Secretary since 1993 and has served on our board of directors since November 1996. He is of counsel to the law firm of Goodwin Procter LLP, which he joined in 2008. Prior to joining Goodwin Procter in 2008, Mr. Stern was a partner at and counsel to the law firm of Heller Ehrman White & McAuliffe LLP. For forty six years, Mr. Stern has worked with healthcare-related and technology-related companies with a focus on corporate, financing and intellectual property law. Mr. Stern was the incorporator of ALZA Corporation, a developer and manufacturer of drug delivery based products, and served on its board of directors and as its corporate secretary until it was acquired by Johnson & Johnson in 2001. He also incorporated Affymax, N.V., a drug discovery company, and served as its secretary and director from inception until its acquisition by Glaxo P.L.C. in 1995. Mr. Stern incorporated Cetus Corporation, a biotechnology company, and served as its corporate secretary and as director until its acquisition by Chiron in 1991. Mr. Stern was a director and corporate secretary of DepoMed, Inc., a specialty pharmaceutical company from 2005 to 2013, and also serves as chairman and director of Pherin Pharmaceuticals, Inc., a privately held drug development company. He served as founder, corporate secretary and director of ROXRO Pharma, Inc., a drug development company, from 2001 until its sale in 2011 to Luitpold, a subsidiary of Dai Ichi. Mr. Stern is also Chairman and President of the Ronald and Ann Williams Charitable Foundation and a trustee of the Peter and Vernice Gasser Charitable Foundation. Mr. Stern received a B.S. from New York University in accounting and economics, and an LL.B. from Yale Law School. We believe Mr. Stern is qualified to serve on our board of directors due to his expertise in advising clients on corporate, securities, finance and technology law matters, as well as experience serving in leadership roles at various healthcare and technology companies.

Toshinari Tamura, Ph.D. has served on our board of directors since September 2008. He previously worked at Yamanouchi Pharmaceutical Co., Ltd., starting in 1972, and ultimately became Executive Corporate Officer and Representative Director. Following the merger to form Astellas Pharma, Inc., he was named Executive Vice President and Chief Science Officer of Astellas Pharma, Inc. and served in those roles and on the board of directors of Astellas from April 2005 until June 2008. Dr. Tamura was in charge of research and development of our PHI anemia program in 2004 and has remained familiar with the science of the program since that time. Dr. Tamura served as director of the board of KinoPharma, Inc., a drug development company, from September 2009 to March 2010. Dr. Tamura served as director of the board of IMMD Inc., a drug development company, from October 2010 to November 2012. Dr. Tamura is currently advisor to Shin Nippon Biomedical Laboratories, Ltd., a drug development company (from September 2008), Innovation Network Corporation of Japan, a government-sponsored private equity firm (from February 2010), and Japan Science and Technology Agency, a government sponsored organization promoting science and technology (from September 2012). Dr. Tamura holds a Ph.D. and Master degree in organic chemistry from the University of Tokyo, Graduate School of Pharmaceutical Sciences. Dr. Tamura also holds a Bachelor degree from Chiba University, Department of Pharmaceutical Sciences in pharmaceutical science. We believe that Dr. Tamura is qualified to serve on our board of directors because of his extensive management experience in the biotechnology and pharmaceutical industries in Japan, as well as his technical background in organic chemistry and pharmaceutical sciences.

Board Composition

Our business and affairs are managed under the direction of our board of directors, which currently consists of ten members. The members of our board of directors were elected in compliance with the provisions of our certificate of incorporation, as amended.

Our board of directors will consist of ten members upon completion of this offering. In accordance with our amended and restated certificate of incorporation to be filed in connection with this offering, immediately after this offering, our board of directors will be divided into three classes with staggered three-year terms. At each annual general meeting of stockholders, the successors to directors whose terms then expire will be elected to serve from the time of election and qualification until the third annual meeting following election. Our directors will be divided among the three classes as follows:

- The Class I directors will be Thomas B. Neff, Miguel Madero and James A. Schoeneck, and their terms will expire at the annual meeting of stockholders to be held in 2015;
- The Class II directors will be Rory B Riggs, Roberto Pedro Rosenkranz and Jorma Routti, and their terms will expire at the annual meeting of stockholders to be held in 2016; and
- The Class III directors will be Thomas F. Kearns, Jr., Kalevi Kurkijärvi, Julian N. Stern and Toshinari Tamura, and their terms will expire at the annual meeting of stockholders to be held in 2017.

We expect that any additional directorships resulting from an increase in the number of directors will be distributed among the three classes so that, as nearly as possible, each class will consist of one-third of the directors. The division of our board of directors into three classes with staggered three-year terms may delay or prevent a change of our management or a change in control.

Director Independence

Under the listing requirements and rules of The NASDAQ Stock Market, independent directors must comprise a majority of our board of directors as a listed company within a specified period of the completion of this offering. In addition, the rules of The NASDAQ Stock Market require that, subject to specified exceptions, each member of a listed company's audit, compensation, and nominating and corporate governance committees must be independent. Audit committee members must also satisfy the independence criteria set forth in Rule 10A-3 under the Securities Exchange Act of 1934, as amended, or the Exchange Act. Under the rules of The NASDAQ Stock Market, a

director will only qualify as an "independent director" if, in the opinion of that company's board of directors, that person does not have a relationship that would interfere with the exercise of independent judgment in carrying out the responsibilities of a director.

In order to be considered to be independent for purposes of Rule 10A-3 of the Exchange Act, a member of an audit committee of a listed company may not, other than in his or her capacity as a member of the audit committee, the board of directors, or any other board committee: (1) accept, directly or indirectly, any consulting, advisory, or other compensatory fee from the listed company or any of its subsidiaries; or (2) be an affiliated person of the listed company or any of its subsidiaries.

Our board of directors has undertaken a review of its composition, the composition of its committees and the independence of each director. Based upon information requested from and provided by each director concerning his background, employment and affiliations, including family relationships, our board of directors has determined that Thomas F. Kearns Jr., Kalevi Kurkijarvi, Miguel Madero, Rory. B. Riggs, Roberto Pedro Rosenkranz, Jorma Routti, James A. Schoeneck, Julian N. Stern and Toshinari Tamura, representing a majority of our directors, do not have any relationships that would interfere with the exercise of independent judgment in carrying out the responsibilities of a director and that each of these directors is "independent" as that term is defined under the applicable rules and regulations of the SEC and the listing requirements of The NASDAQ Stock Market. Our board of directors also determined that Messrs. Riggs, Schoeneck and Stern and Dr. Kurkijärvi, who comprise our audit committee, Messrs. Kearns, Schoeneck and Stern and Drs. Rosenkranz and Routti, who comprise our compensation committee and Messrs. Kearns, Madero and Riggs and Drs. Rosenkranz and Tamura, who comprise our nominating and corporate governance committee, satisfy the independence standards for those committees established by applicable rules and regulations of the SEC and the listing requirements of The NASDAQ Stock Market. In making this determination, our board of directors considered the current and prior relationships that each non-employee director has with our company and all other facts and circumstances our board of directors deemed relevant in determining their independence, including the beneficial ownership of our capital stock by each non-employee director.

Board Committees

Our board of directors has established an audit committee, a compensation committee and a nominating and corporate governance committee. Our board of directors may establish other committees to facilitate the management of our business. The composition and functions of each committee are described below. Members serve on these committees until their resignation or until otherwise determined by our board of directors.

Audit Committee

Upon the closing of this offering, our audit committee will consist of Messrs. Riggs, Schoeneck and Stern and Dr. Kurkijärvi. Our board of directors has determined that Messrs. Riggs, Schoeneck and Stern and Dr. Kurkijärvi are independent under The NASDAQ Stock Market listing standards and Rule 10A-3(b)(1) of the Exchange Act. Upon the closing of this offering, the chair of our audit committee will be Mr. Riggs, whom our board of directors has determined is an "audit committee financial expert" within the meaning of the SEC regulations. Our board of directors has also determined that each member of our audit committee can read and understand fundamental financial statements in accordance with applicable requirements. In arriving at these determinations, the board of directors has examined each audit committee member's scope of experience and the nature of their employment in the corporate finance sector. The functions of this committee include:

- selecting a qualified firm to serve as the independent registered public accounting firm to audit our financial statements and approving fees payable to such firm;
- helping to ensure the independence and performance of the independent registered public accounting firm;

- discussing the scope and results of the audit with the independent registered public accounting firm, and reviewing, with management and the independent accountants, our interim and year-end operating results;
- developing procedures for employees to submit concerns anonymously about questionable accounting or audit matters;
- reviewing our policies on risk assessment and risk management;
- reviewing related party transactions;
- obtaining and reviewing a report by the independent registered public accounting firm at least annually, that describes our internal quality-control procedures, any material issues with such procedures, and any steps taken to deal with such issues when required by applicable law; and
- approving (or, as permitted, pre-approving) all audit and all permissible non-audit services, other than de minimis non-audit services, to be performed by the independent registered public accounting firm.

Compensation Committee

Upon the closing of this offering, our compensation committee will consist of Messrs. Kearns, Schoeneck and Stern and Drs. Rosenkranz and Routti. Our board of directors has determined that Messrs. Kearns, Schoeneck and Stern and Drs. Rosenkranz and Routti are independent under The NASDAQ Stock Market listing standards, each is a "non-employee director" as defined in Rule 16b-3 promulgated under the Exchange Act and each is an "outside director" as that term is defined in Section 162(m) of the Internal Revenue Code of 1986, as amended, or Section 162(m). Upon the closing of this offering, the chair of our compensation committee will be Mr. Schoeneck. The functions of this committee include:

- reviewing and approving, or recommending that our board of directors approve, the compensation of our executive officers;
- reviewing and recommending to our board of directors the compensation of our directors;
- reviewing and approving, or recommending that our board of directors approve, the terms of compensatory arrangements with our executive officers;
- administering our stock and equity incentive plans;
- selecting independent compensation consultants, approving fees payable to them, and assessing conflict of interest of compensation consultants;
- reviewing and approving, or recommending that our board of directors approve, incentive compensation and equity plans; and
- reviewing and establishing general policies relating to compensation and benefits of our employees and reviewing our overall compensation strategy.

Nominating and Corporate Governance Committee

Upon the closing of this offering, our nominating and corporate governance committee will consist of Messrs. Kearns, Madero and Riggs and Drs. Rosenkranz and Tamura. Our board of directors has determined that Messrs. Kearns, Madero and Riggs and Drs. Rosenkranz and Tamura are independent under the current rules and regulations of the SEC and The NASDAQ Stock Market. Upon the closing of this offering, the chair of our nominating and corporate governance committee will be Mr. Kearns. The functions of this committee include:

- identifying, evaluating and selecting, or recommending that our board of directors approve, nominees for election to our board of directors and its committees;
- evaluating the performance of our board of directors and of individual directors;

- considering and making recommendations to our board of directors regarding the composition of our board of directors and its committees;
- reviewing developments in corporate governance practices;
- evaluating the adequacy of our corporate governance practices and reporting;
- reviewing management succession plans;
- developing and making recommendations to our board of directors regarding corporate governance guidelines and matters; and
- overseeing an annual evaluation of the board of directors' performance.

Code of Business Conduct and Ethics

We will adopt a Code of Business Conduct and Ethics that applies to all of our employees, officers, including our principal executive officer, principal financial officer and principal accounting officer or controller, or persons performing similar functions and agents and representatives, including directors and consultants. The full text of our Code of Business Conduct and Ethics will be posted on our website at www.FibroGen.com. We intend to disclose future amendments to certain provisions of our Code of Business Conduct and Ethics, or waivers of such provisions applicable to any principal executive officer, principal financial officer, principal accounting officer or controller, or persons performing similar functions, and our directors, on our website identified above.

Compensation Committee Interlocks and Insider Participation

During 2013, our compensation committee consisted of Messrs. Kearns, Madero and Stern and Drs. Rosenkranz and Routti. None of the members of the compensation committee is currently or has been at any time one of our employees. None of our executive officers currently serves, or has served during the last year, as a member of the board of directors or compensation committee of any entity that has one or more executive officers serving as a member of our board of directors or compensation committee.

Non-Employee Director Compensation

Cash Compensation

No cash compensation was paid to our non-employee directors in 2013. Although we do not have a written policy, we generally reimburse our directors for their reasonable out-of-pocket expenses incurred in attending board of directors and committee meetings.

Equity Incentive Compensation

The following table sets forth information regarding non-cash compensation earned by or paid to our non-employee directors during 2013:

Name (2)	Option Awards (1)	Total
Thomas F. Kearns	$ 175,950	$ 175,950
Kalevi Kurkijärvi.	117,300	117,300
Miguel Madero	117,300	117,300
Rory B. Riggs	117,300	117,300
Roberto Pedro Rosenkranz	175,950	175,950
Jorma Routti	117,300	117,300
James A. Schoeneck	175,950	175,950
Julian N. Stern	175,950	175,950
Toshinari Tamura	117,300	117,300

(1) The amounts reported do not reflect the amounts actually received by our non-employee directors. Instead, these amounts reflect the aggregate grant date fair market value of each stock option granted to our non-employee directors during the fiscal year ended December 31, 2013, as computed in accordance with FASB ASC 718. Assumptions used in the calculation of these amounts are included in Note 9 to our financial statements included in this prospectus.

(2) The table below lists the aggregate number of shares and additional information with respect to outstanding option awards held by each of our non-employee directors as of December 31, 2013.

The following table lists the aggregate number of shares with respect to the outstanding option awards held by each of our non-employee directors as of December 31, 2013:

Name	Number of shares subject to outstanding options as of December 31, 2013
Thomas F. Kearns	117,000
Kalevi Kurkijärvi	114,000
Miguel Madero	78,000
Rory B. Riggs	102,800
Roberto Pedro Rosenkranz	25,000
Jorma Routti	90,000
James A. Schoeneck	60,000
Julien N. Stern	117,000
Toshinari Tamura	78,000

Future Director Compensation

Our board of directors has adopted a director compensation policy for non-employee directors which provides for cash and equity compensation. The policy will become effective upon the date on which this offering becomes effective. Pursuant to the director compensation policy, non-employee directors will be paid annual cash compensation of $35,000. In addition, non-employee directors will be paid $10,000 annually for serving on the audit committee ($20,000 annually for the chairman), $7,500 annually for serving on the compensation committee ($15,000 annually for the chairman), and $5,000 annually for serving on the nominating and governance committee ($10,000 annually for the chairman). Non-employee directors will be reimbursed for their reasonable out-of-pocket expenses to cover attendance at and participation in meetings of our board of directors.

Our non-employee directors will be granted initial and/or annual option grants under our 2014 Equity Incentive Plan (or the 2014 Plan). Newly appointed or newly elected directors will be granted an option to purchase 12,000 shares of our common stock. The initial option grant will vest in equal quarterly installments over three years from the date of grant, subject to the non-employee director's continuous service on each applicable vesting date. On the date of each annual meeting of our shareholders, each individual who is elected or appointed as a non-employee director and each other non-employee director who continues to serve as a non-employee director immediately after such annual meeting of our shareholders will be granted an option to purchase 12,000 shares of our common stock; *provided*, that if the individual is elected or appointed to the board at a time other than at our annual meeting of shareholders, the number of shares of our common stock subject to such annual grant will be pro-rated based on the number of days between the date of such director's election or appointment and the first anniversary of the most recent annual shareholder meeting to occur prior to such director's election or appointment to our board. The annual option grant will vest in equal quarterly installments over two years following the vesting commencement date, subject to the non-employee director's continuous service on each applicable vesting date. All options granted under our director compensation policy will be granted with an exercise price equal to the fair market value of our common stock on the grant date. The vesting of all options will cease upon a non-employee director's resignation from the board or other cessation of service, unless our board determines otherwise. All unvested options will vest in full immediately prior to a change in control (as defined in the 2014 Plan), subject to the non-employee director's continuous service as of the day prior to the closing of such change in control.

EXECUTIVE COMPENSATION

Our named executive officers, or NEOs, for 2013, which consist of our principal executive officer and the next two most highly compensated executive officers, are:

- Thomas B. Neff, Chief Executive Officer;
- Frank H. Valone, Chief Medical Officer; and
- K. Peony Yu, Vice President, Clinical Development.

2013 Summary Compensation Table

The following table sets forth all of the compensation awarded to, earned by or paid to our NEOs during 2013.

Name and principal position	Year	Salary ($)	Bonus ($)(1)	Option Awards ($)	Non-Equity Incentive Plan Compensation ($)(2)	All Other Compensation ($)(3)	Total ($)
Thomas B. Neff *Chief Executive Officer*	2013	709,139	600,000	—	482,750	8,994	1,800,883
Frank H. Valone *Chief Medical Officer*	2013	424,360	50,000	—	192,816	—	667,176
K. Peony Yu *Vice President, Clinical Development*	2013	394,057	173,850	—	180,275	—	748,182

(1) Amount represents an one-time discretionary cash bonus earned in 2013.
(2) Amount represents each NEO's annual performance-based cash bonuses earned for 2013 performance.
(3) Amount represents annual health club membership fees and an associated tax gross-up in respect of such fees.

Outstanding Equity Awards at December 31, 2013

The following table provides information regarding outstanding equity awards held by each of our NEOs as of December 31, 2013.

	Option Awards				
Name	Vesting Commencement Date	Number of Securities Underlying Unexercised Options (#) Exercisable	Number of Securities Underlying Unexercised Options (#) Unexercisable(1)	Option Exercise Price ($)	Option Expiration Date
Thomas B. Neff	3/1/2007(1)	310,000	—	4.03	3/1/2017
	3/1/2007(2)	310,000	—	4.03	8/20/2017
	3/1/2008(3)	400,000	—	2.35	3/12/2018
	3/1/2009(3)	500,000	—	3.60	3/11/2019
	3/1/2010(4)	297,001	98,999	2.90	6/9/2020
	3/1/2011(4)	198,001	161,999	3.50	6/7/2021
	3/1/2012(4)	63,001	116,999	5.95	6/27/2022
Frank H. Valone	12/1/2008(3)	56,000	—	2.35	12/3/2018
	3/1/2009(4)	19,000	1,000	3.93	8/11/2019
	3/1/2010(4)	30,000	10,000	2.90	6/9/2020
	3/1/2011(4)	22,001	17,999	3.50	6/7/2021
	3/1/2012(4)	5,950	11,050	5.95	6/27/2022
K. Peony Yu	3/1/2010(4)	30,000	10,000	2.90	6/9/2020
	12/3/2008(3)	70,000	—	2.90	6/24/2020
	3/1/2011(4)	22,000	18,000	3.50	6/7/2021
	3/1/2012(4)	6,300	11,700	5.95	6/27/2022

(1) All shares subject to the option were vested on the vesting commencement date.
(2) All shares subject to the option vest on the third anniversary of the vesting commencement date.
(3) Twenty-five percent of the shares subject to the option vests on the first anniversary of the vesting commencement date, and the remainder vests in equal amounts quarterly thereafter for the following three years.
(4) Twenty percent of the shares subject to each option vests on the first anniversary of the vesting commencement date and 80% of the shares subject to each option vests in 16 substantially equal quarterly installments thereafter over for the following four years.

Offer Letter Agreements

Frank H. Valone

We entered into an offer letter agreement with Dr. Valone, our Chief Medical Officer, in November 2008. The offer letter has no specific term and constitutes an at-will employment arrangement. Dr. Valone's annual base salary as of December 31, 2013 was $428,480. In connection with his employment, Dr. Valone was granted an initial option to purchase 80,000 shares of our common stock, pursuant to the terms of our Amended and Restated 2005 Stock Plan (described below). Dr. Valone has exercised part of the option to purchase 24,000 shares of our common stock and the remainder of the option is fully vested and exercisable.

K. Peony Yu

We entered into an offer letter agreement with Dr. Yu, our Vice President, Clinical Development, in November 2008. The offer letter has no specific term and constitutes an at-will employment arrangement. Dr. Yu's annual base salary as of December 31, 2013 was $400,610. In connection with her employment, Dr. Yu was granted an initial option to purchase 70,000 shares of our common stock, pursuant to the terms of our Amended and Restated 2005 Stock Plan. The option is fully vested and exercisable.

Potential Payments and Acceleration of Equity upon Termination or in Connection with a Change in Control

The section below describes the payments and benefits that we would have made to our NEOs in connection with certain terminations of employment or certain corporate transactions like a change in control, if such events had occurred on December 31, 2013.

The form of option agreement under our Amended and Restated 2005 Stock Plan, or the 2005 Plan, provides that in the event an option holder is terminated by us without cause (as defined below) following a change in control (as defined below) or if the option holder incurs a constructive termination (as defined below) within 12 months following a change in control, any outstanding unvested options will accelerate in full as of the date of any such termination. Accordingly, if any of our named executive officers incurred a qualifying termination of employment following a change in control on December 31, 2013, all outstanding unvested options granted to them under our 2005 Plan would accelerate in full as of December 31, 2013, and such options would remain exercisable for the applicable post-termination exercise period set forth in their option grant documents.

For purposes of the standard form of option agreement under the 2005 Plan, "cause" generally means (1) a commission of a felony related to us or our business or any crime involving fraud or moral turpitude; (2) the attempted commission of, or participation in, a fraud against us; (3) the unauthorized use or disclosure of our confidential information or trade secrets; or (4) the participant's willful failure to substantially perform his or her duties and responsibilities owed to us. For purposes of the standard form of option agreement under the 2005 Plan, "constructive termination" generally means (1) a substantial reduction in the participant's duties or responsibilities in effect immediately prior to the effective time of a change in control; (2) a material reduction in

a participant's annual base salary as in effect on the closing date of the change in control or as increased thereafter; (3) any failure by us to continue in effect any benefit plan or program in which the participant was participating immediately prior to the effective time of a change in control or the taking of any action by us that would adversely affect a participant's participation in or reduce benefits under any such plans or programs (provided, that a constructive termination will not be deemed to have occurred if we provide for the participation in benefit plans and programs that, taken as a whole, are comparable to those that were provided immediately prior to the change in control); (4) a relocation of the participant's business office to a location more than 50 miles from the location at which the participant performed his or her duties as of the effective time of the change in control; or (5) a material breach by us of any provision of any material agreement between the participant and us concerning the terms and conditions of the participant's employment.

On October 21, 2014, our compensation committee approved a form of change in control severance agreement, or the Change in Control Severance Agreement, which has been filed as an exhibit to the registration statement of which this prospectus is a part. It is expected that each of our executive officers, including each of our named executive officers, will enter into a Change in Control Severance Agreement on or about the date on which this offering becomes effective.

Under the terms of the Change in Control Severance Agreement, if an executive's employment is terminated by the Company without cause and other than due to death or disability or the executive resigns for good reason, in either case, in connection with or within eighteen (18) months following the effective date of a change in control (as defined in the Change in Control Severance Agreement), subject to the executive's timely execution (and non-revocation) of a release of claims within sixty (60) days following the date of such termination, the executive will be entitled to the following severance benefits: (1) cash severance equal to either twelve (12), eighteen (18) or twenty-four (24) months of the executive's base salary then in effect (with the applicable multiplier, that is, twelve, eighteen or twenty-four, varying depending on the executive), payable in a either a lump sum or over the twelve (12), eighteen (18) or twenty-four (24) month period, as applicable, following the date of termination (with the applicable multiplier varying depending on the executive), with such payment to be made (or to commence, as applicable) within five (5) days following the date on which the release becomes effective; (2) subject to the executive's timely election of continuation coverage under the Consolidated Omnibus Budget Reconciliation Act of 1985, as amended, or another state law equivalent (COBRA), payment by the Company of COBRA premiums for the executive and his or her eligible dependents for a period of up to eighteen (18) months following the date of the executive's termination; and (3) all outstanding stock options held by the executive will become fully vested and exercisable as of immediately prior to the date of executive's termination of employment. With respect to the cash severance benefits payable to our named executive officers under the Change in Control Severance Agreements, the applicable severance multiplier is 24 for Thomas Neff, and 18 for each of Frank Valone and K. Peony Yu, respectively, and the cash severance will be paid in installments over the applicable 24 month or 18 month severance period for each of our named executive officers. Notwithstanding the foregoing, to the extent that an executive would be entitled to a greater level of severance benefits under the terms and conditions of a severance plan or policy provided by the Company or its successor to other Company employees being terminated in connection with or within twelve (12) months following a change in control but for the existence of the Change in Control Severance Agreement, the executive will be entitled to receive the greater of the severance benefits provided under such plan or policy or the severance benefits provided under the Change in Control Severance Agreement.

In addition, to the extent that any payment or benefit that an executive would receive under the Change in Control Agreement or otherwise would constitute a "parachute payment" within the meaning of Section 280G of the Internal Revenue Code and such payments or benefits would be subject to the excise tax imposed by Section 4999 of the Internal Revenue Code, then such payments or benefits will either be (1) provided to the executive in full, or (2) reduced to such lesser amount that would result in no portion of such payments or benefits being subject to the excise tax, whichever amount after taking into account all applicable taxes, including the excise tax, would result in the executive's receipt, on an after-tax basis, of the greatest amount of such payments or benefits.

For purposes of the Change in Control Severance Agreement, "cause" for termination of an executive's employment will exist if an executive is terminated for any of the following reasons: (1) the executive's willful failure substantially to perform his or her duties and responsibilities to the Company or a deliberate violation of a Company policy; (2) the executive's commission of any act of fraud, embezzlement, dishonesty or any other willful misconduct that has caused or is reasonably expected to result in material injury to the Company; (3) unauthorized use or disclosure by the executive of any proprietary information or trade secrets of the Company or any other party to whom executive owes an obligation of nondisclosure as a result of his or her relationship with the Company; or (4) the executive's willful breach of any of his or her obligations under any written agreement or covenant with the Company.

For purposes of the Change in Control Severance Agreement, "good reason" generally means the existence of any of the following conditions without the executive's written consent: (1) a material reduction in job duties or responsibilities inconsistent with the executive's position with the Company (provided, that any such reduction or change after a change in control will not constitute good reason if the executive retains reasonably comparable duties and responsibilities with respect to the Company's business within the successor entity following a change in control); (2) a reduction of the executive's then current base salary; (3) the relocation of the executive's principal place of employment to a place that increases the executive's one-way commute by more than forty (40) miles as compared to the executive's principal place of employment prior to such relocation; (4) any material breach by the Company of the Change in Control Severance Agreement or any other written agreement between the Company and the executive; or (5) the failure by any successor to the Company to assume the Change in Control Severance Agreement and any obligations thereunder. In order to resign for good reason, the executive must give written notice to the Company of the event forming the basis of the termination for good reason within sixty (60) days after the date on which the Company gives written notice to the executive of the Company's decision to take any action set forth above, the Company must fail to cure such condition within thirty (30) days after receipt of the executive's written notice and the executive must terminate his or her employment within thirty (30) days following the expiration of the cure period.

Equity Incentive Plans

The principal features of our equity incentive plans are summarized below. These summaries are qualified in their entirety by reference to the actual text of the plans, which are filed as exhibits to the registration statement of which this prospectus is a part.

2014 Equity Incentive Plan

Our board of directors adopted, and we expect that our stockholders will approve, our 2014 Equity Incentive Plan, or 2014 Plan, prior to this offering. The 2014 Plan will become effective on the date of the underwriting agreement between us and the underwriters for this offering, or the IPO Date. The 2014 Plan will be the successor to our Amended and Restated 2005 Stock Plan, or the 2005 Plan, which is described below. Once the 2014 Plan becomes effective, no further grants will be made under the 2005 Plan.

Stock Awards. The 2014 Plan provides for the grant of incentive stock options, or ISOs, to our employees and for the grant of nonstatutory stock options, stock appreciation rights, restricted stock awards, restricted stock unit awards, performance-based stock awards, performance-based cash awards and other stock awards to our employees, directors and consultants.

Authorized Shares. Initially, the aggregate number of shares of our common stock that may be issued pursuant to stock awards under the 2014 Plan after the IPO Date will be 7,603,509 (which shares are as of September 9, 2014 and are currently reserved for future grant under our 2005 Plan and will cease to be reserved under our 2005 Plan immediately prior to the time our 2014 Plan becomes effective) plus any of the 12,972,999 shares subject to outstanding stock options or other stock awards that would have otherwise returned to our 2005 Plan (such as upon the expiration or termination of a stock option under such plan prior to its exercise). Additionally, the number of

shares of our common stock reserved for issuance under our 2014 Plan will automatically increase on January 1 of each year, beginning on January 1, 2016 and ending on and including January 1, 2024, by 4.0% of the total number of shares of our capital stock outstanding on December 31 of the preceding calendar year, or a lesser number of shares determined by our board of directors. The maximum number of shares that may be issued upon the exercise of ISOs under our 2014 Plan is 24,000,000.

Shares issued under our 2014 Plan include authorized but unissued or reacquired shares of our common stock. Shares subject to stock awards granted under our 2014 Plan that expire or terminate without being exercised in full, or that are paid out in cash rather than in shares, do not reduce the number of shares available for issuance under our 2014 Plan. Additionally, shares issued pursuant to stock awards under our 2014 Plan that we repurchase or that are forfeited, as well as shares used to pay the exercise price of a stock award or to satisfy the tax withholding obligations related to a stock award, become available for future grant under our 2014 Plan.

Plan Administration. Our board of directors, or a duly authorized committee of our board of directors, will administer our 2014 Plan. Our board of directors may also delegate to one or more of our officers the authority to (i) designate employees (other than officers) to receive specified stock awards, and (ii) determine the number of shares of our common stock to be subject to such stock awards. Subject to the terms of our 2014 Plan, the board of directors has the authority to determine the terms of awards, including recipients, the exercise, purchase or strike price of stock awards, if any, the number of shares subject to each stock award, the fair market value of a share of our common stock, the vesting schedule applicable to the awards, together with any vesting acceleration, and the form of consideration, if any, payable upon exercise or settlement of the award and the terms of the award agreements. The board of directors has the power to modify outstanding awards under our 2014 Plan.

Section 162(m) Limits. At such time as is necessary for compliance with Section 162(m) of the Internal Revenue Code, no participant may be granted stock awards covering more than 2,000,000 shares of our common stock (subject to adjustment to reflect any split of our common stock) under our 2014 Plan during any calendar year pursuant to stock options, stock appreciation rights and other stock awards whose value is determined by reference to an increase over an exercise price or strike price of at least 100% of the fair market value of our common stock on the date of grant. Additionally, no participant may be granted in a calendar year a performance stock award covering more than 2,000,000 shares of our common stock (subject to adjustment to reflect any split of our common stock) or a performance cash award having a maximum value in excess of $2,000,000 under our 2014 Plan. These limitations are intended to give us the flexibility to grant compensation to covered employees that may qualify for the “qualified performance-based compensation” exception to the $1,000,000 annual limitation on the income tax deductibility imposed by Section 162(m) of the Internal Revenue Code.

Performance Awards. Our 2014 Plan permits the grant of performance-based stock and cash awards that may qualify as performance-based compensation that is not subject to the $1,000,000 limitation on the income tax deductibility imposed by Section 162(m) of the Internal Revenue Code. Our compensation committee may structure awards so that the stock or cash will be issued or paid only following the achievement of certain pre-established performance goals during a designated performance period. However, we retain the discretion to grant awards under the 2014 Plan that may not qualify for full deductibility under Section 162(m) of the Internal Revenue Code.

Our compensation committee may establish performance goals by selecting from one or more performance criteria set forth in the 2014 Plan:

- earnings (including earnings per share and net earnings);
- earnings before interest, taxes and depreciation;
- earnings before interest, taxes, depreciation and amortization;
- earnings before interest, taxes, depreciation, amortization and legal settlements;
- earnings before interest, taxes, depreciation, amortization, legal settlements and other income (expense);

- earnings before interest, taxes, depreciation, amortization, legal settlements, other income (expense) and stock-based compensation;
- earnings before interest, taxes, depreciation, amortization, legal settlements, other income (expense), stock-based compensation and changes in deferred revenue;
- total stockholder return;
- return on equity or average stockholder's equity;
- return on assets, investment, or capital employed;
- stock price;
- margin (including gross margin);
- income (before or after taxes);
- operating income;
- operating income after taxes;
- pre-tax profit;
- operating cash flow;
- sales or revenue targets;
- increases in revenue or product revenue;
- expenses and cost reduction goals;
- improvement in or attainment of working capital levels;
- economic value added (or an equivalent metric);
- market share
- cash flow;
- cash flow per share;
- share price performance;
- debt reduction;
- implementation or completion of projects or processes;
- employee retention;
- stockholders' equity;
- capital expenditures;
- debt levels;
- operating profit or net operating profit;
- workforce diversity;
- growth of net income or operating income;
- billings;
- bookings;
- initiation of phases of clinical trials and/or studies by specified dates;
- patient enrollment rates;

- budget management;
- regulatory body approval with respect to products, studies and/or trials;
- commercial launch of products; and
- to the extent that an Award is not intended to comply with Section 162(m) of the Code, other measures of performance selected by the Board.

The performance goals may be based on a company-wide basis, with respect to one or more business units, divisions, affiliates, or business segments, and in either absolute terms or relative to the performance of one or more comparable companies or relevant indices.

Changes to Capital Structure. In the event there is a specified type of change in our capital structure, such as a stock split, reverse stock split, or recapitalization, appropriate adjustments will be made to (1) the class and maximum number of shares reserved for issuance under the 2014 Plan; (2) the class and maximum number of shares by which the share reserve may increase automatically each year; (3) the class and maximum number of shares that may be issued upon the exercise of incentive stock options; (4) the class and maximum number of shares subject to stock awards that can be granted in a calendar year (as established under our 2014 Plan pursuant to Section 162(m) of the Internal Revenue Code); and (5) the class and number of shares and exercise price, strike price, or purchase, price, if applicable, of all outstanding stock awards.

Corporate Transactions. Our 2014 Plan provides that in the event of certain specified significant corporate transactions, as defined under our 2014 Plan, unless otherwise provided in an individual agreement between us and the award holders, each outstanding award will be treated as our plan administrator determines. The plan administrator may (1) arrange for the assumption, continuation or substitution of a stock award by a successor corporation; (2) arrange for the assignment of any reacquisition or repurchase rights held by us to a successor corporation; (3) accelerate the vesting (and exercisability, if applicable), in whole or in part, of the stock award and provide for its termination, if not exercised, as applicable, prior to the transaction; (4) arrange for the lapse, in whole or in part, of any reacquisition or repurchase rights held by us; or (5) cancel or arrange for the cancellation of the stock award, to the extent not vested or not exercised prior to the transaction, in exchange for a cash payment, if any, determined by the board; or (6) cancel or arrange for the cancellation of the stock award, to the extent not vested or not exercised prior to the transaction, in exchange for a payment (in such form as determined by the board), equal to the excess, if any, of the value of the property the participant would have received upon exercise of the award immediately prior to the transaction, over any exercise price payable in connection with such exercise. The plan administrator is not obligated to treat all stock awards or portions of stock awards, even those that are of the same type, in the same manner.

Change in Control. A stock award may be subject to additional acceleration of vesting and exercisability upon or after a change in control, as defined in the 2014 Plan, as may be provided in the stock award agreement for such stock award or in any other written agreement between us and a participant, but in the absence of such a provision, no such acceleration will occur.

Plan Amendment or Termination. Subject to the terms of the 2014 Plan, our board of directors has the authority to amend, suspend, or terminate our 2014 Plan, provided that such action does not materially impair the existing rights of any participant without such participant’s written consent. No ISOs may be granted after the tenth anniversary of the date our board of directors adopted our 2014 Plan.

Our board of directors approved a standard form of option grant notice and agreement and a form of option grant notice and agreement providing for change in control acceleration benefits, or the change in control form of option grant notice and agreement, to be used in connection with the grant of options under the 2014 Plan. In addition, our compensation committee of the board of directors approved a standard form of restricted stock unit grant notice and agreement to be used in connection with the grant of restricted stock units under the 2014 Plan. Each of the foregoing forms of award agreements has been filed as an exhibit to the registration statement of which this prospectus is a part.

Under our change in control form of option grant notice and agreement, in the event of a change in control (as defined in the 2014 Plan), (1) if at the time of the change in control, a participant's outstanding option is assumed, continued or otherwise substituted in the change in control transaction and the participant's employment is involuntarily terminated by the Company or its successor corporation without cause or due to a constructive termination within twelve (12) months following the closing of such change in control transaction, the vesting and exercisability of the unvested portion of the participant's option will accelerate in full on the date of such termination, and/or (2) if a participant's outstanding option is not assumed, continued or otherwise substituted in the change in control transaction, the unvested portion of the participant's option will vest and become exercisable as of immediately prior to the closing of the change in control transaction.

For purposes of the change in control form of option grant notice and agreement, "constructive termination" generally means a participant's termination of employment, without the participant's written consent, of any of the following events: (1) a substantial reduction in the participant's duties or responsibilities (and not simply a change in title or reporting relationships) in effect immediately prior to the effective date of a change in control; (2) a material reduction in the participant's annual base salary, as in effect on the effective date of the change in control or as increased thereafter; (3) the failure by the Company (or its successor) to continue in effect any benefit plan or program, including incentive plans or plans with respect to the receipt of securities of the Company, in which the participant was participating immediately prior to the effective date of the change in control, or the Benefit Plans, or the taking of any action by the Company (or its successor) that would adversely affect the participant's participation in or would reduce the participant's benefits under the Benefit Plans or that would deprive the participant of any fringe benefit that the participant enjoyed immediately prior to the effective date of the change in control, except that a constructive termination will not be deemed to have occurred if the Company (or its successor) provides for the participant's participation in benefit plans and programs that, taken as a whole, are comparable to the Benefit Plans; (4) a relocation of the participant's business office location more than fifty (50) miles from the location at which the participant performed his or her duties as of the effective date of the change in control; or (5) a material breach by the Company (or its successor) of any provision of any material agreement between the participant and the Company concerning the terms and conditions of the participant's employment.

On October 21, 2014, the Compensation Committee of the Board approved the grant of stock options to purchase an aggregate of 1,686,716 shares of our common stock and the grant of 560,278 restricted stock units to certain of our employees and directors pursuant to the 2014 Plan. The grant date for these awards will be the date this registration statement becomes effective and, with respect to the stock option grants, the per share exercise price will be equal to the initial public offering price. Of these awards, Thomas Neff, Frank Valone, Pat Cotroneo and Peony Yu were granted, in the aggregate, (1) stock options to purchase an aggregate of 312,000 shares of our common stock (with a per share exercise price equal to the initial public offering price) pursuant to our change in control form of option grant notice and agreement (described above), and (2) an aggregate of 156,000 restricted stock units pursuant to our standard from of restricted stock unit grant notice and agreement (described above).

Amended and Restated 2005 Stock Plan

Our 2005 Plan, was adopted by our board of directors on February 17, 2005 and approved by our stockholders in September 2005 and was last amended by our board of directors on March 20, 2014 and approved by our stockholders on July 8, 2014. The 2005 Plan amended and restated our Amended and Restated 1999 Stock Plan (described below). The 2005 Plan will terminate on the IPO Date. However, any outstanding awards granted under the 2005 Plan will remain outstanding, subject to the terms of the 2005 Plan and applicable award agreements thereunder, until such awards are exercised (if applicable) or otherwise terminate or expire by their terms.

Awards. The 2005 Plan provides for the discretionary grant of incentive stock options, nonstatutory stock options, stock purchase awards, stock bonus awards, stock appreciation rights, stock unit awards and other stock awards to our eligible employees, non-employee directors and consultants.

Authorized Shares. Subject to the provisions of the 2005 Plan relating to any capitalization adjustments to reflect any split or change to our common stock, the maximum number of shares of our common stock that may be issued under the 2005 Plan is 26,286,861 shares. Subject to any capitalization adjustments to reflect any split or change to our common stock, the maximum number of shares of common stock that may be issued upon the exercise of incentive stock options under our 2005 Plan is 26,286,861 shares.

Plan Administration. Our board of directors or a duly authorized committee of our board of directors administers the 2005 Plan and the awards granted under the 2005 Plan. Subject to the terms of the 2005 Plan, our board of directors (or its delegate) has the authority to determine and amend the terms of stock awards, including recipients, the number of shares subject to stock awards, the vesting schedule applicable to stock awards, the form of consideration, if any, payable upon exercise or settlement of any stock award, the exercise or strike price of stock awards, if applicable, and any accelerated vesting and exercisability provisions. Our board of directors may, with the consent of any adversely affected optionholder, reduce the exercise price of any outstanding option under the 2005 Plan, cancel any outstanding option and grant a new award in substitution therefor, or take any other action that is treated as a repricing under generally accepted accounting principles.

Capitalization Adjustments. In the event that any change is made in, or other events occur with respect to, our common stock subject to the 2005 Plan or any stock award, such as certain mergers, consolidations, reorganizations, recapitalizations, stock dividends, stock splits, or other similar transactions, appropriate adjustments will be made to the classes and maximum number of shares subject to the 2005 Plan, any limits on the number of shares that may be granted to any person under the 2005 Plan, and the number of shares subject to, and the price per share, if applicable, of any outstanding stock awards.

Corporate Transactions. The 2005 Plan generally provides that unless otherwise provided in a written agreement between us or any of our affiliates and a participant, in the event of certain corporate transactions, outstanding stock awards may be assumed, continued or substituted for similar stock awards by the surviving or acquiring corporation (or its parent) and any reacquisition or repurchase rights held by us may be assigned to the successor company (or its parent). If outstanding stock awards are not so assumed, continued or substituted by the surviving or acquiring corporation (or its parent), then, contingent upon the closing of the corporate transaction, the vesting and exercisability of any outstanding stock awards held by participants who are providing continuous service at the effective time of the corporate transaction or whose continuous service with us has not terminated more than 3 months prior to the effective time of the corporate transaction, or recent participants, will be accelerated to a date prior to the effective time of the corporate transaction (except if an employee is terminated for cause (as defined in the employee's stock award agreement)) and, at or prior to the effective time of the corporate transaction, such stock awards will terminate if not exercised (if applicable) and any reacquisition or repurchase rights held by us with respect to such stock awards will lapse. If outstanding stock awards are not assumed, continued or substituted by the surviving or acquiring corporation (or its parent), any outstanding stock awards held by participants who are not recent participants (other than a stock award consisting of vested and outstanding shares of common stock not subject to our right of repurchase) will terminate if not exercised (if applicable) prior to the effective time of the corporate transaction; however, any reacquisition or repurchase rights held by us with respect to such stock awards may continue to be exercised. In addition, if a stock award will terminate if not exercised prior to the effective time of a corporate transaction, our board of directors may provide that such stock awards will be canceled in exchange for a payment, in such form as may be determined by our board of directors, equal to the excess, if any, of the value of the property the holder of such stock award would have received upon exercise of the stock award over any exercise price payable by such holder.

Change in Control. If provided in a stock award agreement, stock awards may be subject to additional acceleration of vesting and exercisability upon or after a change in control (as defined in the 2005 Plan). The standard form of option agreement under the 2005 Plan provides that all outstanding options held by a participant will accelerate in full if the participant is terminated without cause (as defined below) following a change in control. The standard form of option agreement under the 2005 Plan also provides that any outstanding options held by a participant will accelerate in full if the participant incurs a constructive termination (as defined below)

within 12 months following a change in control. For purposes of the standard form of option agreement under the 2005 Plan, "cause" generally means (1) a commission of a felony related to us or our business or any crime involving fraud or moral turpitude; (2) the attempted commission of, or participation in, a fraud against us; (3) the unauthorized use or disclosure of our confidential information or trade secrets; or (4) the participant's willful failure to substantially perform his or her duties and responsibilities owed to us. For purposes of the standard form of option agreement under the 2005 Plan, "constructive termination" generally means (1) a substantial reduction in the participant's duties or responsibilities in effect immediately prior to the effective time of a change in control; (2) a material reduction in a participant's annual base salary as in effect on the closing date of the change in control or as increased thereafter; (3) any failure by us to continue in effect any benefit plan or program in which the participant was participating immediately prior to the effective time of a change in control or the taking of any action by us that would adversely affect a participant's participation in or reduce benefits under any such plans or programs (provided, that a constructive termination will not be deemed to have occurred if we provide for the participation in benefit plans and programs that, taken as a whole, are comparable to those that were provided immediately prior to the change in control); (4) a relocation of the participant's business office to a location more than 50 miles from the location at which the participant performed his or her duties as of the effective time of the change in control; or (5) a material breach by us of any provision of any material agreement between the participant and us concerning the terms and conditions of the participant's employment.

Plan Amendment or Termination. Subject to the terms of the 2005 Plan, our board of directors generally has the authority to amend, suspend or terminate the 2005 Plan at any time; *provided*, that no such action will impair the existing rights of any outstanding stock awards without the affected participant's written consent. As described above, the 2005 Plan will be terminated upon the IPO Date and no new stock awards will be granted under the 2005 Plan on or after such date.

Amended and Restated 1999 Stock Plan

Our Amended and Restated 1999 Stock Plan, or the 1999 Plan, was adopted by our board of directors on February 12, 1999 and approved by our stockholders in January 2000. The 1999 Plan was last amended on November 15, 2002. The 1999 Plan terminated on the date the 2005 Plan became effective. No new awards may be granted under the 1999 Plan; however, any outstanding awards granted under the 1999 Plan remain outstanding and subject to the terms of the 1999 Plan and award agreements thereunder, except that in the event of a corporate transaction, the provisions of the 2005 Plan (as described above) governing the treatment of awards in the event of a corporate transaction will govern all outstanding awards under the 1999 Plan.

The 1999 Plan provided for the discretionary grant of incentive stock options, nonstatutory options, and stock awards to our eligible employees, directors and consultants. The number of shares of our common stock subject to outstanding awards under the 1999 Plan is 12,143 shares.

Our board of directors or a duly authorized committee of our board of directors administers the 1999 Plan and the awards granted under the 1999 Plan. In the event of certain corporate transactions, the treatment of outstanding awards under the 1999 Plan will be governed by the corporate transaction provisions set forth in the 2005 Plan, and summarized above.

Subject to the terms of the 1999 Plan, our board of directors generally may amend the terms of awards granted under the 1999 Plan at any time, except that no amendment may adversely affect outstanding stock awards without the written consent of the affected participants.

2014 Employee Stock Purchase Plan

Our board of directors adopted, and we expect that our stockholders will approve, our 2014 Employee Stock Purchase Plan, or the ESPP, prior to this offering. The ESPP will become effective upon the IPO Date. The ESPP is intended to qualify as an "employee stock purchase plan" under Section 423 of the Internal Revenue Code.

Authorized Shares. The maximum aggregate number of shares of our common stock that may be issued under our ESPP is 1,600,000 shares. Additionally, the number of shares of our common stock reserved for issuance under our ESPP will increase automatically each year, beginning on January 1, 2016 and continuing through and including January 1, 2024, by the lesser of (i) 1.0% of the total number of shares of our common stock outstanding on December 31 of the preceding calendar year; and (ii) 1,200,000 shares of common stock. Our board of directors may act prior to the first day of any calendar year to provide that there will be no January 1 increase or that the increase will be for a lesser number of shares than would otherwise occur. Shares subject to purchase rights granted under our ESPP that terminate without having been exercised in full will not reduce the number of shares available for issuance under our ESPP.

Administration. Our board of directors will administer our ESPP. Our board of directors may delegate authority to administer our ESPP to our compensation committee. Our ESPP is implemented through a series of offerings under which eligible employees are granted purchase rights to purchase shares of our common stock on specified dates during such offerings. Under the ESPP, we may specify offerings with durations of not more than 27 months, and may specify shorter purchase periods within each offering. Each offering will have one or more purchase dates on which shares of our common stock will be purchased for employees participating in the offering. An offering under the ESPP may be terminated under certain circumstances.

Payroll Deductions. Generally, all regular employees, including executive officers, employed by us or by any of our designated affiliates, may participate in the ESPP and may contribute, normally through payroll deductions, up to 15% of their earnings (as defined by the board of directors in each offering) for the purchase of our common stock under the ESPP. Common stock will be purchased for the accounts of employees participating in the ESPP at a price per share not less than the lower of (a) 85% of the fair market value of a share of our common stock on the first date of an offering; and (b) 85% of the fair market value of a share of our common stock on the date of purchase. For the initial offering, which we expect will commence upon the execution and delivery of the underwriting agreement relating to this offering, the fair market value on the first day of the initial offering will be the price at which shares are first sold to the public.

Limitations. Our employees, including executive officers, may have to satisfy one or more of the following service requirements before participating in our ESPP, as determined by the administrator: (i) customary employment for more than 20 hours per week and more than five months per calendar year, or (ii) continuous employment for a minimum period of time, not to exceed two years. An employee may not be granted rights to purchase stock under our ESPP if such employee (a) immediately after the grant would own stock possessing 5% or more of the total combined voting power or value of our common stock, or (b) holds rights to purchase stock under our ESPP that would accrue at a rate that exceeds $25,000 worth of our stock for each calendar year that the rights remain outstanding.

Changes in Capital Structure. In the event that there occurs a change in our capital structure through such actions as a stock split, merger, consolidation, reorganization, recapitalization, reincorporation, stock dividend, dividend in property other than cash, large nonrecurring cash dividend, liquidating dividend, combination of shares, exchange of shares, change in corporate structure or similar transaction, the board of directors will make appropriate adjustments to (1) the number of shares reserved under the ESPP, (2) the maximum number of shares by which the share reserve may increase automatically each year, (3) the number of shares and purchase price of all outstanding purchase rights, and (4) the number of shares that are subject to purchase limits under ongoing offerings.

Corporate Transactions. In the event of a specified corporate transaction, such as a merger or sale of all or substantially all of our assets, a successor corporation may assume, continue or substitute each outstanding purchase right. If the successor corporation does not assume, continue or substitute for the outstanding purchase rights, the offering in progress will be shortened and the participants' accumulated contributions will be used to purchase shares within 10 business days prior to the effective date of the corporate transaction.

Amendments; Termination. Our board of directors has the authority to amend, suspend or terminate our ESPP, at any time and for any reason; provided, that except in certain circumstances such amendment or termination may not materially impair outstanding purchase rights without the holder's consent. Our ESPP will remain in effect until terminated by the administrator in accordance with the terms of the ESPP.

401(k) Plan

We maintain a tax-qualified retirement plan that provides eligible U.S. employees with an opportunity to save for retirement on a tax advantaged basis. Eligible employees may defer eligible compensation subject to applicable annual Internal Revenue Code limits. The 401(k) plan permits participants to make both pre-tax and certain after-tax (Roth) deferral contributions. These contributions are allocated to each participant's individual account and are then invested in selected investment alternatives according to the participant's directions. Employees are immediately and fully vested in their contributions. Commencing in 2014, active contributing participants in the 401(k) plan are eligible to receive employer matching contributions of up to 2%, 4% or 6% of salary, depending upon a participant's number of years of service. Employer matching contributions are subject to applicable annual Internal Revenue Code limits and are fully vested when made. The 401(k) plan is intended to be qualified under Section 401(a) of the Internal Revenue Code with the 401(k) plan's related trust intended to be tax exempt under Section 501(a) of the Internal Revenue Code.

Pension Benefits

We do not maintain any pension benefit plans.

Nonqualified Deferred Compensation

We do not maintain any nonqualified deferred compensation plans.

Limitations on Liability and Indemnification Matters

Upon the completion of this offering, our amended and restated certificate of incorporation will contain provisions that limit the liability of our current and former directors for monetary damages to the fullest extent permitted by Delaware law. Delaware law provides that directors of a corporation will not be personally liable for monetary damages for any breach of fiduciary duties as directors, except liability for:

- any breach of the director's duty of loyalty to the corporation or its stockholders;
- any act or omission not in good faith or that involves intentional misconduct or a knowing violation of law;
- unlawful payments of dividends or unlawful stock repurchases or redemptions; or
- any transaction from which the director derived an improper personal benefit. Such limitation of liability does not apply to liabilities arising under federal securities laws and does not affect the availability of equitable remedies such as injunctive relief or rescission.

Our amended and restated certificate of incorporation and our amended and restated bylaws will provide that we are required to indemnify our directors and officers to the fullest extent permitted by Delaware law. Our amended and restated bylaws will also provide that, upon satisfaction of certain conditions, we shall advance expenses incurred by a director or officer in advance of the final disposition of any action or proceeding, and permit us to secure insurance on behalf of any officer, director, employee or other agent for any liability arising out of his or her actions in that capacity regardless of whether we would otherwise be permitted to indemnify him or her under the provisions of Delaware law. Our amended and restated certificate of incorporation and amended and restated bylaws will also provide our board of directors with discretion to indemnify our employees and other agents when determined appropriate by our board of directors. We have entered and expect to continue to enter into

agreements to indemnify our directors, executive officers and other employees as determined by our board of directors. With certain exceptions, these agreements provide for indemnification for related expenses including, among other things, attorneys' fees, judgments, fines and settlement amounts incurred by any of these individuals in any action or proceeding. We believe that these bylaw provisions and indemnification agreements are necessary to attract and retain qualified persons as directors and officers. We also maintain customary directors' and officers' liability insurance.

The limitation of liability and indemnification provisions in our amended and restated certificate of incorporation and amended and restated bylaws may discourage stockholders from bringing a lawsuit against our directors for breach of their fiduciary duty. They may also reduce the likelihood of derivative litigation against our directors and officers, even though an action, if successful, might benefit us and other stockholders. Further, a stockholder's investment may be adversely affected to the extent that we pay the costs of settlement and damage awards against directors and officers as required by these indemnification provisions. At present, there is no pending litigation or proceeding involving any of our directors, officers or employees for which indemnification is sought and we are not aware of any threatened litigation that may result in claims for indemnification.

Rule 10b5-1 Sales Plans

Our directors and executive officers may adopt written plans, known as Rule 10b5-1 plans, in which they will contract with a broker to buy or sell shares of our common stock on a periodic basis. Under a Rule 10b5-1 plan, a broker executes trades pursuant to parameters established by the director or officer when entering into the plan, without further direction from them. The director or officer may amend a Rule 10b5-1 plan in some circumstances and may terminate a plan at any time. Our directors and executive officers also may buy or sell additional shares outside of a Rule 10b5-1 plan when they are not in possession of material nonpublic information subject to compliance with the terms of our insider trading policy. Prior to 180 days after the date of this offering (subject to early termination), the sale of any shares under such plan would be subject to the lock-up agreement that the director or officer has entered into with the underwriters.

CERTAIN RELATIONSHIPS AND RELATED PARTY TRANSACTIONS

In addition to the director and executive compensation arrangements discussed above in "Management" and "Executive Compensation" and the registration rights described below in "Description of Capital Stock—Stockholder Registration Rights," below we describe transactions since January 1, 2011, to which we have been or will be a participant, in which the amount involved exceeded or will exceed $120,000, and in which any of our directors, executive officers or holders of more than 5% of any class of our voting stock, or any member of the immediate family of, or person sharing the household with, any of these individuals, had or will have a direct or indirect material interest.

Sale of Series A Preference Shares by FibroGen China Anemia Holdings, Ltd.

In July and December 2012 and February 2013, pursuant to a Share Purchase Agreement, our subsidiary, FibroGen China Anemia Holdings, Ltd., sold an aggregate of 6,758,000 Series A Preference Shares at a purchase price of $1.00 per share. The following table summarizes purchases of such shares by our directors, executive officers or holders of more than 5% of any class of our voting stock:

Stockholder	Series A Preference Shares	Aggregate purchase price
Stern Family Trust (1)	500,000	$ 500,000.00
Grama Ventures LLC (2)	450,000	$ 450,000.00

(1) Julian N. Stern is one of our directors and a trustee of Stern Family Trust.
(2) Roberto Pedro Rosenkranz, Ph.D., M.B.A. is one of our directors and President of Grama Ventures LLC.

On February 16, 2012, our Chief Executive Officer and Chairman of the Board, Thomas B. Neff, repaid a June 2002 stockholder note that we issued in connection with our previous policy of allowing officers to exercise options to purchase our common stock using a promissory note. The note related to the exercise of Mr. Neff's outstanding stock options prior to 2002 and was repaid in accordance with its terms.

Investor Rights Agreements

We have entered into investor rights agreements with certain of our investors in connection with certain of our preferred stock financings. We have also entered into investor rights agreements with certain of our warrant holders. These investors and warrant holders are entitled to rights with respect to the registration of their shares following the completion of this offering. For a more detailed description of these registration rights, see the section of the prospectus captioned "Description of Capital Stock—Stockholder Registration Rights."

Astellas Collaboration

Astellas is an equity investor in FibroGen, Inc. and considered a related party. During the years ended December 31, 2012 and 2013 and the nine months ended September 30, 2013 and 2014, we recorded revenue related to collaboration agreements with Astellas of $65.1 million, $25.7 million, $21.6 million and $12.5 million, respectively. During the years ended December 31, 2012 and 2013 and the nine months ended September 30, 2013 and 2014, we recorded expense related to collaboration agreements with Astellas of $0.3 million, $4.0 million, $1.9 million and $7.1 million, respectively. For a more detailed description of our collaboration agreements with Astellas, see "Business—Collaborations."

Employment Offer Letters

We have entered into offer letter agreements with our executive officers. For more information regarding these agreements, see the section of the prospectus captioned "Executive Compensation—Offer Letter Agreements."

Indemnification Agreements

Our amended and restated certificate of incorporation, which will be effective upon the completion of this offering, will contain provisions limiting the liability of directors, and our amended and restated bylaws will provide that we will indemnify each of our directors and officers to the fullest extent permitted under Delaware law. Our amended and restated certificate of incorporation and amended and restated bylaws will also provide our board of directors with discretion to indemnify our employees and other agents when determined appropriate by our board of directors. In addition, we have entered into an indemnification agreement with each of our directors and our executive officers. For more information regarding these agreements, see the section of the prospectus captioned “Executive Compensation—Limitations on Liability and Indemnification Matters.”

Policy on Future Related Party Transactions

All future transactions between us and our officers, directors, principal stockholders and their affiliates will be approved by the audit committee, or a similar committee consisting of entirely independent directors, according to the terms of our Code of Business Conduct.

We believe that we have executed all the transactions described above on terms no less favorable to us than we could have obtained from unaffiliated third parties. It is our intention to ensure that all future transactions between us and our officers, directors and principal stockholders and their affiliates, are approved by the audit committee, or a similar committee consisting of entirely independent directors, according to the terms of our Code of Business Conduct, and are on terms no less favorable to us than those that we could obtain from unaffiliated third parties.

PRINCIPAL STOCKHOLDERS

The following table sets forth certain information with respect to the beneficial ownership of our common stock as of September 30, 2014, as adjusted to reflect the shares of common stock to be issued and sold in the offering and the concurrent private placement assuming no exercise of the underwriters' option to purchase additional shares from us in the offering, for:

- each of our named executive officers;
- each of our directors;
- all of our directors and executive officers as a group; and
- each person, or group of affiliated persons, known by us to beneficially own more than 5% of our common stock.

Beneficial ownership is determined in accordance with the rules of the SEC and generally includes any shares over which a person exercises sole or shared voting or investment power. Shares of common stock issuable under options or warrants that are exercisable within 60 days after September 30, 2014 are deemed beneficially owned and such shares are used in computing the percentage ownership of the person holding the options or warrants, but are not deemed outstanding for the purpose of computing the percentage ownership of any other person. The information contained in the following table is not necessarily indicative of beneficial ownership for any other purpose, and the inclusion of any shares in the table does not constitute an admission of beneficial ownership of those shares.

Unless otherwise indicated below, to our knowledge, all persons named in the table have sole voting and dispositive power with respect to their shares of common stock, except to the extent authority is shared by spouses under community property laws.

Our calculation of the percentage of beneficial ownership prior to this offering and the concurrent private placement is based on 47,428,995 shares of our common stock (including preferred stock on an as-converted basis) outstanding as of September 30, 2014. We have based our calculation of beneficial ownership after this offering and the concurrent private placement on 55,671,852 shares of our common stock outstanding immediately after the closing of this offering and the concurrent private placement (assuming no exercise of the underwriters' option to purchase additional shares of common stock in the offering).

Unless otherwise indicated below, the address of each beneficial owner listed in the table below is c/o FibroGen, Inc., 409 Illinois Street, San Francisco, CA 94158.

Name of Beneficial Owner	Number of Shares Beneficially Owned	Percentage of Shares Beneficially Owned	
		Before the Offering and the Concurrent Private Placement	After the Offering and the Concurrent Private Placement
5% Stockholders:			
Thomas B. Neff (1)	6,286,811	12.6	10.8%
Astellas Pharma Inc. 2-5-1 Nihonbashi-Honcho, Chuo-Ku, Tokyo 103-8411 Japan	4,968,367	10.5	8.9%
Directors and Named Executive Officers:			
Thomas B. Neff (1)	6,286,811	12.6	10.8%
K. Peony Yu (2)	185,001	*	*%
Frank H. Valone (3)	217,502	*	*%
Thomas F. Kearns Jr. (4)	412,536	*	*%
Kalevi Kurkijärvi, Ph.D. (5)	158,000	*	*%
Miguel Madero (6)	567,231	1.2	1.0%
Rory B. Riggs (7)	1,135,913	2.4	2.0%
Roberto Pedro Rosenkranz, Ph.D., M.B.A. (8)	60,040	*	*%
Jorma Routti, Ph.D. (9)	158,000	*	*%
James A. Schoeneck (2)	60,000	*	*%
Julian N. Stern (10)	272,244	*	*%
Toshinari Tamura (2)	78,000	*	*%
All executive officers and directors as a group (13 persons) (11)	9,908,377	19.4	16.7%

* Represents beneficial ownership of less than one percent (1%) of the outstanding common stock.

(1) Consists of (a) 3,773,162 shares held by Thomas B. Neff, (b) 145,070 shares held by the Thomas B. Neff Family Partnership, (c) 20,000 shares held by Mr. Neff's spouse and (d) 60,176 preferred shares on an as-converted basis held by BioGrowth Partners, LP. Also includes 2,288,403 shares issuable pursuant to stock options exercisable within 60 days of September 30, 2014.

(2) Represents shares issuable pursuant to stock options exercisable within 60 days of September 30, 2014.

(3) Includes 193,502 shares issuable pursuant to stock options exercisable within 60 days of September 30, 2014.

(4) Consists of (a) 6,000 shares held by Thomas F. Kearns, Jr., (b) 179,536 preferred shares on an as-converted basis held by Thomas F. Kearns, Jr., and 110,000 shares held by the Kearns Trust, of which Mr. Kearns is a trustee and has sole voting and dispositive power. Also includes 117,000 shares issuable pursuant to stock options exercisable within 60 days of September 30, 2014.

(5) Includes 114,000 shares issuable pursuant to stock options exercisable within 60 days of September 30, 2014.

(6) Consists of 20,600 shares held by Miguel Madero and an aggregate of 468,631 shares held in accounts for family members for which Mr. Madero maintains power of attorney to manage and control. Also includes 78,000 shares issuable pursuant to stock options exercisable within 60 days of September 30, 2014.

(7) Consists of (a) 420,200 shares held by Rory B. Riggs, (b) 90,000 preferred shares on an as-converted basis held by Rory B. Riggs, (c) 20,000 preferred shares on an as-converted basis held jointly by Rory B. Riggs and Robin Rhys and (d) 372,014 shares and 233,699 preferred shares on an as-converted basis held by New Ventures I, LLC. Mr. Riggs is Managing Member of New Ventures I, LLC and has voting and investment control with respect to the shares held by New Ventures I, LLC.

(8) Includes (a) 35,000 shares held by Roberto Pedro Rosenkranz and (b) 40 shares held by Mr. Rosenkranz's spouse as custodian for Mr. Rosenkranz's daughter. Also includes 25,000 shares issuable pursuant to stock options exercisable within 60 days of September 30, 2014.

(9) Includes 90,000 shares issuable pursuant to stock options exercisable within 60 days of September 30, 2014.

(10) Consists of (a) 107,904 shares held by Julian N. Stern, (b) 35,164 preferred shares on an as-converted basis held by Julian N. Stern and an aggregate of 12,176 shares held in various trusts for which Mr. Stern's spouse, Dorothy Stern, is the sole trustee and has sole voting and investment control. Also includes 117,000 shares issuable pursuant to stock options exercisable within 60 days of September 30, 2014.

(11) Consists of (a) 6,285,372 shares held by the directors and executive officers as of September 30, 2014 and (b) 3,623,005 shares issuable to our directors and officers pursuant to stock options exercisable within 60 days of September 30, 2014.

DESCRIPTION OF CAPITAL STOCK

The description below summarizes the material terms of our capital stock and provisions of our amended and restated certificate of incorporation and amended and restated bylaws that will be in effect upon completion of the offering.

General

Upon the completion of this offering, our authorized capital stock will consist of 350,000,000 shares, all with a par value of $0.01 per share, of which:

- 225,000,000 shares are designated as common stock; and
- 125,000,000 shares are designated as preferred stock.

The following information reflects the filing of our amended and restated certificate of incorporation and the conversion of all outstanding shares of our convertible preferred stock into shares of common stock upon the completion of this offering.

As of September 30, 2014, there were outstanding:

- 13,509,041 shares of common stock held by 565 stockholders, with no shares of common stock issued pursuant to early exercise of stock options or restricted stock issuances that are subject to repurchase.

Our shares of common stock are not redeemable and, following the completion of this offering, will not have preemptive rights.

Common Stock

Voting Rights

Each holder of our common stock is entitled to one vote for each share of common stock held on all matters submitted to a vote of stockholders, except as otherwise expressly provided in our amended and restated certificate of incorporation or required by applicable law. We have not provided for cumulative voting for the election of directors in our amended and restated certificate of incorporation.

Economic Rights

Dividends and Distributions. Subject to the prior rights of holders of all classes and series of stock at the time outstanding having prior rights as to dividends, the holders of common stock will be entitled to receive, when, as and if declared by our board of directors, out of any assets legally available therefor, such dividends as may be declared from time to time by our board of directors.

Liquidation Rights. In the event of our liquidation, dissolution or winding-up, upon the completion of the distributions required with respect to any series of preferred stock that may then be outstanding, the remaining assets legally available for distribution to stockholders shall be distributed ratably among the holders of common stock and any participating preferred stock outstanding at that time.

Holders of common stock have no preemptive or conversion rights or other subscription rights. There are no redemption or sinking fund provisions applicable to the common stock.

Preferred Stock

As of September 30, 2014, there were 33,919,954 shares of preferred stock on an as-converted basis of common stock immediately prior to the completion of this offering.

Upon the completion of this offering, our board of directors may, without further action by our stockholders, fix the rights, preferences, privileges and restrictions of up to an aggregate of 125,000,000 shares of preferred stock in one or more series and authorize their issuance. These rights, preferences and privileges could include dividend rights, conversion rights, voting rights, terms of redemption, liquidation preferences, sinking fund terms and the number of shares constituting any series or the designation of such series, any or all of which may be greater than the rights of our common stock. The issuance of our preferred stock could adversely affect the voting power of holders of our common stock and the likelihood that such holders will receive dividend payments and payments upon liquidation, which could decrease the market price of our common stock. In addition, the issuance of preferred stock could have the effect of delaying, deferring or preventing a change of control or other corporate action. Upon the completion of this offering, no shares of preferred stock will be outstanding, and we have no present plan to issue any shares of preferred stock.

Options

As of September 30, 2014, under both our 1999 and 2005 Plans, options to purchase an aggregate of 12,970,404 shares of common stock, having a weighted-average exercise price of $5.56 per share were outstanding and 7,606,104 additional shares of common stock were available for future grant. For additional information regarding the terms of these plans, see the section of this prospectus captioned “Executive Compensation—Equity Incentive Plans.”

Warrants

As of September 30, 2014, we had outstanding warrants to acquire 173,116 shares of common stock having a weighted-average exercise price of $7.58 per share. Certain of these warrants are exercisable until the earlier of (1) the date one year after the effectiveness of this offering or (2) the effective date of our merger with or into, our consolidation with, or our sale of all or substantially all of our assets to another entity such that our stockholders do not retain the majority of the voting capital of the resulting entity. Certain of these warrants are exercisable until the earlier of (1) the fifth anniversary of the effective date of this registration statement or (2) the effective date of our merger with or into, our consolidation with, or our sale of all or substantially all of our assets to another entity such that our stockholders do not retain the majority of the voting capital of the resulting entity.

Stockholder Registration Rights

Under our investor rights agreements, after the completion of this offering, certain holders of our common stock, including certain holders of 5% of our capital stock and entities affiliated with certain of our directors, will be entitled to certain rights with respect to registration of such shares under the Securities Act, in each case described below. These shares are referred to as registrable securities. Registration pursuant to the exercise of the registration rights described below would enable the holders to trade these shares without restriction under the Securities Act when the applicable registration statement is declared effective.

Registration Rights—Early Rights Agreements

Certain registration rights are provided for under the terms of our Investor Rights Agreement dated as of December 1995, entered into with certain of our investors in connection with our Series B Preferred Stock financing, our Investor Rights Agreement dated as of February 20, 1998, entered into with certain of our investors in connection with our Series C Preferred Stock financing and our Investor Rights Agreements dated as of June 3, 1999 and February 8, 2000, entered into with certain of our warrant holders, collectively our Early Rights Agreements. We will pay the registration expenses, other than underwriting fees, discounts or commissions and any out-of-pocket expenses of the selling holders, of the shares registered pursuant to the piggyback registration described below.

Piggyback Registration Rights

If we propose to register for offer and sale any of our securities under the Securities Act in another offering, either for our own account or for the account of other security holders, the holders of the registrable securities subject to our Early Rights Agreements will be entitled to certain "piggyback" registration rights allowing them to include their shares in such registration, subject to certain marketing and other limitations. As a result, whenever we propose to file a registration statement under the Securities Act, including a registration statement on Form S-3 (other than with respect to this registration statement or a registration statement on Forms S-4 or S-8), the holders of these shares are entitled to notice of the registration and have the right, subject to certain limitations that the underwriters may impose on the number of shares included in the registration, to include their shares in the registration.

Registration Rights—2000 and 2004 Rights Agreements

Certain provisions relating to registration rights described below are provided for under the terms of our Investor Rights Agreement dated as of May 12, 2000, as amended in December 2004 and September 2005, or our 2000 Rights Agreement, entered into in connection with our Series E Preferred Stock financing and our Investor Rights Agreement dated as of December 22, 2004, as amended in September 2005, or our 2004 Rights Agreement, entered into in connection with our Series F Preferred Stock financing. Under the terms of these agreements, these registration rights are not exercisable five years after the effective date of our initial public offering, or, with respect to any particular holder, at such earlier time that all registrable shares held by such holder (and any affiliate of the holder with whom such holder must aggregate sales under Rule 144 of the Securities Act) can be sold under Rule 144 of the Securities Act. We would pay the registration expenses, other than underwriting discounts and commissions and the fees and disbursements of counsel for the selling holders, of the shares registered pursuant to the demand, piggyback and Form S-3 registrations described below.

Demand Registration Rights

Our 2000 and 2004 Rights Agreements contain provisions that would entitle holders of registrable securities to certain demand registration rights. At any time 180 days following the effective date of this registration statement, the holders of at least 50% of these securities may request that we register all or a portion of their shares, subject to certain specified exceptions. If the holders requesting registration intend to distribute their shares by means of an underwriting, the underwriters of such offering will have the right to limit the number of shares to be underwritten for reasons related to the marketing of the shares. We would not be required to effect more than two demand registrations pursuant to each of our 2000 Rights Agreement and our 2004 Rights Agreement, not including any registration in which more than 50% of the registrable securities that holders request to be registered are excluded from such registration due to marketing limitations. Depending on certain conditions, we may defer such registration for up to 90 days once in any 12-month period.

Piggyback Registration Rights

Our 2000 and 2004 Rights Agreements contain provisions that would entitle holders of our registrable securities to include their shares of registrable securities in this offering, subject to certain marketing and other limitations. If we propose to register for offer and sale any of our securities under the Securities Act in another offering, either for our own account or for the account of other security holders, the holders of these shares would be entitled to certain "piggyback" registration rights allowing them to include their shares in such registration, subject to certain marketing and other limitations. As a result, whenever we propose to file a registration statement under the Securities Act, including a registration statement on Form S-3 as discussed below (other than with respect to a registration relating solely to the sale of securities to participants in our stock plans, a registration on any form (including Forms S-4 or S-8) that does not include substantially the same information as would be required to be included in a registration statement covering the sale of the registrable shares, a registration statement related to a corporate reorganization or other transaction under Rule 145 of the Securities Act, or a registration statement related to stock issued upon conversion of debt securities), the holders of these

shares would be entitled to notice of the registration and have the right, subject to certain limitations that the underwriters may impose on the number of shares included in the registration, to include their shares in the registration.

Form S-3 Registration Rights

Our 2000 and 2004 Rights Agreements contain provisions that would entitle the holders of the registrable securities subject to will be entitled to certain Form S-3 registration rights. Any holder of these shares would make a request that we register for offer and sale their shares on Form S-3 if we are qualified to file a registration statement on Form S-3, subject to certain specified exceptions. Such request for registration on Form S-3 must cover securities the aggregate offering price of which, before payment of the underwriting discounts and commissions, equals or exceeds $2,000,000. We would not be required to effect more than two registrations on Form S-3 pursuant to each of our 2000 Rights Agreement and our 2004 Rights Agreement, and no more than one such registration under each agreement within any 6-month period. Depending on certain conditions, we may defer such registration for up to 90 days once in any 12-month period.

Anti-Takeover Effects of Delaware Law and Our Amended and Restated Certificate of Incorporation and Amended and Restated Bylaws

Our amended and restated certificate of incorporation and amended and restated bylaws to be in effect upon the completion of this offering contain certain provisions that could have the effect of delaying, deferring or discouraging another party from acquiring control of us. These provisions and certain provisions of Delaware law, which are summarized below, are expected to discourage coercive takeover practices and inadequate takeover bids. These provisions are also designed, in part, to encourage persons seeking to acquire control of us to negotiate first with our board of directors. We believe that the benefits of increased protection of our potential ability to negotiate more favorable terms with an unfriendly or unsolicited acquirer outweigh the disadvantages of discouraging a proposal to acquire us.

Section 203 of the Delaware General Corporation Law

We are subject to Section 203 of the Delaware General Corporation Law, which prohibits a Delaware corporation from engaging in any business combination with any interested stockholder for a period of three years after the date that such stockholder became an interested stockholder, with the following exceptions:

- before such date, the board of directors of the corporation approved either the business combination or the transaction that resulted in the stockholder becoming an interested stockholder;
- upon completion of the transaction that resulted in the stockholder becoming an interested stockholder, the interested stockholder owned at least 85% of the voting stock of the corporation outstanding at the time the transaction began, excluding for purposes of determining the voting stock outstanding (but not the outstanding voting stock owned by the interested stockholder) those shares owned (1) by persons who are directors and also officers and (2) employee stock plans in which employee participants do not have the right to determine confidentially whether shares held subject to the plan will be tendered in a tender or exchange offer; or
- on or after such date, the business combination is approved by the board of directors and authorized at an annual or special meeting of the stockholders, and not by written consent, by the affirmative vote of at least 66 $^{2}/_{3}$% of the outstanding voting stock that is not owned by the interested stockholder.

In general, Section 203 defines a “business combination” to include the following:

- any merger or consolidation involving the corporation and the interested stockholder;
- any sale, transfer, pledge or other disposition of 10% or more of the assets of the corporation involving the interested stockholder;

- subject to certain exceptions, any transaction that results in the issuance or transfer by the corporation of any stock of the corporation to the interested stockholder;
- any transaction involving the corporation that has the effect of increasing the proportionate share of the stock of any class or series of the corporation beneficially owned by the interested stockholder; or
- the receipt by the interested stockholder of the benefit of any loans, advances, guarantees, pledges or other financial benefits by or through the corporation.

In general, Section 203 defines an "interested stockholder" as an entity or person who, together with the person's affiliates and associates, beneficially owns, or within three years prior to the time of determination of interested stockholder status did own, 15% or more of the outstanding voting stock of the corporation.

We expect the existence of this provision to have an anti-takeover effect with respect to transactions our board of directors does not approve in advance. We also anticipate that Section 203 may discourage attempts that might result in a premium over the market price for the shares of common stock held by stockholders.

Amended and Restated Certificate of Incorporation and Amended and Restated Bylaws to be in Effect upon the Completion of this Offering

Our amended and restated certificate of incorporation to be in effect upon the completion of this offering will provide for our board of directors to be divided into three classes with staggered three-year terms. Only one class of directors will be elected at each annual meeting of our stockholders, with the other classes continuing for the remainder of their respective three-year terms. Because our stockholders do not have cumulative voting rights, stockholders holding a majority of the shares of common stock outstanding will be able to elect all of our directors. Our amended and restated certificate of incorporation and our amended and restated bylaws to be effective upon the completion of this offering will also provide that directors may be removed by the stockholders only for cause upon the vote of 66 2/3% of all then-outstanding shares of capital stock entitled to vote generally at an election of directors. Furthermore, the authorized number of directors may be changed only by resolution of the board of directors, and vacancies and newly created directorships on the board of directors may, except as otherwise required by law or determined by the board, only be filled by a majority vote of the directors then serving on the board, even though less than a quorum.

Our amended and restated certificate of incorporation and amended and restated bylaws will also provide that all stockholder actions must be effected at a duly called meeting of stockholders and will eliminate the right of stockholders to act by written consent without a meeting. Our bylaws will also provide that only our chairman of the board, chief executive officer or the board of directors pursuant to a resolution adopted by a majority of the total number of authorized directors may call a special meeting of stockholders.

Our amended and restated bylaws will also provide that stockholders seeking to present proposals before a meeting of stockholders to nominate candidates for election as directors at a meeting of stockholders must provide timely advance notice in writing, and will specify requirements as to the form and content of a stockholder's notice. Our amended and restated certificate of incorporation and amended and restated bylaws will provide that the stockholders cannot amend many of the provisions described above except by a vote of 66 2/3% or more of our outstanding common stock.

The combination of these provisions will make it more difficult for our existing stockholders to replace our board of directors as well as for another party to obtain control of us by replacing our board of directors. Since our board of directors has the power to retain and discharge our officers, these provisions could also make it more difficult for existing stockholders or another party to effect a change in management. In addition, the authorization of undesignated preferred stock makes it possible for our board of directors to issue preferred stock with voting or other rights or preferences that could impede the success of any attempt to change our control.

These provisions are intended to enhance the likelihood of continued stability in the composition of our board of directors and its policies and to discourage coercive takeover practices and inadequate takeover bids. These provisions are also designed to reduce our vulnerability to hostile takeovers and to discourage certain tactics that may be used in proxy fights. However, such provisions could have the effect of discouraging others from making tender offers for our shares and may have the effect of delaying changes in our control or management. As a consequence, these provisions may also inhibit fluctuations in the market price of our stock that could result from actual or rumored takeover attempts. We believe that the benefits of these provisions, including increased protection of our potential ability to negotiate with the proponent of an unfriendly or unsolicited proposal to acquire or restructure our company, outweigh the disadvantages of discouraging takeover proposals, because negotiation of takeover proposals could result in an improvement of their terms.

Choice of Forum

Our amended and restated certificate of incorporation will provide that the Court of Chancery of the State of Delaware will be the exclusive forum for any derivative action or proceeding brought on our behalf; any action asserting a breach of fiduciary duty; any action asserting a claim against us arising pursuant to the Delaware General Corporation Law, our amended and restated certificate of incorporation or our amended and restated bylaws; or any action asserting a claim against us that is governed by the internal affairs doctrine.

Listing

We intend to list our common stock on the NASDAQ Global Select Market under the symbol “FGEN”.

Transfer Agent and Registrar

The transfer agent and registrar for our common stock is Wells Fargo Bank, National Association. The transfer agent’s address is 1110 Centre Pointe Curve, Suite 101, Mendota Heights, Minnesota 55120-4101.

SHARES ELIGIBLE FOR FUTURE SALE

Prior to this offering, no public market existed for our capital stock. Future sales of shares of our common stock in the public market after this offering, and the availability of shares for future sale, could adversely affect the market prices prevailing from time to time. As described below, only a limited number of shares will be available for sale shortly after this offering due to contractual and legal restrictions on resale. Nonetheless, sales of substantial amounts of our common stock, or the perception that these sales could occur, could adversely affect prevailing market prices for our common stock and could impair our future ability to raise equity capital.

Based on the number of shares outstanding on September 30, 2014, upon completion of this offering and the concurrent private placement, 56,803,964 shares of common stock will be outstanding, assuming the automatic conversion of all outstanding shares of our convertible preferred stock into shares of our common stock and the exchange of FibroGen Europe shares for shares of our common stock immediately prior to the completion of this offering and the concurrent private placement, the exercise of warrants to purchase 173,116 shares of our common stock and no exercise of the underwriters' option to purchase additional shares of common stock, no exercises of options outstanding as of September 30, 2014. All of the shares sold in this offering, plus any shares sold upon exercise of the underwriters' option to purchase additional shares from us in the offering, will be freely tradable without restrictions or further registration under the Securities Act, except for any shares sold to our "affiliates," as that term is defined under Rule 144 under the Securities Act.

The remaining shares of common stock will be deemed "restricted securities" as defined in Rule 144 under the Securities Act. These restricted securities may be sold in the public market only if registered or if they qualify for an exemption from registration under Rule 144 or Rule 701 under the Securities Act, which rules are summarized below.

Subject to the lock-up agreements, market stand off provisions and other transfer restrictions described below and the provisions of Rule 144 and 701 under the Securities Act, these restricted securities will be available for sale in the public market as follows:

Date	Approximate Number of Shares
On the date of this prospectus	805,106
Between 90 and 180 days after the date of this prospectus	457,353
At various times beginning 181 days after the date of this prospectus	48,441,505

In addition, of the 12,970,404 shares of our common stock that were subject to options outstanding as of September 30, 2014, options to purchase 10,478,926 shares of common stock were vested as of September 30, 2014 and will be eligible for sale 180 days following the effective date of this offering, as described in "Underwriting."

Rule 144

In general, under Rule 144, as currently in effect, a person who has beneficially owned restricted shares of our common stock for at least six months, including the holding period of any prior owner other than our affiliates, would be entitled to sell their securities provided that (1) such person is not deemed to have been one of our affiliates at the time of, or at any time during the 90 days preceding, a sale, (2) we have been subject to the Exchange Act periodic reporting requirements for at least 90 days before the sale, and (3) we are current in our Exchange Act reporting at the time of sale. If such a person has beneficially owned the shares proposed to be sold for at least one year, including the holding period of any prior owner other than our affiliates, then such person is entitled to sell those shares without complying with any of the requirements of Rule 144.

In general, under Rule 144, as currently in effect, persons who have beneficially owned restricted shares of our common stock for at least six months, but who are our affiliates at the time of, or any time during the 90 days

preceding, a sale, would be subject to additional restrictions, by which such person would be entitled to sell within any three-month period only a number of securities that does not exceed the greater of either of the following:

- 1% of the number of shares of our common stock then outstanding, which will equal approximately 556,719 shares immediately after the completion of this offering and the concurrent private placement based on the number of common shares outstanding as of September 30, 2014; and
- the average weekly trading volume of our common stock on the NASDAQ Global Select Market during the four calendar weeks preceding the filing of a notice on Form 144 with respect to the sale.

Such sales by affiliates must also comply with the manner of sale, current public information and notice provisions of Rule 144.

Rule 701

In general, under Rule 701 a person who purchased shares of our common stock pursuant to a written compensatory plan or contract and who is not deemed to have been one of our affiliates during the immediately preceding 90 days may sell these shares in reliance upon Rule 144, but without being required to comply with the holding period or public information requirements of Rule 144. Rule 701 also permits affiliates to sell their Rule 701 shares under Rule 144 without complying with the holding period requirements of Rule 144. All holders of Rule 701 shares, however, are required to wait until 90 days after the date of this prospectus before selling such shares pursuant to Rule 701. As of September 30, 2014, 10,026,407 shares of our outstanding common stock had been issued in reliance on Rule 701 as a result of exercises of stock options and issuance of restricted stock. However, substantially all Rule 701 shares are subject to lock-up agreements as described below and will become eligible for sale upon the expiration of the restrictions set forth in those agreements.

Form S-8 Registration Statements

As soon as practicable after the completion of this offering, we intend to file with the SEC one or more registration statements on Form S-8 under the Securities Act to register the offer and sale of shares of our common stock that are issuable pursuant to our 1999 Plan, 2005 Plan and 2014 Plan. These registration statements will become effective immediately upon filing. Shares covered by these registration statements will then be eligible for sale in the public markets, subject to vesting restrictions, any applicable lock-up agreements described below and Rule 144 limitations applicable to affiliates.

Lock-Up Agreements

We and all of our directors and officers, as well as the other holders of substantially all shares of our common stock outstanding immediately prior to the completion of this offering, have agreed with the underwriters that, for a period of 180 days following the date of this prospectus, subject to certain exceptions, we and they will not, directly or indirectly, offer, sell, contract to sell, pledge, grant any option to purchase, make any short sale, or otherwise dispose of or hedge any of our shares of common stock, any options or warrants to purchase any shares of our common stock, or any securities convertible into, or exchangeable for or that represent the right to receive shares of our common stock. Goldman, Sachs & Co., Citigroup Global Markets Inc. and Leerink Partners LLC may, in their sole discretion, at any time without prior notice, release all or any portion of the shares from the restrictions in any such agreement.

In addition to the restrictions contained in the lock-up agreements described above, we have entered into agreements with certain security holders, including the investor rights agreement and our standard form of option agreement under our 2005 Plan, that contain market stand-off provisions imposing restrictions on the ability of such security holders to offer, sell or transfer our equity securities for a period of 180 days following the date of

this prospectus. We have also entered into agreements with certain security holders, including our standard form of option agreements under our 1994 Plan and 1999 Plan, that contain market stand-off provisions imposing restrictions on the ability of such security holders to offer, sell or transfer our equity securities for a period of 90 days following the date of this prospectus.

AstraZeneca will agree to enter into a 180-day lock-up agreement in favor of the underwriters in this offering. In addition, AstraZeneca has also agreed, subject to specified exceptions, not to sell shares purchased by it in the concurrent private placement for a period exceeding 180 days following such purchase and to limitations on the volume of its sales of such shares thereafter.

Astellas has entered into a 180-day lock-up agreement in favor of the underwriters in this offering. In addition, Astellas has also agreed not to sell a portion of the shares held by it as of the initial public offering for periods exceeding 180 days after the initial public offering.

In addition, up to 5% of the shares sold in this offering may be locked up for 45 days following the date of this prospectus through a directed share program. Such 45-day lock up will only apply to purchasers of a minimum of 15,000 shares purchased through the directed share program.

Registration Rights

Upon the completion of this offering and assuming no exercise of the underwriters' option to purchase additional shares, the holders of 16,644,483 shares of our common stock, or their transferees, will be entitled to certain rights with respect to the registration of the offer and sale of their shares under the Securities Act. Registration of these shares under the Securities Act would result in the shares becoming freely tradable without restriction under the Securities Act immediately upon the effectiveness of the registration. See the section of this prospectus captioned "Description of Capital Stock—Stockholder Registration Rights" for additional information.

MATERIAL UNITED STATES FEDERAL INCOME TAX CONSEQUENCES TO NON-U.S. HOLDERS

The following is a discussion of the material U.S. federal income tax considerations applicable to non-U.S. holders (as defined below) with respect to their ownership and disposition of shares of our common stock issued pursuant to this offering, but does not purport to be a complete analysis of all potential tax effects. All prospective non-U.S. holders of our common stock should consult their own tax advisors with respect to the U.S. federal income tax consequences of the purchase, ownership and disposition of our common stock, as well as any consequences arising under the laws of any other taxing jurisdiction, including any state, local and non-U.S. tax consequences and any U.S. federal non-income tax consequences. In general, a non-U.S. holder means a beneficial owner of our common stock (other than a partnership or an entity or arrangement treated as a partnership for U.S. federal income tax purposes) that is not, for U.S. federal income tax purposes:

- an individual who is a citizen or resident of the United States;
- a corporation, or an entity treated as a corporation for U.S. federal income tax purposes, created or organized in the United States or under the laws of the United States or of any state thereof or the District of Columbia;
- an estate, the income of which is subject to U.S. federal income tax regardless of its source; or
- a trust if (1) a U.S. court can exercise primary supervision over the trust's administration and one or more U.S. persons have the authority to control all of the trust's substantial decisions or (2) the trust has a valid election in effect under applicable U.S. Treasury Regulations to be treated as a U.S. person.

This discussion is based on current provisions of the U.S. Internal Revenue Code of 1986, as amended, which we refer to as the Code, existing U.S. Treasury Regulations promulgated thereunder, published administrative rulings and judicial decisions, all as in effect as of the date of this prospectus. These laws are subject to change and to differing interpretation, possibly with retroactive effect. Any change or differing interpretation could alter the tax consequences to non-U.S. holders described in this prospectus.

This discussion is limited to non-U.S. holders that hold shares of our common stock as a capital asset within the meaning of Section 1221 of the Code (generally, for investment). This discussion does not address all aspects of U.S. federal income taxation that may be relevant to a particular non-U.S. holder in light of that non-U.S. holder's individual circumstances, nor does it address any aspects of U.S. estate or gift tax, or any state, local or non-U.S. taxes. This discussion also does not consider any specific facts or circumstances that may apply to a non-U.S. holder and does not address the special tax rules applicable to particular non-U.S. holders, such as holders that own, or are deemed to own, more than 5% of our capital stock (except to the extent specifically set forth below), corporations that accumulate earnings to avoid U.S. federal income tax, tax-exempt organizations, banks, financial institutions, insurance companies, brokers, dealers or traders in securities, commodities or currencies, tax-qualified retirement plans, holders subject to the alternative minimum tax or Medicare contribution tax, holders who hold or receive our common stock pursuant to the exercise of employee stock options or otherwise as compensation, holders holding our common stock as part of a hedge, straddle or other risk reduction strategy, conversion transaction or other integrated investment, holders deemed to sell our common stock under the constructive sale provisions of the Code, controlled foreign corporations, passive foreign investment companies, and U.S. expatriates and certain former citizens or long-term residents of the United States.

In addition, this discussion does not address the tax treatment of partnerships (or entities or arrangements that are treated as partnerships for U.S. federal income tax purposes) or persons that hold their common stock through such partnerships or such entities or arrangements. If a partnership, including any entity or arrangement treated as a partnership for U.S. federal income tax purposes, holds shares of our common stock, the U.S. federal income tax treatment of a partner in such partnership will generally depend upon the status of the partner, the activities of the partnership and certain determinations made at the partner level. Such partners and partnerships should consult their own tax advisors regarding the tax consequences of the purchase, ownership and disposition of our common stock.

There can be no assurance that the Internal Revenue Service, which we refer to as the IRS, will not challenge one or more of the tax consequences described herein, and we have not obtained, nor do we intend to obtain, a ruling with respect to the U.S. federal income tax consequences with respect to the matters discussed below.

Distributions on Our Common Stock

Distributions, if any, on our common stock generally will constitute dividends for U.S. federal income tax purposes to the extent paid from our current or accumulated earnings and profits, as determined under U.S. federal income tax principles. If a distribution exceeds our current and accumulated earnings and profits, the excess will be treated as a tax-free return of the non-U.S. holder's investment, up to such holder's adjusted tax basis in the common stock. Any remaining excess will be treated as capital gain from the sale or exchange of such common stock, subject to the tax treatment described below in "Gain on Sale, Exchange or Other Disposition of Our Common Stock."

Subject to the discussion below regarding backup withholding and foreign accounts, dividends paid to a non-U.S. holder will generally be subject to withholding of U.S. federal income tax at a 30% rate or such lower rate as may be specified by an applicable income tax treaty. A non-U.S. holder that is eligible for a reduced rate of U.S. withholding tax under an income tax treaty may obtain a refund or credit of any excess amounts withheld by timely filing an appropriate claim for refund with the IRS. A non-U.S. holder of our common stock who claims the benefit of an applicable income tax treaty generally will be required to provide a properly executed IRS Form W-8BEN or IRS Form W-8BEN-E (or successor form) and satisfy relevant certification and other requirements. Non-U.S. holders are urged to consult their tax advisors regarding their entitlement to benefits under a relevant income tax treaty.

Dividends that are treated as effectively connected with a trade or business conducted by a non-U.S. holder within the United States and, if an applicable income tax treaty so provides, that are attributable to a permanent establishment or a fixed base maintained by the non-U.S. holder within the United States, are generally exempt from the 30% withholding tax if the non-U.S. holder satisfies applicable certification and disclosure requirements. To claim the exemption, the non-U.S. holder must furnish to us or our paying agent a valid IRS Form W-8ECI (or applicable successor form), certifying that the dividends are effectively connected with the non-U.S. holder's conduct of a trade or business within the United States. However, such U.S. effectively connected income, net of specified deductions and credits, is taxed at the same graduated U.S. federal income tax rates applicable to U.S. persons (as defined in the Code), unless a specific treaty exemption applies. Any U.S. effectively connected income received by a non-U.S. holder that is a corporation may also, under certain circumstances, be subject to an additional "branch profits tax" at a 30% rate or such lower rate as may be specified by an applicable income tax treaty.

Gain on Sale, Exchange or Other Disposition of Our Common Stock

Subject to the discussion below regarding backup withholding and foreign accounts, in general, a non-U.S. holder will not be subject to any U.S. federal income tax on any gain realized upon such holder's sale, exchange or other disposition of shares of our common stock unless:

- the gain is effectively connected with a U.S. trade or business of the non-U.S. holder and, if an applicable income tax treaty so provides, is attributable to a permanent establishment or a fixed base maintained in the United States by such non-U.S. holder, in which case the non-U.S. holder generally will be taxed at the graduated U.S. federal income tax rates applicable to U.S. persons (as defined in the Code) and, if the non-U.S. holder is a foreign corporation, the branch profits tax described above in "Distributions on Our Common Stock" may also apply;
- the non-U.S. holder is a nonresident alien individual who is present in the United States for 183 days or more in the taxable year of the disposition and certain other conditions are met, in which case the non-U.S. holder will be subject to a 30% tax (or such lower rate as may be specified by an applicable

income tax treaty) on the net gain derived from the disposition, which may be offset by U.S. source capital losses of the non-U.S. holder, if any (even though the individual is not considered a resident of the United States) provided the non-U.S. holder has timely filed U.S. federal income tax returns with respect to such losses; or

- our common stock constitutes a U.S. real property interest because we are, or have been, at any time during the five-year period preceding such disposition (or the non-U.S. holder's holding period, if shorter) a "U.S. real property holding corporation." Even if we are or become a U.S. real property holding corporation, provided that our common stock is regularly traded on an established securities market, our common stock will be treated as a U.S. real property interest only with respect to a non-U.S. holder that holds more than 5% of our outstanding common stock, directly or indirectly, actually or constructively, during the shorter of the 5-year period ending on the date of the disposition or the period that the non-U.S. holder held our common stock. In such case, such non-U.S. holder generally will be taxed on its net gain derived from the disposition at the graduated U.S. federal income tax rates applicable to U.S. persons (as defined in the Code). Generally, a corporation is a U.S. real property holding corporation only if the fair market value of its U.S. real property interests equals or exceeds 50% of the sum of the fair market value of its worldwide real property interests plus its other assets used or held for use in a trade or business. Although there can be no assurance, we do not believe that we are, or have been, a U.S. real property holding corporation, or that we are likely to become one in the future. No assurance can be provided that our common stock will be regularly traded on an established securities market for purposes of the rules described above.

Backup Withholding and Information Reporting

We must report annually to the IRS and to each non-U.S. holder the gross amount of the dividends on our common stock paid to such holder and the tax withheld, if any, with respect to such dividends. Non-U.S. holders will have to comply with specific certification procedures to establish that the holder is not a U.S. person (as defined in the Code) in order to avoid backup withholding at the applicable rate with respect to dividends on our common stock. U.S. backup withholding generally will not apply to a Non-U.S. holder who provides a properly executed IRS Form W-8BEN or IRS Form W-8BEN-E or otherwise establishes an exemption. Information reporting and backup withholding will generally apply to the proceeds of a disposition of our common stock by a non-U.S. holder effected by or through the U.S. office of any broker, U.S. or foreign, unless the holder certifies its status as a non-U.S. holder and satisfies certain other requirements, or otherwise establishes an exemption. Generally, information reporting and backup withholding will not apply to a payment of disposition proceeds to a non-U.S. holder where the transaction is effected outside the United States through a non-U.S. office of a broker. However, for information reporting purposes, dispositions effected through a non-U.S. office of a broker with substantial U.S. ownership or operations generally will be treated in a manner similar to dispositions effected through a U.S. office of a broker. Non-U.S. holders should consult their own tax advisors regarding the application of the information reporting and backup withholding rules to them. Copies of information returns may be made available to the tax authorities of the country in which the non-U.S. holder resides or is incorporated under the provisions of a specific treaty or agreement. Backup withholding is not an additional tax. Any amounts withheld under the backup withholding rules from a payment to a non-U.S. holder may be allowed as a credit against the non-U.S. holder's U.S. federal income tax liability, if any, and may entitle such holder to a refund, provided that the required information is timely furnished to the IRS.

Foreign Accounts

The Code generally imposes a U.S. federal withholding tax of 30% on dividends and the gross proceeds of a disposition of our common stock paid to a "foreign financial institution" (as specifically defined for this purpose), unless such institution enters into an agreement with the U.S. government to, among other things, withhold on certain payments and to collect and provide to the U.S. tax authorities substantial information regarding U.S. account holders of such institution (which may include certain equity and debt holders of such institution, as well as certain account holders that are foreign entities with U.S. owners). Foreign financial

institutions located in jurisdictions that have an intergovernmental agreement with the United States governing these withholding and reporting requirements may be subject to different rules. This U.S. federal withholding tax of 30% also applies to dividends and the gross proceeds of a disposition of our common stock paid to a non-financial foreign entity, unless such entity provides the withholding agent with either a certification that it does not have any substantial direct or indirect U.S. owners or provides information regarding substantial direct and indirect U.S. owners of the entity. The withholding tax described above will not apply if the foreign financial institution or non-financial foreign entity otherwise qualifies for an exemption from the rules. The withholding provisions described above will generally apply to dividends on our common stock, and will also generally apply with respect to gross proceeds of a sale or other disposition of our common stock on or after January 1, 2017. Under certain circumstances, a non-U.S. holder might be eligible for refunds or credits of such taxes. Non-U.S. holders are encouraged to consult with their own tax advisors regarding the possible implications of the legislation on their investment in our common stock.

EACH PROSPECTIVE INVESTOR SHOULD CONSULT ITS OWN TAX ADVISOR REGARDING THE TAX CONSEQUENCES OF PURCHASING, HOLDING AND DISPOSING OF OUR COMMON STOCK, INCLUDING THE CONSEQUENCES OF ANY PROPOSED CHANGE IN APPLICABLE LAW, AS WELL AS TAX CONSEQUENCES ARISING UNDER ANY STATE, LOCAL, NON-U.S. OR U.S. FEDERAL NON-INCOME TAX LAWS.

UNDERWRITING

We and the underwriters named below have entered into an underwriting agreement with respect to the shares being offered. Subject to certain conditions, each underwriter has severally agreed to purchase the number of shares indicated in the following table. Goldman, Sachs & Co., Citigroup Global Markets Inc. and Leerink Partners LLC are the representatives of the underwriters.

Underwriters	Number of Shares
Goldman, Sachs & Co.	
Citigroup Global Markets Inc.	
Leerink Partners LLC	
RBC Capital Markets, LLC	
Stifel, Nicolaus & Company, Incorporated	
William Blair & Company, L.L.C.	
Total	7,100,000

The underwriters are committed to take and pay for all of the shares being offered, if any are taken, other than the shares covered by the option described below unless and until this option is exercised.

The underwriters have an option to buy up to an additional 1,065,000 shares from us to cover sales by the underwriters of a greater number of shares than the total number set forth in the table above. They may exercise that option for 30 days. If any shares are purchased pursuant to this option, the underwriters will severally purchase shares in approximately the same proportion as set forth in the table above.

The following table shows the per share and total underwriting discounts and commissions to be paid to the underwriters by us. Such amounts are shown assuming both no exercise and full exercise of the underwriters' option to purchase 1,065,000 additional shares.

Paid by Us	No Exercise	Full Exercise
Per Share	$	$
Total	$	$

Shares sold by the underwriters to the public will initially be offered at the initial public offering price set forth on the cover of this prospectus. Any shares sold by the underwriters to securities dealers may be sold at a discount of up to $ per share from the initial public offering price. After the initial offering of the shares, the representatives may change the offering price and the other selling terms. The offering of the shares by the underwriters is subject to receipt and acceptance and subject to the underwriters' right to reject any order in whole or in part.

At our request, the underwriters have reserved up to 5% of the shares being offered by this prospectus for sale at the initial public offering price to certain individuals who are associated with us through a directed share program. None of our directors, executive officers or employees will participate in the directed share program. The number of shares available for sale to the general public will be reduced by the number of directed shares purchased by participants in the program. Each person buying more than a minimum number of shares through the directed share program will agree that, for a period of 45 days from the date of this prospectus, he or she will not, without the prior written consent of Goldman, Sachs & Co., Citigroup Global Markets Inc. and Leerink Partners LLC, dispose of or hedge any shares or any securities convertible into or exchangeable for our common stock with respect to shares purchased in the program. Goldman, Sachs & Co., Citigroup Global Markets Inc. and Leerink Partners LLC in their sole discretion may release any of the securities subject to these lock-up agreements at any time. Any directed shares not purchased will be offered by the underwriters to the general public on the same basis as all other shares offered. We have agreed to indemnify the underwriters against certain liabilities and expenses, including liabilities under the Securities Act, in connection with the sales of the directed shares.

We and our officers, directors, and holders of substantially all of our common stock have agreed with the underwriters, subject to certain exceptions, not to dispose of or hedge any of their common stock or securities convertible into or exchangeable for shares of common stock during the period from the date of this prospectus continuing through the date that is 180 days after the date of this prospectus, except with the prior written consent of Goldman, Sachs & Co., Citigroup Global Markets Inc. and Leerink Partners LLC. This agreement does not apply to any existing employee benefit plans. The foregoing restrictions do not apply to equity issuances by us in connection with any licensing, commercialization, joint venture, technology transfer or development collaboration agreement and commercial credit, equipment financing or commercial property lease transactions of up to 5% of the total number of shares of common stock issued and outstanding immediately following the consummation of this offering (provided that in each case the recipient agrees not to sell, dispose of, transfer or hedge the equity they receive for the balance of the lock-up period). See “Shares Eligible for Future Sale” for a discussion of certain transfer restrictions.

Prior to the offering, there has been no public market for the shares. The initial public offering price has been negotiated among us and the representatives. Among the factors to be considered in determining the initial public offering price of the shares, in addition to prevailing market conditions, will be our historical performance, estimates of our business potential and earnings prospects, an assessment of our management and the consideration of the above factors in relation to market valuation of companies in related businesses.

We intend to list our common stock on the NASDAQ Global Select Market under the symbol “FGEN”.

In connection with the offering, the underwriters may purchase and sell shares of common stock in the open market. These transactions may include short sales, stabilizing transactions and purchases to cover positions created by short sales. Short sales involve the sale by the underwriters of a greater number of shares than they are required to purchase in the offering, and a short position represents the amount of such sales that have not been covered by subsequent purchases. A “covered short position” is a short position that is not greater than the amount of additional shares for which the underwriters’ option described above may be exercised. The underwriters may cover any covered short position by either exercising their option to purchase additional shares or purchasing shares in the open market. In determining the source of shares to cover the covered short position, the underwriters will consider, among other things, the price of shares available for purchase in the open market as compared to the price at which they may purchase additional shares pursuant to the option described above. “Naked” short sales are any short sales that create a short position greater than the amount of additional shares for which the option described above may be exercised. The underwriters must cover any such naked short position by purchasing shares in the open market. A naked short position is more likely to be created if the underwriters are concerned that there may be downward pressure on the price of our common stock in the open market after pricing that could adversely affect investors who purchase in the offering. Stabilizing transactions consist of various bids for or purchases of common stock made by the underwriters in the open market prior to the completion of the offering.

The underwriters may also impose a penalty bid. This occurs when a particular underwriter repays to the underwriters a portion of the underwriting discount received by it because the representatives have repurchased shares sold by or for the account of such underwriter in stabilizing or short covering transactions.

Purchases to cover a short position and stabilizing transactions, as well as other purchases by the underwriters for their own accounts, may have the effect of preventing or retarding a decline in the market price of our common stock, and together with the imposition of the penalty bid, may stabilize, maintain or otherwise affect the market price of our common stock. As a result, the price of our common stock may be higher than the price that otherwise might exist in the open market. The underwriters are not required to engage in these activities and may end any of these activities at any time. These transactions may be effected on the NASDAQ Global Select Market, in the over-the-counter market or otherwise.

In relation to each Member State of the European Economic Area which has implemented the Prospectus Directive (each, a Relevant Member State), each underwriter has represented and agreed that with effect from

and including the date on which the Prospectus Directive is implemented in that Relevant Member State (the Relevant Implementation Date) it has not made and will not make an offer of shares to the public in that Relevant Member State prior to the publication of a prospectus in relation to the shares which has been approved by the competent authority in that Relevant Member State or, where appropriate, approved in another Relevant Member State and notified to the competent authority in that Relevant Member State, all in accordance with the Prospectus Directive, except that it may, with effect from and including the Relevant Implementation Date, make an offer of shares to the public in that Relevant Member State at any time:

(a) to any legal entity which is a qualified investor as defined in the Prospectus Directive;

(b) to fewer than 100 or, if the Relevant Member State has implemented the relevant provision of the 2010 PD Amending Directive, 150 natural or legal persons (other than qualified investors as defined in the Prospectus Directive), as permitted under the Prospectus Directive, subject to obtaining the prior consent of the relevant underwriter or underwriters nominated by the Issuer for any such offer; or

(c) in any other circumstances which do not require the publication by the Issuer of a prospectus pursuant to Article 3(2) of the Prospectus Directive;

provided that no such offer of shares shall require the Issuer or any underwriter to publish a prospectus pursuant to Article 3 of the Prospectus Directive or supplement a prospectus pursuant to Article 16 of the Prospectus Directive.

For the purposes of this provision, the expression an “offer of shares to the public” in relation to any shares in any Relevant Member State means the communication in any form and by any means of sufficient information on the terms of the offer and the shares to be offered so as to enable an investor to decide to purchase or subscribe the shares, as the same may be varied in that Relevant Member State by any measure implementing the Prospectus Directive in that Relevant Member State and the expression Prospectus Directive means Directive 2003/71/EC (and amendments thereto, including the 2010 PD Amending Directive, to the extent implemented in the Relevant Member State), and includes any relevant implementing measure in the Relevant Member State and the expression 2010 PD Amending Directive means Directive 2010/73/EU.

Each underwriter has represented and agreed that:

(a) it has only communicated or caused to be communicated and will only communicate or cause to be communicated an invitation or inducement to engage in investment activity (within the meaning of Section 21 of the Financial Services and Markets Act, or the FSMA) received by it in connection with the issue or sale of the shares in circumstances in which Section 21(1) of the FSMA does not apply to the Issuer; and

(b) it has complied and will comply with all applicable provisions of the FSMA with respect to anything done by it in relation to the shares in, from or otherwise involving the United Kingdom.

The shares may not be offered or sold by means of any document other than (i) in circumstances which do not constitute an offer to the public within the meaning of the Companies Ordinance (Cap.32, Laws of Hong Kong), or (ii) to “professional investors” within the meaning of the Securities and Futures Ordinance (Cap.571, Laws of Hong Kong) and any rules made thereunder, or (iii) in other circumstances which do not result in the document being a “prospectus” within the meaning of the Companies Ordinance (Cap.32, Laws of Hong Kong), and no advertisement, invitation or document relating to the shares may be issued or may be in the possession of any person for the purpose of issue (in each case whether in Hong Kong or elsewhere), which is directed at, or the contents of which are likely to be accessed or read by, the public in Hong Kong (except if permitted to do so under the laws of Hong Kong) other than with respect to shares which are or are intended to be disposed of only to persons outside Hong Kong or only to “professional investors” within the meaning of the Securities and Futures Ordinance (Cap. 571, Laws of Hong Kong) and any rules made thereunder.

This prospectus has not been registered as a prospectus with the Monetary Authority of Singapore. Accordingly, this prospectus and any other document or material in connection with the offer or sale, or invitation for

subscription or purchase, of the shares may not be circulated or distributed, nor may the shares be offered or sold, or be made the subject of an invitation for subscription or purchase, whether directly or indirectly, to persons in Singapore other than (i) to an institutional investor under Section 274 of the Securities and Futures Act, Chapter 289 of Singapore, or the SFA, (ii) to a relevant person, or any person pursuant to Section 275(1A), and in accordance with the conditions, specified in Section 275 of the SFA or (iii) otherwise pursuant to, and in accordance with the conditions of, any other applicable provision of the SFA.

Where the shares are subscribed or purchased under Section 275 by a relevant person which is: (a) a corporation (which is not an accredited investor) the sole business of which is to hold investments and the entire share capital of which is owned by one or more individuals, each of whom is an accredited investor; or (b) a trust (where the trustee is not an accredited investor) whose sole purpose is to hold investments and each beneficiary is an accredited investor, shares, debentures and units of shares and debentures of that corporation or the beneficiaries' rights and interest in that trust shall not be transferable for six months after that corporation or that trust has
acquired the shares under Section 275 except: (1) to an institutional investor under Section 274 of the SFA or to a relevant person, or any person pursuant to Section 275(1A), and in accordance with the conditions, specified in Section 275 of the SFA; (2) where no consideration is given for the transfer; or (3) by operation of law.

The securities have not been and will not be registered under the Financial Instruments and Exchange Law of Japan (the Financial Instruments and Exchange Law) and each underwriter has agreed that it will not offer or sell any securities, directly or indirectly, in Japan or to, or for the benefit of, any resident of Japan (which term as used herein means any person resident in Japan, including any corporation or other entity organized under the laws of Japan), or to others for re-offering or resale, directly or indirectly, in Japan or to a resident of Japan, except pursuant to an exemption from the registration requirements of, and otherwise in compliance with, the Financial Instruments and Exchange Law and any other applicable laws, regulations and ministerial guidelines of Japan.

The underwriters do not expect sales to discretionary accounts to exceed five percent of the total number of shares offered.

We estimate that our share of the total expenses of the offering, excluding underwriting discounts and commissions, will be approximately $3.8 million. We have also agreed to reimburse the underwriters for certain FINRA-related expenses incurred by them in connection with the offering in an amount not to exceed $30,000 as set forth in the underwriting agreement.

We have agreed to indemnify the several underwriters against certain liabilities, including liabilities under the Securities Act of 1933.

The underwriters and their respective affiliates are full service financial institutions engaged in various activities, which may include sales and trading, commercial and investment banking, advisory, investment management, investment research, principal investment, hedging, market making, brokerage and other financial and non-financial activities and services. Certain of the underwriters and their respective affiliates have provided, and may in the future provide, a variety of these services to the issuer and to persons and entities with relationships with the issuer, for which they received or will receive customary fees and expenses.

In the ordinary course of their various business activities, the underwriters and their respective affiliates, officers, directors and employees may purchase, sell or hold a broad array of investments and actively trade securities, derivatives, loans, commodities, currencies, credit default swaps and other financial instruments for their own account and for the accounts of their customers, and such investment and trading activities may involve or relate to assets, securities and/or instruments of the issuer (directly, as collateral securing other obligations or otherwise) and/or persons and entities with relationships with the issuer. The underwriters and their respective affiliates may also communicate independent investment recommendations, market color or trading ideas and/or publish or express independent research views in respect of such assets, securities or instruments and may at any time hold, or recommend to clients that they should acquire, long and/or short positions in such assets, securities and instruments.

As of September 30, 2014, Goldman, Sachs & Co., certain of its affiliates and certain investment funds managed by them collectively beneficially owned preferred stock convertible into an aggregate of 477,069 shares of our common stock.

CONCURRENT PRIVATE PLACEMENT

AstraZeneca, one of our collaboration partners, has agreed to purchase from us concurrently with the closing of this offering in a private placement shares of our common stock with an aggregate purchase price of $20 million at a price per share equal to the initial public offering price.

VALIDITY OF COMMON STOCK

The validity of the shares of common stock offered hereby will be passed upon for us by Cooley LLP, Palo Alto, California and for the underwriters by Sullivan & Cromwell LLP, Palo Alto, California.

EXPERTS

The consolidated financial statements as of December 31, 2012 and 2013 and for the years then ended included in this prospectus have been so included in reliance on the report of PricewaterhouseCoopers LLP, an independent registered public accounting firm, given on the authority of such firm as experts in auditing and accounting.

WHERE YOU CAN FIND MORE INFORMATION

We have filed with the SEC a registration statement on Form S-1 under the Securities Act with respect to the shares of our common stock offered under this prospectus. This prospectus, which constitutes a part of the registration statement, does not contain all of the information set forth in the registration statement and the exhibits. For further information about us and our common stock, you should refer to the registration statement and the exhibits and schedules filed with the registration statement. With respect to the statements contained in this prospectus regarding the contents of any agreement or any other document, in each instance, the statement is qualified in all respects by the complete text of the agreement or document, a copy of which has been filed as an exhibit to the registration statement.

Upon completion of this offering, we will be required to file annual, quarterly and current reports, proxy statements and other information with the SEC pursuant to the Exchange Act. You may read and copy this information at the SEC at its public reference facilities located at 100 F Street N.E., Room 1580, Washington, D.C. 20549, at prescribed rates. You may obtain information on the operation of the public reference rooms by calling the SEC at 1-800-SEC-0330. The SEC also maintains an Internet website that contains periodic reports, proxy statements and other information about issuers, like us, that file electronically with the SEC. The address of that site is www.sec.gov.

We intend to furnish our stockholders with annual reports containing audited financial statements and to file with the SEC quarterly reports containing unaudited interim financial data for the first three quarters of each fiscal year. We also maintain a website on the Internet at www.FibroGen.com. However, the information contained in or accessible through our website is not part of this prospectus or the registration statement of which this prospectus forms a part, and investors should not rely on such information in making a decision to purchase our common stock in this offering.

INDEX TO CONSOLIDATED FINANCIAL STATEMENTS

Report of Independent Registered Public Accounting Firm

To the Board of Directors and Stockholders of
FibroGen, Inc.:

In our opinion, the accompanying consolidated balance sheets and the related consolidated statements of operations and comprehensive loss, of convertible preferred stock, redeemable convertible preferred stock and stockholders' equity (deficit) and of cash flows present fairly, in all material respects, the financial position of FibroGen, Inc. and its subsidiaries (the "Company") at December 31, 2013 and 2012, and the results of their operations and their cash flows for the years then ended in conformity with accounting principles generally accepted in the United States of America. These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these financial statements based on our audits. We conducted our audits of these statements in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements, assessing the accounting principles used and significant estimates made by management, and evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

/s/ PricewaterhouseCoopers LLP

San Jose, California
June 11, 2014, except for the effects of the reverse stock split described in Note 1, as to which the date is November 10, 2014.

FibroGen, Inc.

Consolidated Balance Sheets
(in thousands, except share and per share data)

	December 31, 2012	December 31, 2013	September 30, 2014 (unaudited)	Pro forma Equity September 30, 2014 (See Note 2) (unaudited)
Assets				
Current assets:				
Cash and cash equivalents	$ 38,872	$ 76,332	$ 153,889	
Short-term investments	1,017	46,477	21,612	
Accounts receivable ($8,784, $6,012 and $4,183 from related party)	8,784	17,495	21,425	
Prepaid expenses and other current assets	4,130	3,339	2,902	
Total current assets	52,803	143,643	199,828	
Restricted cash	7,254	7,254	7,254	
Long-term investments	81,613	15,356	214	
Property and equipment, net	123,664	129,898	132,553	
Other assets	254	801	4,534	
Total assets	$ 265,588	$ 296,952	$ 344,383	
Liabilities, redeemable convertible preferred stock and total equity (deficit)				
Current liabilities:				
Accounts payable	$ 3,107	$ 1,066	$ 2,895	
Accrued liabilities ($1,121, $2,765 and $2,651 to related party)	16,480	29,559	40,091	
Deferred revenue	2,393	5,741	9,539	
Current portion of capital lease obligation	329	—	—	
Cease-use liability	966	710	355	
Current portion of lease financing obligations	403	403	403	
Total current liabilities	23,678	37,479	53,283	
Long-term portion of lease financing obligations	92,499	96,406	96,572	
Product development obligations (Note 6)	17,152	18,257	17,094	
Deferred rent	5,809	5,503	5,229	
Deferred revenue, net of current	3,371	30,908	61,947	
Cease-use liability, net of current	895	184	—	
Other long-term liabilities	—	612	609	
Total liabilities	143,404	189,349	234,734	
Commitments and Contingencies (Note 8)				
Series E and F redeemable convertible preferred stock (“Senior Preferred Stock”); par value of $0.01, 38,340,182 shares authorized, 38,340,182 shares issued and outstanding at December 31, 2012 and 2013, and September 30, 2014 (unaudited), and no shares authorized, issued or outstanding pro forma at September 30, 2014 (unaudited) (liquidation value: $173,690 at September 30, 2014)	168,436	168,436	168,436	—
Stockholders’ equity (deficit):				
Series A, B, C, D, G-1 and royalty acquisition convertible preferred stock (“Junior Preferred Stock”); par value of $0.01, 86,659,818 shares authorized, 46,460,057 shares issued and outstanding at December 31, 2012 and 2013, and September 30, 2014 (unaudited), and no shares authorized, issued or outstanding pro forma at September 30, 2014 (unaudited) (liquidation value: $138,060 at September 30, 2014)	136,313	136,313	136,313	—
Common stock; par value of $0.01, 225,000,000 shares authorized, 13,167,138, 13,201,264, and 13,509,041 shares issued and outstanding at December 31, 2012 and 2013, and September 30, 2014 (unaudited), respectively, and 47,428,995 shares outstanding pro forma at September 30, 2014 (unaudited)	132	132	135	474
Additional paid-in capital	37,606	41,134	51,790	356,200
Accumulated other comprehensive loss	(167)	(3,508)	(3,177)	(3,177)
Accumulated deficit	(247,836)	(262,779)	(271,723)	(271,723)
Total stockholders’ equity (deficit)	(73,952)	(88,708)	(86,662)	81,774
Non-controlling interests	27,700	27,875	27,875	27,875
Total equity (deficit)	(46,252)	(60,833)	(58,787)	109,649
Total liabilities, redeemable convertible preferred stock and equity	$ 265,588	$ 296,952	$ 344,383	

The accompanying notes are an integral part of these Consolidated Financial Statements.

FibroGen, Inc.

Consolidated Statements of Operations
(in thousands, except per share data)

	Years ended December 31,		Nine Months ended September 30,	
	2012	2013	2013	2014
			(unaudited)	
Revenue:				
License and milestone revenue (includes $62,845, $22,326, $19,043 and $9,966 from related party)	$ 62,845	$ 94,961	$86,035	$106,175
Collaboration services and other revenue (includes $2,275, $3,335, $2,520 and $2,507 from related party)	3,088	7,209	3,745	15,321
Total revenue	65,933	102,170	89,780	121,496
Operating expenses:				
Research and development	74,222	85,710	56,276	99,536
General and administrative	18,934	24,409	16,498	24,088
Total operating expenses	93,156	110,119	72,774	123,624
Income (loss) from operations	(27,223)	(7,949)	17,006	(2,128)
Interest and other, net:				
Interest expense	(10,026)	(10,702)	(7,999)	(8,174)
Interest income	4,397	3,552	2,709	1,364
Other income (expense), net	181	156	114	(6)
Total interest and other, net	(5,448)	(6,994)	(5,176)	(6,816)
Income (loss) before income taxes	(32,671)	(14,943)	11,830	(8,944)
Benefit from income taxes	100	—	—	—
Net income (loss)	$ (32,571)	$ (14,943)	$11,830	$ (8,944)
Net income (loss) per share basic	$ (2.48)	$ (1.13)	$ 0.04	$ (0.67)
Net income (loss) per share diluted	$ (2.48)	$ (1.13)	$ 0.03	$ (0.67)
Weighted-average number of common shares used in net income (loss) per share—basic	13,128	13,186	13,181	13,355
Weighted-average number of common shares used in net income (loss) per share—diluted	13,128	13,186	19,919	13,355
Pro forma net loss per share—basic (unaudited)		$ (0.32)		$ (0.19)
Pro forma net loss per share—diluted (unaudited)		$ (0.32)		$ (0.19)
Pro forma weighted-average number of common shares used in net loss per share—basic (unaudited)		47,106		47,275
Pro forma weighted-average number of common shares used in net loss per share—diluted (unaudited)		47,106		47,275

The accompanying notes are an integral part of these Consolidated Financial Statements.

FibroGen, Inc.

Consolidated Statements of Comprehensive Income (Loss)
(in thousands)

	Years ended December 31,		Nine Months ended September 30,	
	2012	2013	2013	2014
			(unaudited)	
Net income (loss)	$ (32,571)	$ (14,943)	$11,830	$(8,944)
Other comprehensive income (loss):				
Foreign currency translation adjustments	(400)	(665)	(358)	1,383
Available-for-sale investments:				
Unrealized gain (loss) on investments, net of tax effect	643	(1,936)	(1,705)	(1,052)
Reclassification adjustments for realized gains (losses) included in net income (loss), net of tax effect	(96)	(740)	(292)	—
Net change in unrealized gain (loss) on available-for-sale investments	547	(2,676)	(1,997)	(1,052)
Other comprehensive income (loss), net of taxes	147	(3,341)	(2,355)	331
Comprehensive income (loss)	$ (32,424)	$ (18,284)	$ 9,475	$(8,613)

The accompanying notes are an integral part of these Consolidated Financial Statements.

FibroGen, Inc.

Consolidated Statements of Redeemable Convertible Preferred Stock and Equity (Deficit)
(in thousands, except share and per share data)

	Senior Preferred Stock		Junior Preferred Stock		Common Stock		Additional Paid-in Capital	Stockholder's Note Receivable (Related Party)	Accumulated Other Comprehensive Income (Loss)	Accumulated Deficit	Non-Controlling Interests	Total
	Shares	Amount	Shares	Amount	Shares	Amount						
Balance at December 31, 2011	38,340,182	$168,436	46,460,057	$136,313	13,117,338	$ 131	$ 32,896	$ (789)	$ (314)	$ (215,265)	$ 21,118	$(25,910)
Net loss	—	—	—	—	—	—	—	—	—	(32,571)	—	(32,571)
Change in unrealized loss on investments	—	—	—	—	—	—	—	—	547	—	—	547
Foreign currency translation adjustments	—	—	—	—	—	—	—	—	(400)	—	—	(400)
Issuance of Series A Preferred to non-controlling interest	—	—	—	—	—	—	—	—	—	—	6,582	6,582
Stock options exercised	—	—	—	—	49,800	1	149	—	—	—	—	150
Repayment of stockholder's note	—	—	—	—	—	—	—	789	—	—	—	789
Stock-based compensation	—	—	—	—	—	—	4,561	—	—	—	—	4,561
Balance at December 31, 2012	38,340,182	168,436	46,460,057	136,313	13,167,138	132	37,606	—	(167)	(247,836)	27,700	(46,252)
Net loss	—	—	—	—	—	—	—	—	—	(14,943)	—	(14,943)
Change in unrealized loss on investments	—	—	—	—	—	—	—	—	(2,676)	—	—	(2,676)
Foreign currency translation adjustments	—	—	—	—	—	—	—	—	(665)	—	—	(665)
Issuance of Series A Preferred to non-controlling interest	—	—	—	—	—	—	—	—	—	—	175	175
Stock options exercised	—	—	—	—	34,126	—	84	—	—	—	—	84
Stock-based compensation	—	—	—	—	—	—	3,444	—	—	—	—	3,444
Balance at December 31, 2013	38,340,182	168,436	46,460,057	136,313	13,201,264	132	41,134	—	(3,508)	(262,779)	27,875	(60,833)
Net loss (*)	—	—	—	—	—	—	—	—	—	(8,944)	—	(8,944)
Change in unrealized loss on investments (*)	—	—	—	—	—	—	—	—	(1,052)	—	—	(1,052)
Foreign currency translation adjustments (*)	—	—	—	—	—	—	—	—	1,383	—	—	1,383
Stock options exercised (*)	—	—	—	—	307,777	3	922	—	—	—	—	925
Stock-based compensation (*)	—	—	—	—	—	—	9,734	—	—	—	—	9,734
Balance at September 30, 2014 (*)	38,340,182	$168,436	46,460,057	$136,313	13,509,041	$ 135	$ 51,790	$ —	$ (3,177)	$ (271,723)	$ 27,875	$(58,787)

(*) Unaudited

The accompanying notes are an integral part of these Consolidated Financial Statements.

FibroGen, Inc.

Consolidated Statements of Cash Flows
(in thousands)

	Years ended December 31,		Nine Months ended September 30,	
	2012	2013	2013	2014
			(unaudited)	
Operating activities				
Net income (loss)	$(32,571)	$(14,943)	$ 11,830	$ (8,944)
Adjustments to reconcile net income (loss) to net cash provided by (used in) operating activities:				
Depreciation and amortization	5,598	5,084	3,926	3,330
Amortization (accretion) of premium (discount) of investments	909	841	631	409
Gain on sale of investments, net	(365)	(301)	(237)	—
Gain on disposal of property and equipment	(2)	(1)	(2)	—
Stock-based compensation	4,561	3,444	2,616	9,734
Changes in operating assets and liabilities:				
Accounts receivable ($14,147, $2,772, $(3,261) and $(1,829) from related party)	14,147	(8,711)	300	(3,930)
Prepaid expenses and other current assets	450	791	(825)	435
Other assets	410	(547)	(264)	(913)
Accounts payable	770	(2,041)	(2,129)	1,829
Accrued liabilities and deferred rent ($14, $1,644, $597 and $(114) from related party)	1,478	11,307	1,359	9,197
Deferred revenue	(973)	30,885	31,245	34,837
Cease-use liability	(1,008)	(967)	(717)	(540)
Lease financing liability	627	690	546	468
Other long-term liabilities	364	387	287	267
Net cash provided by (used in) operating activities	(5,605)	25,918	48,566	46,179
Investing activities				
Purchases of property and equipment	(744)	(6,806)	(2,250)	(5,542)
Proceeds from sale of property and equipment	2	2	2	—
Purchases of investments	(2,160)	—	—	—
Proceeds from sales of investments	10,055	16,582	6,610	—
Proceeds from maturities of investments	11,999	1,000	1,000	38,546
Net cash provided by investing activities	19,152	10,778	5,362	33,004
Financing activities				
Borrowings under credit facility	17,300	11,500	11,500	—
Repayments under credit facility	(17,300)	(11,500)	(11,500)	—
Repayments of capital lease obligations	(311)	(329)	(245)	—
Repayments of lease liability	(403)	(403)	(302)	(302)
Proceeds from lease financing liability	—	553	—	—
Repayment of stockholder’s note receivable (related party)	789	—	—	—
Proceeds from convertible promissory note	—	600	600	—
Proceeds from non-controlling interest	6,582	175	175	—
Proceeds from issuance of Common Stock upon exercise of stock options	150	84	64	925
Payment of deferred offering costs	—	—	—	(2,194)
Net cash provided by (used in) financing activities	6,807	680	292	(1,571)
Effect of exchange rate changes on cash and cash equivalents	(66)	84	39	(55)
Net increase in cash and cash equivalents	20,288	37,460	54,259	77,557
Cash and cash equivalents at beginning of period	18,584	38,872	38,872	76,332
Cash and cash equivalents at end of period	$ 38,872	$ 76,332	$ 93,131	$153,889
Supplemental cash flow information:				
Interest payments	$ 506	$ 433	$ 332	$ 286
Purchases of property and equipment in accounts payable and accrued liabilities	$ 210	$ 1,655	$ 189	$ 443
Assets acquired under facility lease	$ —	$ 3,067	$ 3,067	$ —
Deferred offering costs recorded in accounts payable and accrued liabilities	$ —	$ —	$ —	$ 628

The accompanying notes are an integral part of these Consolidated Financial Statements.

Note 1–The Company

FibroGen, Inc. (“FibroGen” or the “Company”) is a research-based biopharmaceutical company focused on the discovery, development and commercialization of novel therapeutics to treat serious unmet medical needs. The Company’s focus in the areas of fibrosis and hypoxia-inducible factor (“HIF”) biology have generated multiple programs targeting various therapeutic areas. The Company’s most advanced product candidate, roxadustat, or FG-4592, is an oral small molecule inhibitor of HIF prolyl hydroxylases (“HIF-PHs”), in Phase 3 clinical development for the treatment of anemia in chronic kidney disease (“CKD”). FG-3019 is the Company’s monoclonal antibody in Phase 2 clinical development for the treatment of idiopathic pulmonary fibrosis (“IPF”), pancreatic cancer and liver fibrosis. The Company has taken a global approach with respect to the development and future commercialization of its product candidates, and this includes development and commercialization in the People’s Republic of China, or China.

On November 10, 2014, the Company effected a 1-for-2.5 reverse split of its common stock. Upon the effectiveness of the reverse stock split, (i) every 2.5 shares of outstanding common stock were combined into one share of common stock, (ii) the number of shares of common stock for which each outstanding option or warrant to purchase common stock is exercisable was proportionally decreased on a 1-for-2.5 basis, (iii) the exercise price of each outstanding option or warrant to purchase common stock was proportionately increased on a 1-for- 2.5 basis, (iv) the exchange ratio for each share of outstanding FibroGen Europe share of stock which is exchangeable into the Company’s common stock was proportionately reduced on a 1-for-2.5 basis, and (v) the conversion ratio for each share of outstanding preferred stock which is convertible into the Company’s common stock was proportionately reduced on a 1-for-2.5 basis. All of the outstanding common stock share numbers (including shares of common stock which the Company’s outstanding preferred stock shares are convertible into), common stock warrants, share prices, exercise prices and per share amounts have been adjusted in these consolidated financial statements, on a retroactive basis, to reflect this 1-for-2.5 reverse stock split for all periods presented. The par value per share and the authorized number of shares of common stock and preferred stock were not adjusted as a result of the reverse stock split.

Note 2–Summary of Significant Accounting Policies

Basis of Presentation and Liquidity

The consolidated financial statements include the accounts of the Company, its wholly owned subsidiaries and its majority-owned subsidiaries, FibroGen Europe Oy (“FibroGen Europe”) and FibroGen China Anemia Holdings, Ltd. (FibroGen China). All inter-company transactions and balances have been eliminated in consolidation.

Based upon the current status of, and plans for, its product development, the Company believes that its existing cash and cash equivalents and its short term and long term investments, in addition to expected milestone payments related to certain collaboration agreements, will be adequate to satisfy the Company’s capital needs through at least the next twelve months. However, the process of developing and commercializing products requires significant research and development, preclinical testing and clinical trials, manufacturing arrangements as well as regulatory approvals. These costs, together with the Company’s general and administrative expenses, are expected to result in operating losses until the commercialization of the Company’s products or partner collaborations generate sufficient revenue to cover expenses. To achieve sustained profitability, the Company, alone or with others, must successfully develop its product candidates, obtain required regulatory approvals and successfully manufacture and market its products.

Foreign Currency Translation

The reporting currency of the Company and its subsidiaries is the United States dollar. The functional currency of FibroGen Europe is the Euro. The assets and liabilities of FibroGen Europe are translated to United States dollars at exchange rates in effect at the balance sheet date. All income statement accounts are translated at

monthly average exchange rates. Resulting foreign currency translation adjustments are recorded directly in accumulated other comprehensive income (loss) as a separate component of stockholders' equity (deficit).

The functional currency of FibroGen, Inc. and all other subsidiaries is the United States dollar. Accordingly, monetary assets and liabilities in the non-functional currency of these subsidiaries are remeasured using exchange rates in effect at the end of the period. Revenues and costs in local currency are remeasured using average exchange rates for the period, except for costs related to those balance sheet items that are remeasured using historical exchange rates. The resulting remeasurement gains and losses are included within other income (expense), net in the consolidated statements of operations as incurred and have not been material for all periods presented.

Use of Estimates

The preparation of the consolidated financial statements in conformity with accounting principles generally accepted in the United States of America ("U.S. GAAP") requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates.

Unaudited interim consolidated financial information

The accompanying interim consolidated balance sheet as of September 30, 2014, the interim consolidated statements of operations, comprehensive income (loss), and cash flows for the nine months ended September 30, 2013 and 2014, the interim consolidated statements of redeemable convertible preferred stock and equity (deficit) for the nine months ended September 30, 2014, and the related footnote disclosures, are unaudited. These unaudited interim consolidated financial statements have been prepared in accordance with U.S. GAAP on the same basis as the audited consolidated financial statements and, in the opinion of management, reflect all adjustments, consisting of only normal recurring adjustments, considered necessary to state fairly the Company's financial position as of September 30, 2014 and the results of operations and cash flows for the nine months ended September 30, 2013 and 2014. The results of operations for the nine months ended September 30, 2014 are not necessarily indicative of the results that may be expected for the year ending December 31, 2014 or any other interim periods, or any future year or period.

Unaudited Pro Forma Consolidated Balance Sheet Data

Immediately prior to the completion of the initial public offering contemplated by the Company, all of the outstanding shares of Senior preferred stock and Junior preferred stock will automatically convert into shares of Common Stock, assuming the Company raises at least $50.0 million. The September 30, 2014 unaudited pro forma consolidated balance sheet data has been prepared assuming the conversion of all the Senior preferred stock and Junior preferred stock outstanding into 33,919,954 shares of Common Stock, but excludes the assumed conversion of preferred stock held by investors of FibroGen Europe into 958,996 shares of FibroGen, Inc. common stock as the conversions are subject to withdrawal until certain triggering events occur related to the Company's initial public offering.

Concentration of Credit Risk and Other Risks and Uncertainties

The Company is subject to risks associated with concentration of credit for cash and cash equivalents. A portion of cash on hand is invested in a diversified portfolio of investment grade corporate bonds issued by U.S. corporations as rated investment grade corporate bonds. Any remaining cash is deposited with major financial institutions in the United States, Finland, China and the Cayman Islands. At times, such deposits may be in excess of insured limits. The Company has not experienced any loss on its deposits of cash and cash equivalents. Included in current assets are significant balances of accounts receivable as follows:

	As of December 31,		As of September 30,
	2012	2013	2014 (unaudited)
Astellas Pharma Inc. “Astellas”—Related party	100%	34%	20%
AstraZeneca AB “AstraZeneca”	— %	66%	80%

The Company’s future results of operations involve a number of risks and uncertainties. Factors that could affect the Company’s future operating results and cause actual results to vary materially from expectations include, but are not limited to, rapid technological change, the results of clinical trials and the achievement of milestones, market acceptance of the Company’s product candidates, competition from other products and larger companies, protection of proprietary technology, strategic relationships and dependence on key individuals.

Cash, Cash Equivalents and Restricted Cash

The Company considers all highly liquid investments with maturities of three months or less and that are used in the Company’s cash management activities at the date of purchase to be cash equivalents. Cash and cash equivalents include money market accounts, various deposit accounts, and money market funds. Restricted cash includes an irrevocable standby letter of credit as security deposit for a long-term property lease with the Company’s landlord. Restricted cash as of each of December 31, 2012 and 2013, and September 30, 2014 (unaudited) totaled $7.3 million.

Investments

The Company classifies its investments as available-for-sale. Those investments with maturities less than 12 months are considered short-term investments. Those investments with maturities greater than 12 months are considered long-term investments. The Company’s investments classified as available-for-sale are recorded at fair value based upon quoted market prices at period end. Unrealized gains and losses that are deemed temporary in nature are recorded in accumulated other comprehensive income (loss) as a separate component of stockholders’ equity (deficit).

A decline in the fair value of any security below cost that is deemed other than temporary results in a charge to earnings and the corresponding establishment of a new cost basis for the security. Premiums and discounts are amortized (accreted) over the life of the related security as an adjustment to its yield. Dividend and interest income are recognized when earned. Realized gains and losses are included in earnings and are derived using the specific identification method for determining the cost of investments sold.

Deferred Offering Costs

Deferred offering costs consisted primarily of direct incremental costs related to the Company’s proposed initial public offering of its common stock. Approximately $2.8 million (unaudited) of deferred offering costs are included in other assets on the Company’s consolidated balance sheet as of September 30, 2014. Upon completion of the initial public offering contemplated herein, these amounts will be offset against the proceeds of the offering. If the offering is terminated, the deferred offering costs will be expensed.

Fair Value of Financial Instruments

Carrying amounts of certain of the Company's financial instruments including cash equivalents, investments, receivables, accounts payable and accrued liabilities approximate fair value due to their short maturities.

Property and Equipment

Property and equipment (except for costs of construction of certain long-lived assets–See Note 8) are recorded at cost and depreciated over their estimated useful lives using the straight-line method. Computer equipment, laboratory equipment, and furniture and fixtures are depreciated over three to five years. Leasehold improvements are recorded at cost and amortized over the term of the lease or their useful life, whichever is shorter.

Impairment of Long-Lived Assets

The Company continually evaluates whether events or circumstances have occurred that indicate that the estimated remaining useful life of its long-lived assets may warrant revision or that the carrying value of these assets may be impaired. If the Company determines that an impairment trigger has been met, the Company evaluates the realizability of its long-lived assets based on a comparison of projected undiscounted cash flows from use and eventual disposition with the carrying value of the related asset. Any write-downs (which are measured based on the difference between the fair value and the carrying value of the asset) are treated as permanent reductions in the carrying amount of the assets (asset group). Based on this evaluation, the Company believes that, as of each of the balance sheet dates presented, none of the Company's long-lived assets were impaired.

Revenue Recognition

Substantially all of the Company's revenues to date have been generated from its collaboration agreements.

The Company's collaboration agreements include multiple deliverables, and the Company therefore follows the guidance in Accounting Standards Codification Topic 605-25, "Revenue Recognition–Multiple-Element Arrangements," or ASC Topic 605-25 ("ASC 605-25"). ASC 605-25:

- provides guidance on how deliverables in an arrangement should be separated and how the arrangement consideration should be allocated to the separate units of accounting;
- requires an entity to determine the selling price of a separate deliverable using a hierarchy of (i) vendor-specific objective evidence, or VSOE, (ii) third-party evidence, or TPE, or (iii) best estimate of selling price, or BESP; and
- requires the allocation of the arrangement consideration, at the inception of the arrangement, to the separate units of accounting based on relative selling price.

The Company evaluates all deliverables within an arrangement to determine whether or not they provide value on a stand-alone basis. Based on this evaluation, the deliverables are separated into units of accounting. The arrangement consideration that is fixed or determinable at the inception of the arrangement is allocated to the separate units of accounting based on their relative selling prices. Significant judgment may be required in determining whether a deliverable provides stand-alone value, determining the amount of arrangement consideration that is fixed or determinable, and estimating the stand-alone selling price of each unit of accounting.

To date, the Company has determined that the selling price for the deliverables within its collaboration agreements should be determined using BESP, as neither VSOE nor TPE is available. The process for determining BESP involves significant judgment on the Company's part and includes consideration of multiple factors, including assumptions related to the market opportunity and the time needed to commercialize a product candidate pursuant to the relevant license, estimated direct expenses and other costs, which include the rates normally charged by contract research and contract manufacturing organizations for development and manufacturing obligations, and rates that would be charged by qualified outsiders for committee services.

For each unit of accounting identified within an arrangement, the Company determines the period over which the deliverables are provided and the performance obligation is satisfied. Service revenue is recognized using a proportional performance method. Direct labor hours or full time equivalents are typically used as the measurement of performance. Revenue may be recognized using a straight line method when performance is expected to occur roughly consistently over a period of time.

Payments or reimbursements resulting from the Company's research and development efforts for those arrangements where such efforts are considered as deliverables are recognized as the services are performed and are presented on a gross basis. To the extent payments are required to be made to the collaboration partners pursuant to research and development efforts, those costs are charged to research and development using the guidance pursuant to ASC 605-250, Customer Payments and Incentives, which states that cash consideration given by a vendor to a customer is presumed to be a reduction of the selling prices unless the vendor receives an identifiable benefit in exchange for the consideration that is sufficiently separable from the recipient's purchase of the vendor's products, and the vendor can reasonably estimate the fair value of the benefit.

Each of the Company's collaboration agreements includes milestones for which the Company follows ASC Topic 605-28, Revenue Recognition—Milestone Method ("ASC 605-28"). ASC 605-28 establishes the milestone method as an acceptable method of revenue recognition for certain contingent event-based payments under research and development arrangements. Under the milestone method, a payment that is contingent upon the achievement of a substantive milestone is recognized in its entirety in the period in which the milestone is achieved. A milestone is an event (i) that can only be achieved based in whole or in part on either the Company's performance or on the occurrence of a specific outcome resulting from the Company's performance, (ii) for which there is substantive uncertainty at the date the arrangement is entered into that the event will be achieved and (iii) that would result in additional payments being due to the Company. Determining whether a milestone is substantive is a matter of judgment and that assessment must be made at the inception of the arrangement. Milestones are considered substantive when the consideration earned from the achievement of the milestone is (i) commensurate with either the Company's performance to achieve the milestone or the enhancement of the value of the item delivered as a result of a specific outcome resulting from the Company's performance to achieve the milestone, (ii) relates solely to past performance and (iii) is reasonable relative to all deliverables and payment terms in the arrangement. Payments for achieving milestones which are not considered substantive are treated as additional arrangement consideration and are allocated following the relative selling price method previously described.

Research and Development Expenses

Research and development expenses consist of independent research and development costs and the gross amount of costs associated with work performed under collaboration agreements. Research and development costs include employee-related expenses, expenses incurred under agreements with clinical research organizations ("CROs"), other clinical and preclinical costs and allocated direct and indirect overhead costs, such as facilities costs, information technology costs and other overhead. All research and development costs are expensed as incurred.

Clinical Trial Accruals

Clinical trial costs are a component of research and development expenses. The Company accrues and expenses clinical trial activities performed by third parties based upon actual work completed in accordance with agreements established with clinical research organizations and clinical sites. The Company determines the costs to be recorded based upon validation with the external service providers as to the progress or stage of completion of trials or services and the agreed-upon fee to be paid for such services.

General and Administrative Expenses

General and administrative expenses consist primarily of employee-related expenses for executive, operational, finance, legal and human resource functions. Other general and administrative expenses include facility-related costs and professional service fees, other outside services, recruiting fees and expenses associated with obtaining and maintaining patents.

Income Taxes

The Company utilizes the asset and liability method of accounting for income taxes which requires the recognition of deferred tax assets and liabilities for expected future consequences of temporary differences between the financial reporting and income tax bases of assets and liabilities using enacted tax rates. Management makes estimates, assumptions and judgments to determine the Company's provision for income taxes and also for deferred tax assets and liabilities, and any valuation allowances recorded against the Company's deferred tax assets. The Company assesses the likelihood that its deferred tax assets will be recovered from future taxable income and, to the extent the Company believes that recovery is not likely, the Company must establish a valuation allowance.

The calculation of the Company's current provision for income taxes involves the use of estimates, assumptions and judgments while taking into account current tax laws, interpretation of current tax laws and possible outcomes of future tax audits. The Company has established reserves to address potential exposures related to tax positions that could be challenged by tax authorities. Although the Company believes its estimates, assumptions and judgments to be reasonable, any changes in tax law or its interpretation of tax laws and the resolutions of potential tax audits could significantly impact the amounts provided for income taxes in the Company's consolidated financial statements.

The calculation of the Company's deferred tax asset balance involves the use of estimates, assumptions and judgments while taking into account estimates of the amounts and type of future taxable income. Actual future operating results and the underlying amount and type of income could differ materially from the Company's estimates, assumptions and judgments thereby impacting the Company's financial position and results of operations.

The Company has adopted ASC 740-10 "Accounting for Uncertainty in Income Taxes" that prescribes a recognition threshold and measurement attribute for the financial statement recognition and measurement of uncertain tax positions taken or expected to be taken in the Company's income tax return, and also provides guidance on derecognition, classification, interest and penalties, accounting in interim periods, disclosure and transition.

The Company includes interest and penalties related to unrecognized tax benefits within income tax expense in the accompanying Consolidated Statements of Operations. The Company has not incurred any interest or penalties related to unrecognized tax benefits in any of the periods presented.

Stock-Based Compensation

The Company maintains equity incentive plans under which incentive and nonqualified stock options are granted to employees and non-employee consultants. Compensation expense relating to non-employee stock options has not been material for the years ended December 31, 2012 and 2013, and for the nine months ended September 30, 2013 and 2014 (unaudited).

The Company measures and recognizes compensation expense for all stock options granted to its employees and directors based on the estimated fair value of the award on the grant date. The Company uses the Black-Scholes valuation model to estimate the fair value of stock option awards. The fair value is recognized as expense, net of estimated forfeitures, over the requisite service period, which is generally the vesting period of the respective

award, on a straight-line basis. The Company believes that the fair value of stock options granted to non-employees is more reliably measured than the fair value of the services received. As such, the fair value of the unvested portion of the options granted to non-employees is re-measured each period. The resulting increase in value, if any, is recognized as expense during the period the related services are rendered on a straight-line basis. The determination of the grant date fair value of options using an option pricing model is affected by the Company's estimated Common Stock fair value and requires management to make a number of assumptions including the expected life of the option, the volatility of the underlying stock, the risk-free interest rate and expected dividends.

Comprehensive Income (Loss)

The Company is required to report all components of comprehensive income (loss), including net loss, in the consolidated financial statements in the period in which they are recognized. Comprehensive income (loss) is defined as the change in equity during a period from transactions and other events and circumstances from non-owner sources, including unrealized gains and losses on investments and foreign currency translation adjustments. Comprehensive gains (losses) have been reflected in the consolidated statements of comprehensive income (loss) for all periods presented.

Recent Accounting Pronouncements

The Company is an "emerging growth company," as defined in the Jumpstart Our Business Startups Act of 2012 (the "JOBS Act"). Under the JOBS Act, emerging growth companies can delay adopting new or revised accounting standards issued subsequent to the enactment of the JOBS Act until such time as those standards apply to private companies. The Company has irrevocably elected not to avail itself of this exemption from new or revised accounting standards, and, therefore, will be subject to the same new or revised accounting standards as public companies that are not emerging growth companies.

In April 2014, the FASB issued Accounting Standards Update ("ASU") No. 2014-08, *Reporting Discontinued Operations and Disclosures of Disposals of Components of an Entity*." The ASU amendment changes the requirements for reporting discontinued operations in Subtopic 205-20. The amendment is effective on a prospective basis for financial statements issued for fiscal years, and interim periods within those fiscal years, beginning on or after December 15, 2014. Early adoption is permitted for disposals that have not been reported in financial statements previously issued. The Company will apply the provisions of this ASU to any future transactions after the effective date which qualify for reporting discontinued operations.

In May 2014, the FASB issued ASU No. 2014-09, *Revenue from Contracts with Customers* (Topic 606), which supersedes the revenue recognition requirements in ASC 605, *Revenue Recognition*. This ASU is based on the principle that revenue is recognized to depict the transfer of goods or services to customers in an amount that reflects the consideration to which the entity expects to be entitled in exchange for those goods or services. The ASU also requires additional disclosure about the nature, amount, timing and uncertainty of revenue and cash flows arising from customer contracts, including significant judgments and changes in judgments and assets recognized from costs incurred to obtain or fulfill a contract. The ASU's effective date will be the first quarter of fiscal year 2017 using one of two retrospective application methods. The Company has not determined the potential effects of this ASU on its consolidated financial statements.

In August 2014, the FASB issued new guidance related to the disclosures around going concern. The new standard provides guidance around management's responsibility to evaluate whether there is substantial doubt about an entity's ability to continue as a going concern and to provide related footnote disclosures. The new standard is effective for fiscal years, and interim periods within those fiscal years, beginning after December 15, 2016. Early adoption is permitted. The Company will apply the guidance and disclosure provisions of the new standard upon adoption.

In February 2013, the Financial Accounting Standards Board (FASB) issued Accounting Standards Update (ASU) No. 2013-02, *Comprehensive Income (Topic 220): Reporting of Amounts Reclassified Out of Accumulated Other Comprehensive Income* (ASU 2013-02). This newly issued accounting standard update requires an entity to provide information about the amounts reclassified out of accumulated other comprehensive income by component. This ASU is effective for reporting periods beginning after December 15, 2012. The Company adopted this guidance in the first quarter of 2013 and the adoption of this guidance did not have an impact on its consolidated financial statements.

In July 2013, the FASB issued ASU No. 2013-11, *Income Taxes (Topic 740): Presentation of an Unrecognized Tax Benefit When a Net Operating Loss Carryforward, a Similar Tax Loss, or a Tax Credit Carryforward Exists (a Consensus of the FASB Emerging Issues Task Force*) (ASU 2013-02). This newly issued accounting standard update requires a liability related to an unrecognized tax benefit to be presented as a reduction of a deferred tax asset for a net operating loss carryforward, a similar tax loss or a tax credit carryforward if such settlement is required or expected in the event the uncertain tax position is disallowed. The Company adopted this guidance in the first quarter of 2014 and the adoption of this guidance did not have an impact on its consolidated financial statements.

Note 3—Collaboration Agreements

Astellas Agreements

Japan Agreement

In June 2005, the Company entered into a collaboration agreement with Astellas Pharma Inc. (“Astellas”) for the development and commercialization (but not manufacture) of roxadustat for the treatment of anemia in Japan (“Japan Agreement”). Under this agreement, Astellas paid license fees and other consideration totaling $40.1 million (such amounts were fully received as of February 2009). The Japan Agreement also provides for additional development and regulatory approval milestone payments up to $117.5 million, a commercial sales related milestone of $15.0 million and additional consideration based on net sales (as defined) in the low 20% range after commercial launch.

Europe Agreement

In April 2006, the Company entered into a separate collaboration agreement with Astellas for the development and commercialization of roxadustat for the treatment of anemia in Europe, the Middle East, the Commonwealth of Independent States and South Africa (“Europe Agreement”). Under the terms of the Europe Agreement, Astellas paid license fees and other upfront consideration totaling $320.0 million (such amounts were fully received as of February 2009). The Europe Agreement also provides for additional development and regulatory approval milestone payments up to $425.0 million. Under the Europe Agreement, Astellas committed to fund fifty percent of joint development costs for Europe and North America, and all territory-specific costs. The Europe Agreement also provides for tiered payments based on net sales of product (as defined) in the low 20% range.

AstraZeneca Agreements

US/Rest of World Agreement

Effective July 30, 2013, the Company entered into a collaboration agreement with AstraZeneca AB (“AstraZeneca”) for the development and commercialization of roxadustat for the treatment of anemia in the United States and all other countries in the world, other than China, not previously licensed under the Astellas Europe and Astellas Japan Agreements (“US/RoW Agreement”). It also excludes China, which is covered by a separate agreement with AstraZeneca described below. Under the terms of the agreement, AstraZeneca has agreed to pay upfront, non-contingent and time-based payments totaling $374.0 million, which the Company expects to receive in various amounts through June 2016, of which $82.0 million was received as of December 31, 2013 and were determined to be fixed and determinable upon the execution of the collaboration agreement. Out of the remaining payments of $292.0 million which are contractually due, $230.0 million have

extended payment terms and, accordingly, are not considered to be fixed or determinable upon the execution of the agreement. As such, for these remaining payments, the amount of revenue recognized is limited to the amount of cash consideration received; additionally, for each of the amounts received, the amount of revenue recognized will be determined on the basis of applying the relative selling price method to each of the units of accounting underlying the agreement as further described below. Further, $62.0 million of the remaining payment is contingent upon the occurrence of a specified event and accordingly is also not considered fixed or determinable. In addition, the US/RoW Agreement also provides for development and regulatory approval based milestone payments of up to $550.0 million, which include potential future indications which the companies choose to pursue, and commercial related milestone payments of up to $325.0 million.

Under the US/RoW Agreement, the Company and AstraZeneca will share equally in the development costs of roxadustat not already paid for by Astellas, up to a total of $233.0 million. Any additional development costs incurred by FibroGen during the development period in excess of the $233.0 million (aggregated spend) will be fully reimbursed by AstraZeneca. AstraZeneca will pay the Company tiered royalty payments on AstraZeneca's future net sales (as defined in the agreement) of roxadustat in the low 20% range. In addition, the Company will receive a transfer price for delivery of commercial product based on a percentage of AstraZeneca's net sales (as defined in the agreement) in the low- to mid-single digit range.

China Agreement

Effective July 30, 2013, the Company (through its subsidiaries affiliated with China) entered into a collaboration agreement with AstraZeneca for the development and commercialization (but not manufacture) of roxadustat for the treatment of anemia in China ("China Agreement"). Under the terms of the China Agreement, AstraZeneca agreed to pay upfront consideration totaling $28.2 million, of which $16.2 million was received as of December 31, 2013 and were determined to be fixed and determinable upon the execution of the collaboration agreement. The remainder of the upfront payments of $12.0 million had extended payment terms and, accordingly, are not considered to be fixed or determinable upon the execution of the agreement. This payment of $12.0 million (unaudited) was received as of March 31, 2014. In addition, the China Agreement provides for AstraZeneca to pay regulatory approval and other approval related milestones of up to $161.0 million. The China Agreement also provides for sales related milestone payments of up to $167.5 million and contingent payments of $20.0 million related to possible future compounds. The China Agreement is structured as a 50/50 profit or loss share (as defined) and provides for joint development costs (including capital and equipment costs for construction of the manufacturing plant in China), to be shared equally during the development.

Accounting for the Astellas Agreements

For each of the Astellas agreements, the Company has evaluated the deliverables within the respective arrangements and has separated them into various units of accounting.

Deliverables that did not provide standalone value have been combined with other deliverables to form a unit of accounting that collectively has standalone value, with revenue being recognized on the combined unit of accounting, rather than the individual deliverables. There are no right of return provisions for the delivered items in the Astellas agreements.

For the Astellas agreements, the Company allocated arrangement consideration to various units of accounting based on BESP of each deliverable within each unit of accounting using the relative selling price method as the Company did not have VSOE or TPE of selling price for such deliverables. Arrangement consideration includes non-contingent upfront payments of $360.1 million and co-development payments of $96.0 million (for Europe Agreement) that are deemed to be fixed and determinable.

For the technology license under the Japan Agreement and Europe Agreement, BESP was determined primarily by using the discounted cash flow ("DCF") method, which aggregates the present value of future cash flows to

determine the valuation as of the effective date of each of the agreements. The DCF method involves the following key steps: 1) the determination of cash flow forecasts and 2) the selection of a range of comparative risk-adjusted discount rates to apply against the cash flow forecasts. The discount rates selected were based on expectations of the total rate of return, the rate at which capital would be attracted to the Company and the level of risk inherent within the Company. The discounts applied in the DCF analysis ranged from 17.5% to 20.0%. The Company's cash flow forecasts were derived from probability-adjusted revenue and expense projections by territory. Such projections included consideration of taxes and cash flow adjustments. The probability adjustments were made after considering the likelihood of technical success at various stages of clinical trials and regulatory approval phases. BESP also considered certain future royalty payments associated with commercial performance of the Company's compounds, transfer prices and expected gross margins.

The units of accounting that were analyzed, along with their general timing of delivery or performance of service and general timing of revenue recognition, are as follows:

- License to the Company's technology existing at the effective date of the agreements. For both of the Astellas agreements, the license was delivered at the beginning of the agreement terms, or when the agreements were signed, and any contingencies had been removed. In both cases, the Company concluded at the time of the agreement that its collaboration partner, Astellas, would have the knowledge and capabilities to exploit the licenses without the Company's further involvement. However, the Japan Agreement with Astellas has contractual limitations that might affect Astellas' ability to exploit the license and therefore, potentially, the conclusion as to whether the license provides stand-alone value. In the Japan agreement, Astellas does not have the right to manufacture commercial supplies of the drug. In order to determine whether this characteristic of the agreement should lead to a conclusion that the license did not have stand-alone value, the Company considered the intent of the parties and the substantive reasons that led to that feature of the agreement.
- In the case of the Japan Agreement, the Company retained manufacturing rights largely because of the way the parties chose for FibroGen to be compensated under the agreement. At the time the agreement was signed, the Company believed that it was more advantageous upon commercialization to have a transfer price revenue model in place as opposed to a traditional sales-based model. The Company and Astellas could have structured the arrangement with a transfer of manufacturing rights and compensated the Company through a royalty or other feature without significantly diminishing the prospects of the drug product. Therefore, the Company has determined that the license in Japan provides stand-alone value to the customer despite the lack of manufacturing rights.
- License to the Company's technology developed during the term of the agreement and development (referred to as "when and if available") and information sharing services. These deliverables are generally delivered throughout the term of the agreements and are recognized as revenue as the services are provided.
- Co-development services (Europe Agreement). This deliverable relates to co-development services that were reasonably expected to be performed by the Company at the time the collaboration agreement was signed. Revenue is recognized as reimbursements for such co-development services are earned. The period related to this deliverable represented the Company's determination of the non-contingent performance period, which was estimated to be 36 months for the Europe Agreement from the signing of the agreement. There was no provision for co-development services in the Japan agreement.
- Manufacturing of clinical supplies of products. This deliverable is satisfied as supplies for clinical product are delivered for use in the Company's clinical trial programs during the development period, or pre-commercialization period. Revenue is recognized based on the estimated proportion of the development services performed during the development period. These estimates are made at the beginning of each accounting period and will likely change throughout the course of the terms of both agreements. As new information related to these estimates becomes available, the Company may adjust the timing of revenue recognition related to this unit of accounting.

- Manufacturing commercial supplies of products. This deliverable is satisfied and revenue is recognized as supplies are shipped for commercial use during the commercialization period. As this deliverable is considered a contingent deliverable, it is outside the scope of the initial allocation of upfront and other consideration.
- Committee service. This deliverable is satisfied and revenue is recognized throughout the course of the various agreements as meetings are attended.

Any consideration received for each agreement after the initial proceeds on the agreement signing date were also (and will be also) allocated to the various units of accounting above per agreement using the relative selling price method under ASC 605-25-30-2 and 30-5.

Under the Europe Agreement, the Company is also eligible to receive from Astellas an aggregate of approximately $425.0 million in potential milestone payments, comprised of (i) up to $90.0 million in substantive milestone payments upon achievement of specified clinical and development milestone events, (ii) up to $335.0 million in substantive milestone payments upon achievement of specified regulatory milestone events, including up to $25.0 million in milestone payments in connection with receipt of marketing approval in Russia. Clinical milestone payments of $40.0 million and $50.0 million were received in 2010 and 2012, respectively. The Company evaluated the criteria under ASC 605-28 (as disclosed in Note 2) and concluded that each of those milestones were substantive.

Under the Japan Agreement, the Company is also eligible to receive from Astellas an aggregate of approximately $132.5 million in potential milestone payments, comprised of (i) up to $22.5 million in substantive milestone payments upon achievement of specified clinical and development milestone events, (ii) up to $95.0 million in substantive milestone payments upon achievement of specified regulatory milestone events, and (iii) up to approximately $15.0 million in milestone payments upon the achievement of specified commercial sales milestone. A clinical milestone payment of $12.5 million was received in 2013. The Company evaluated the criteria under ASC 605-28 (as disclosed in Note 2) and concluded that the aforementioned milestone was substantive.

Accounting for the AstraZeneca Agreements

The Company has considered the criteria in AICPA TIS Section 5100.39 in evaluating whether the US/RoW and China Agreements should be accounted for as a single arrangement and concluded that the agreements should be accounted for as a single arrangement as the presumption under the guidance is that two or more agreements executed with a single customer at or around the same time should be presumed to be a single arrangement. Accordingly, upfront and other non-contingent arrangement consideration received and to be received has been and will be pooled together and allocated to each of the units of accounting in both the US/RoW and China Agreements based on their relative fair values.

The Company has evaluated the deliverables within the arrangement and has separated them into various units of accounting.

Deliverables that did not provide stand-alone value have been combined with other deliverables to form a unit of accounting that collectively has stand-alone value, with revenue being recognized on the combined unit of accounting, rather than the individual deliverables. There are no right of return provisions for the delivered items in the agreements.

For the technology license under the AstraZeneca US/RoW Agreement, BESP was determined based on a two-step process. The first step involved determining an implied royalty rate that would result in the net present value of future cash flows to equal to zero (i.e. where the IRR on the transaction would equal the target return for the investment). This results in an upper bound estimation of the magnitude of royalties that a hypothetical acquirer would reasonably pay for the forecasted cash flow stream. The Company’s cash flow forecasts were derived from probability-adjusted revenue and expense projections. Such projections included consideration of taxes and cash

flow adjustments. The probability adjustments were made after considering the likelihood of technical success at various stages of clinical trials and regulatory approval phases. The second step involved applying the implied royalty rate, which was determined to be 40%, against the probability-adjusted projected net revenues by territory and determining the value of the license as the net present value of future cash flows after adjusting for taxes. The discount rate utilized was 17.5%.

US/RoW Agreement:

The units of accounting that were analyzed, along with their general timing of delivery or performance of service and general timing of revenue recognition, are as follows:

- License to the Company's technology existing at the effective date of the agreements. For the US/RoW agreement, the license was delivered at the beginning of the agreement terms as all contingencies had been removed. The Company concluded that AstraZeneca has the knowledge and capabilities to exploit the US/RoW license without the Company's further involvement.
- Co-development services. This deliverable relates to co-development services which were reasonably expected to be performed by the Company at the time the Agreement was signed. Revenue is recognized as reimbursements for such co-development services are earned. The period related to this deliverable represented the Company's determination of the non-contingent performance period, which was estimated to be 65 months from the signing of the US/RoW agreement.
- Manufacturing of clinical supplies of products. This deliverable is satisfied as supplies for clinical product are delivered for use in the Company's clinical trial programs during the development period, or pre-commercialization period. Revenue is recognized based on the estimated proportion of the development services performed during the development period. These estimates are made at the beginning of each accounting period and will likely change throughout the course of the agreements. As new information related to these estimates becomes available, the Company may adjust the timing of revenue recognition related to this unit of accounting.
- Manufacturing commercial supplies of products. This deliverable is satisfied and revenue is recognized as supplies are shipped for commercial use during the commercialization period. As this deliverable is considered a contingent deliverable, it is outside the scope of the initial allocation of upfront and other consideration.
- Committee service. This deliverable is satisfied and revenue is recognized throughout the course of the various agreements as meetings are attended.

Under the US/RoW agreement, the Company is also eligible to receive from AstraZeneca an aggregate of approximately $875.0 million in potential milestone payments, comprised of (i) up to $65.0 million in substantive milestone payments upon achievement of specified clinical and development milestone events, (ii) up to $325.0 million in substantive milestone payments upon achievement of specified regulatory milestone events, (iii) up to $160.0 million in non-substantive deferred approval milestone, which would be paid if certain competitors do not launch an HIF compound in the U.S. on or before January 1, 2023 and (iv) up to approximately $325.0 million in milestone payments upon the achievement of specified commercial sales events.

China Agreement:

The units of accounting that were analyzed, along with their general timing of delivery or performance of service and general timing of revenue recognition, are as follows:

- License to the Company's technology existing at the effective date of the agreement. The license was delivered at the beginning of the agreement term as all contingencies had been removed. However, the China Agreement with AstraZeneca has contractual limitations that might affect AstraZeneca's ability to exploit the license and therefore, potentially, the conclusion as to whether the license provides stand-

alone value. In the China Agreement, AstraZeneca does not have the right to manufacture commercial supplies of the drug. In order to determine whether this characteristic of the arrangement should lead to a conclusion that the license did not have stand-alone value, the Company considered the intent of the parties and the substantive reasons that led to that feature of the agreement.

For the China Agreement, the Company retained manufacturing rights as an essential part of a strategy to pursue domestic regulatory pathway for product approval which requires the regulatory licensure of the manufacturing facility in order to commence commercial shipment. The prospects for the collaboration as a whole would have been substantially different had manufacturing rights been provided to AstraZeneca. Because the retention of manufacturing rights by the Company was a significant factor in the collaboration strategy, rather than simply a mechanism to properly compensate FibroGen, management concluded that the license and development services do not have stand-alone value apart from the manufacturing rights. Accordingly, all the deliverables identified, including co-development services, under the China Agreement have been treated as a single unit of account and all revenue allocable to this unit of account is deferred until delivery of commercial drug product has begun. Upon commencement of delivery of commercial drug product, revenue would be recognized in a pattern consistent with estimated deliveries of the commercial drug product.

Under the China Agreement, the Company is also eligible to receive from AstraZeneca an aggregate of approximately $328.5 million in potential milestone payments, comprised of (i) up to $15.0 million in substantive milestone payments upon achievement of specified clinical and development milestone events, (ii) up to $146.0 million in substantive milestone payments upon achievement of specified regulatory milestone events, and (iii) up to approximately $167.5 million in milestone payments upon the achievement of specified commercial sales events.

As the Company is accounting for both the US/RoW and China Agreements as one arrangement, any consideration received after the initial proceeds on the agreement signing date were also (and will be also) allocated to the various units of accounting above using the relative selling price method under ASC 605-25-30-2 and 30-5.

Summary of revenue recognized under the collaboration agreements

The table below summarizes the accounting treatment for the various deliverables pursuant to each agreement. License amounts identified below are included in the “License and milestone revenue” line item in the consolidated statements of operations. All other elements identified below are included in the “Collaboration services and other revenue” line item in the consolidated statements of operations. Amounts recognized as revenue are shown below (in thousands):

Agreement	Deliverable	Cumulative Through December 31, 2011	Years ended December 31, 2012	Years ended December 31, 2013	Nine Months Ended September 30, 2013	Nine Months Ended September 30, 2014
					(unaudited)	
Japan	License	$ 39,002	$1,136	$ 566	$ 330	$ 348
	Milestones	—	—	12,500	12,500	—
	Total license and milestone revenue	$ 39,002	$1,136	$13,066	$12,830	$ 348
	Collaboration services revenue*	$ 780	$ 229	$ 433	$ 320	$ 265

As of September 30, 2014, the total arrangement consideration has been allocated to each of the following deliverables, along with any associated deferred revenue as follows (in thousands):

	Cumulative Revenue Through September 30, 2014 (unaudited)	Deferred Revenue	Total Consideration
License	$ 41,052	$ —	$ 41,052
When and if available compounds	10	30	40
Manufacturing—clinical supplies	1,686	226	1,912
Committee services	11	4	15
Total	$ 42,759	$ 260	$ 43,019

* When and if available compounds, manufacturing—clinical supplies and committee services have each been identified as separate units of accounting with standalone value and amounts allocable to these elements have been recognized and classified within the Collaboration services revenue line item within the consolidated statements of operations.

Agreement	Deliverable	Cumulative Through December 31, 2011	Years ended December 31, 2012	Years ended December 31, 2013	Nine Months Ended September 30, 2013 (unaudited)	Nine Months Ended September 30, 2014 (unaudited)
Europe	License	$ 348,735	$11,709	$9,260	$ 6,214	$ 9,617
	Milestones	40,000	50,000	—	—	—
	Total license and milestone revenue	$ 388,735	$61,709	$9,260	$ 6,214	$ 9,617
	Collaboration services revenue*	$ 31,553	$ 2,046	$2,902	$ 2,199	$ 2,242

As of September 30, 2014, the total arrangement consideration has been allocated to each of the following deliverables, along with any associated deferred revenue as follows (in thousands):

	Cumulative Revenue Through September 30, 2014 (unaudited)	Deferred Revenue	Total Consideration
License	$ 379,321	$ —	$ 379,321
When and if available compounds	273	449	722
Manufacturing—clinical supplies	7,849	1,237	9,086
Development services – in progress	30,392	—	30,392
Committee services	229	33	262
Total	$ 418,064	$ 1,719	$ 419,783

* When and if available compounds, manufacturing—clinical supplies, development services – in progress at the time of signing of the agreement, and committee services have each been identified as a separate unit of accounting with standalone value and amounts allocable to these units have been recognized in revenue as services are performed and classified within the Collaboration services revenue line item within the consolidated statements of operations.

Agreement	Deliverable	Year Ended December 31, 2013	Nine Months Ended September 30, 2014 (unaudited)
US/RoW	License	$ 72,635	$ 96,209
& China	Milestones	—	—
	Total license and milestone revenue	$ 72,635	$ 96,209
	Collaboration services revenue*	$ 3,843	$ 12,769
	China single unit of accounting**	$ —	$ —

As of September 30, 2014, the total arrangement consideration has been allocated to each of the following deliverables, along with any associated deferred revenue as follows (in thousands):

	Cumulative Revenue Through September 30, 2014 (unaudited)	Deferred Revenue	Total Consideration
License	$ 168,845	$ —	$ 168,845
Co-development, information sharing			
& committee services	16,548	34,786	51,334
Manufacturing—clinical supplies	64	112	176
China-single unit of accounting	—	34,609	34,609
Total	$ 185,457	$69,507	$ 254,964

* Co-development, information sharing, and committee services have been combined into a single unit of accounting because the requirements to share information and serve on committees are useful only in combination with the development services, and because all three items are delivered over the same period while manufacturing—clinical supplies has been identified as a separate unit of accounting with standalone value and amounts allocable to this unit of accounting have been recognized and classified within the Collaboration services revenue line item within the consolidated statements of operations.

** All revenues attributable to the China unit of accounting are deferred until all deliverables are met. The China license and collaboration services elements have been combined into a single unit of accounting and consideration allocable to this unit is being deferred due to FibroGen's retention of manufacturing rights and lack of standalone value.

Other Revenues

Other revenues consist of royalty payments received, which are recorded on a monthly basis as they are reported to and collagen feasibility sales. Other revenues were $0.8 million and immaterial for the years ended December 31, 2012 and 2013, respectively. Other revenues were immaterial for the nine months ended September 30, 2013 and 2014 (unaudited), respectively.

Deferred Revenue

Deferred revenue represents amounts billed to our collaboration partners for which the related revenues have not been recognized because one or more of the revenue recognition criteria have not been met. The current portion of deferred revenue represents the amount to be recognized within one year from the balance sheet date based on the

estimated performance period of the underlying deliverables. The long term portion of deferred revenue represents amounts to be recognized after one year through the end of the non-contingent performance period of the underlying deliverables. The long term portion of deferred revenue also includes amounts allocated to the China unit of accounting under the AstraZeneca arrangement as revenue recognition associated with this unit of accounting is tied to the commercial launch of the products within China, which is not expected to occur within the next year.

Note 4—Fair Value Measurements

In accordance with the authoritative guidance on fair value measurements and disclosures under GAAP, the Company presents the fair values all financial assets and liabilities and any other assets and liabilities that are recognized or disclosed at fair value on a nonrecurring basis. The guidance defines fair value, establishes a framework for measuring fair value in generally accepted accounting principles and expands disclosures about fair-value measurements. The guidance also requires fair value measurements be classified and disclosed in one of the following three categories:

Level 1: Quoted prices in active markets for identical assets or liabilities.

Level 2: Observable inputs other than quoted prices in active markets for identical assets or liabilities.

Level 3: Unobservable inputs.

The Company values certain assets and liabilities, focusing on the inputs used to measure fair value, particularly in instances where the measurement uses significant unobservable (Level 3) inputs. The Company's financial instruments are valued using quoted prices in active markets (Level 1) or based upon other observable inputs (Level 2). The Company's assessment of the significance of a particular input to the fair value measurement in its entirety requires management to make judgments and considers factors specific to the asset or liability. In addition, the categories presented do not suggest how prices may be affected by the size of the purchases or sales, particularly with the largest highly liquid financial issuers who are in markets continuously with non-equity instruments, or how any such financial assets may be impacted by other factors such as US government guarantees. Assets and liabilities measured at fair value are classified in their entirety based on the lowest level of input that is significant to the fair value measurement.

The following table sets forth the fair value of the Company's financial assets that were measured on a recurring basis (in thousands):

	December 31, 2012			
	Level 1	Level 2	Level 3	Total
Certificates of deposit	$ —	$ 296	$ —	$ 296
Corporate bonds	—	82,446	—	82,446
Equity investments	184	—	—	184
Sub total	184	82,742	—	82,926
Money market funds	18,571	—	—	18,571
Total	$18,755	$82,742	$ —	$101,497

	December 31, 2013			
	Level 1	Level 2	Level 3	Total
Corporate bonds	$ —	$61,624	$ —	$ 61,624
Equity investments	209	—	—	209
Sub-total	209	61,624	—	61,833
Money market funds	48,857	—	—	48,857
Total	$49,066	$61,624	$ —	$110,690

	September 30, 2014			
	Level 1	Level 2	Level 3	Total
		(unaudited)		
Corporate bonds	$ —	$21,612	$ —	$ 21,612
Equity investments	214	—	—	214
Sub-total	214	21,612	—	21,826
Money market funds	119,880	—	—	119,880
Total	$120,094	$21,612	$ —	$141,706

The Company's Level 2 investments are valued using third-party pricing sources. The pricing services utilize industry standard valuation models, including both income and market-based approaches, for which all significant inputs are observable, either directly or indirectly, to estimate fair value. These inputs include reported trades of and broker/dealer quotes on the same or similar investments, issuer credit spreads, benchmark investments, prepayment/default projections based on historical data and other observable inputs.

The following table sets forth the fair value of the Company's financial liabilities that are carried at historical cost (in thousands):

	December 31, 2012			
	Level 1	Level 2	Level 3	Total
Cease-use liability	$ —	$ —	$ 1,861	$ 1,861
Lease financing obligations	—	—	92,902	92,902
Total	$ —	$ —	$94,763	$94,763

	December 31, 2013			
	Level 1	Level 2	Level 3	Total
Cease-use liability	$ —	$ —	$ 894	$ 894
Lease financing obligations	—	—	96,809	96,809
Total	$ —	$ —	$97,703	$97,703

	September 30, 2014			
	Level 1	Level 2	Level 3	Total
		(unaudited)		
Cease-use liability	$ —	$ —	$ 355	$ 355
Lease financing obligations	—	—	96,975	96,975
Total	$ —	$ —	$97,330	$97,330

The fair value of the Company's financial liabilities were each derived by using an income approach which required Level 3 inputs such as discounted estimated future cash flows. Refer to Note 5 for further information regarding the calculation of the cease-use liability and Note 8 for further information regarding the calculation of the lease financing liability.

There were no transfers of assets or liabilities between levels for the years ended December 31, 2012 and 2013, or the nine months ended September 30, 2014 (unaudited).

Note 5—Balance Sheet Components

Cash and Cash Equivalents

Cash and cash equivalents consisted of the following (in thousands):

	December 31,		September 30,
	2012	2013	2014 (unaudited)
Cash	$20,005	$27,475	$ 34,009
Money market funds	18,571	48,857	119,880
Certificates of deposit	296	—	—
Cash and cash equivalents	$38,872	$76,332	$ 153,889

Accounts Receivable

Accounts receivable consisted of the following (in thousands):

	December 31,		September 30,
	2012	2013	2014 (unaudited)
Astellas—Related party	$8,784	$ 6,012	$ 4,183
AstraZeneca	—	11,483	17,242
Accounts receivable	$8,784	$17,495	$ 21,425

Property and Equipment

Property and equipment consisted of the following (in thousands):

	December 31,		September 30,
	2012	2013	2014 (unaudited)
Laboratory equipment	$ 12,097	$ 12,346	$ 16,242
Computer equipment	4,294	4,490	4,987
Furniture and fixtures	4,791	4,824	5,173
Leasehold improvements	83,793	83,801	92,700
Building shell (see Note 8)	50,812	53,879	53,879
Construction in progress	889	8,613	870
	156,676	167,953	173,851
Less accumulated depreciation and amortization	(33,012)	(38,055)	(41,298)
Property and equipment, net	$123,664	$129,898	$ 132,553

Depreciation and amortization expense for the years ended December 31, 2012 and 2013, and the nine months ended September 30, 2013 and 2014 was $5.6 million, $5.1 million, $3.9 million (unaudited) and $3.3 million (unaudited), respectively.

Investments

All investments are classified as available-for-sale. The amortized cost, gross unrealized holding gains or losses, and fair value of the Company's available-for-sale investments by major investments type are summarized in the tables below (in thousands):

	December 31, 2012			
	Amortized Cost	Gross Unrealized Holding Gains	Gross Unrealized Holding Losses	Aggregate Fair Value
Investments				
Corporate bonds	$ 78,291	$ 4,175	$ (20)	$ 82,446
Equity investments	125	62	(3)	184
Total investments	$ 78,416	$ 4,237	$ (23)	$ 82,630

	December 31, 2013			
	Amortized Cost	Gross Unrealized Holding Gains	Gross Unrealized Holding Losses	Aggregate Fair Value
Investments				
Corporate bonds	$ 60,169	$ 1,455	$ —	$ 61,624
Equity investments	125	87	(3)	209
Total investments	$ 60,294	$ 1,542	$ (3)	$ 61,833

	September 30, 2014			
	Amortized Cost	Gross Unrealized Holding Gains	Gross Unrealized Holding Losses	Aggregate Fair Value
			(unaudited)	
Investments				
Corporate bonds	$ 21,215	$ 397	$ —	$ 21,612
Equity investments	124	90	—	214
Total investments	$ 21,339	$ 487	$ —	$ 21,826

The contractual maturities of available-for-sale investments were as follows (in thousands):

	December 31, 2013	September 30, 2014 (unaudited)
Within one year	$ 46,477	$ 21,612
After one year through three years	15,147	—
Total debt investments	61,624	21,612
Equity investments	209	214
Total investments	$ 61,833	$ 21,826

Available-for-sale investments are reported at fair value and as such, their associated unrealized gains and losses are reported as a separate component of stockholders' equity (deficit) as accumulated other comprehensive income (loss).

Accrued Liabilities

Accrued liabilities consisted of the following (in thousands):

	As of December 31,		As of September 30,
	2012	2013	2014
			(unaudited)
Preclinical and clinical trial accruals	$ 7,719	$13,117	$ 24,331
Payroll and related accruals	5,381	11,924	9,570
Construction-in-progress obligations	210	1,385	1,411
Professional services	1,521	1,278	1,390
Deferred rent, current portion	293	342	563
Taxes	186	59	290
Other	1,170	1,454	2,536
Total accrued liabilities	$16,480	$29,559	$ 40,091

Cease-Use Liability

In April 2009, in conjunction with the move of the Company's headquarters to a new facility, the Company completed the exit from one of the two formerly occupied buildings. This facility closure was accounted for in accordance with accounting guidance related to costs associated with exit or disposal activities. Based upon this guidance, the Company recorded a cease-use liability equal to the net present value of the future minimum lease payments, net of expected future sublease payments, through the end of the remaining lease term. Any adjustments to the cease-use liability, due to factors such as expected future sublease payments, will be recorded in general and administrative expenses in the period those adjustments occur. A rollforward of the cease-use liability is shown below (in thousands):

	Years Ended December 31,		Nine Months Ended September 30,
	2012	2013	2014
			(unaudited)
Beginning liability balance	$2,868	$1,861	$ 894
Payments made	(885)	(967)	(539)
Adjustments to estimates (1)	(122)	—	—
Ending liability balance	$1,861	$ 894	$ 355

(1) This adjustment related to the change in estimate for future sublease income.

Note 6—Product Development Obligations

The TEKES product development obligations consist of 11 separate advances (each in the form of a note agreement) received by FibroGen Europe between 1996 and 2008 from TEKES. These advances are granted on a project by project basis to fund various product development efforts undertaken by FibroGen Europe only. Each separate note bears interest (not compounded) calculated as one percentage point less than the Bank of Finland rate in effect at the time of the note, but no less than 3.0%.

If the research work funded by TEKES does not result in an economically profitable business or does not meet its technological objectives, TEKES may, on application from FibroGen Europe, forgive each of these loans, including accrued interest, either in full or in part. As of December 31, 2013 and September 30, 2014, the Company had $13.0 million and $12.0 million (unaudited) of principal outstanding, respectively, and $5.3 million and $5.1 million (unaudited) of interest accrued, respectively, which have been included in the product development obligations line item on the consolidated balance sheets.

The Company is not a guarantor of these loans, and these loans are not repayable by FibroGen Europe until it has distributable funds.

Note 7—Credit Facility and Convertible Note Payable

In September 2012, the Company entered into a credit agreement (the "Credit Facility") with a lender for a revolving line of credit of up to $50.0 million. The Credit Facility is collateralized by the short and long-term investments of the Company held by the lender. Under the terms of the Credit Facility, the balance outstanding cannot exceed $50.0 million. The Company drew down amounts on the Credit Facility during both the years ended December 31, 2012 and 2013 (which were also repaid in those periods). Interest expense of less than $0.1 million was recognized for both years ended December 31, 2012 and 2013, and the nine months ended September 30, 2013 and 2014 at a rate of 1% above daily three month LIBOR. The Credit Facility terminated in September 2013.

In January 2013, FibroGen China entered into a $0.6 million convertible promissory note. The note bears simple interest at a rate of two percent (2.00%) per annum, accrued on an annual basis in arrears. The outstanding principal balance and unpaid accrued interest on the note is due and payable upon the earlier of (a) the effectiveness of the initial public offering of FibroGen China or (b) the eight year anniversary of the date of the note. The total outstanding principal balance and unpaid accrued interest on the note will be converted into Series A Preferred Stock of FibroGen China at the option of the lender or by the Company at its discretion.

Note 8—Commitments and Contingencies

Operating Leases

Future minimum lease payments under all non-cancelable operating lease obligations as of December 31, 2013 are as follows (in thousands):

Year Ending	Operating Leases
2014	$ 3,917
2015	501
2016	45
2017	9
Total minimum payments	$ 4,472

Capital Leases

The Company does not have any capital lease obligations beyond December 31, 2012.

Facility Lease Financing Obligations

FibroGen, Inc.

In September 2006, the Company entered into a long-term property lease with Shorenstein Properties LLC ("Alexandria" or "landlord") providing the Company with 234,249 square feet of space for an initial term of 15 years. Upon signing, a stand-by letter of credit was established in the amount of $7.3 million which has been included in restricted cash. The agreement included an expansion option to occupy part of an adjacent building within 31 months of the lease commencement date of November 20, 2008. In June 2012, the Company gave notice to its landlord that it would not exercise this expansion option, which resulted in a $5.0 million payment liability to the landlord which is being financed over the remaining lease term of its lease.

In connection with this lease, the Company was responsible for approximately 60% of the construction costs for the tenant improvements. The Company is deemed, for accounting purposes only, to be the accounting owner of

the entire project including the building shell, even though it is not the legal owner. The balance of the tenant improvements were paid by Alexandria in the form of a tenant improvement allowance of $140.50 per square foot of rentable space, or $32.5 million.

In connection with the Company's accounting for this transaction, the Company capitalized Alexandria's costs of constructing the building shell which totaled $50.8 million, and recognized a corresponding lease financing obligation. The Company also recognized, as an additional lease financing obligation, the reimbursements totaling $32.5 million from landlord for tenant improvements since these reimbursements are also deemed to be a financing obligation.

A portion of the monthly lease payment will be allocated to land rent and recorded as an operating lease expense and the non-interest portion of the amortized lease payments to the landlord related to rent of the building will be applied to the lease financing liability.

FibroGen China

In February 2013, the Company entered into a long-term property lease with Beijing Economic-Technological Development Area ("BDA") Management Committee for a pilot plant located in Beijing Yizhuang Biomedical Park ("BYBP") of BDA. The leased space is 4,820 square meters over an eight (8) year term starting February 1, 2013.

In connection with this lease, the Company was responsible for approximately 100% of the construction costs for the tenant improvements. The Company is deemed, for accounting purposes only, to be the accounting owner of the entire project, including the building shell, even though it is not the legal owner.

In connection with the Company's accounting for this transaction, the Company capitalized BDA Management Committee's costs of constructing the building shell which totaled $3.1 million, and recognized a corresponding lease financing obligation. The Company also recognized, as an additional lease financing obligation, the reimbursements totaling $0.5 million from BYBP for a rent subsidy since this reimbursement is also deemed to be a financing obligation.

A portion of the monthly lease payment will be allocated to land rent and recorded as an operating lease expense and the non-interest portion of the amortized lease payments to the landlord related to rent of the building will be applied to the lease financing liability.

Future minimum lease payments under the Company's facility lease financing obligations as of December 31, 2013 are as follows (in thousands):

Year Ending	Lease Financing Obligation
2014	$ 13,286
2015	13,535
2016	13,741
2017	14,080
2018	14,303
Thereafter	70,641
Total minimum payments	$ 139,586

Apart from the property leases with Alexandria and BDA Management Committee, rent expense for leased facilities under operating lease commitments, was $2.9 million, $3.0 million, $2.2 million and $2.2 million for the years ended December 31, 2012 and 2013, and for the nine months ended September 30, 2013 and 2014 (unaudited), respectively. The Company received sublease income of $4.3 million, $4.5 million, $3.4 million and $3.7 million for the years ended December 31, 2012 and 2013, and for the nine months ended September 30, 2013 and 2014 (unaudited), respectively.

Indemnification Agreements

The Company enters into standard indemnification arrangements in the ordinary course of business, including for example, service, manufacturing and collaboration agreements. Pursuant to these arrangements, the Company indemnifies, holds harmless, and agrees to reimburse the indemnified parties for losses suffered or incurred by the indemnified party, including in connection with intellectual property infringement claims by any third party with respect to its technology. The term of these indemnification agreements is generally perpetual any time after the execution of the agreement. The maximum potential amount of future payments the Company could be required to make under these arrangements is not determinable. The Company has never incurred costs to defend lawsuits or settle claims related to these indemnification agreements. As a result, the Company believes the estimated fair value of these arrangements is minimal.

The Company has entered into indemnification agreements with its directors and officers that may require the Company to indemnify its directors and officers against liabilities that may arise by reason of their status or service as directors or officers to the extent permissible under applicable law.

Note 9—Redeemable Convertible Preferred Stock and Equity (Deficit)

Convertible Preferred Stock ("Preferred Stock")

As of December 31, 2012 and 2013, the Company had authorized 125,000,000 shares of Preferred Stock. All shares of Preferred Stock have a par value of $0.01 per share.

The Series A Preferred Stock ("Series A"), Series B Preferred Stock ("Series B"), Series C Preferred Stock ("Series C"), Series D Preferred Stock ("Series D"), Royalty Acquisition Preferred Stock ("Royalty Acquisition") and Series G-1 Preferred Stock ("Series G-1") are collectively referred to as the "Junior Preferred Stock".

The Series E Redeemable Convertible Preferred Stock ("Series E") and Series F Redeemable Convertible Preferred Stock ("Series F") are collectively referred to as the "Senior Preferred Stock".

The Preferred Stock authorized, issued and outstanding at December 31, 2012 and 2013, and as of September 30, 2014 (unaudited) are as follows (in thousands):

	Authorized Shares	Shares Issued and Outstanding	Carrying Value	Liquidation Preference
Senior Preferred Stock:				
Series E	12,621	12,621	$ 56,071	$ 56,669
Series F	25,719	25,719	112,365	117,021
Total Senior Preferred Stock	38,340	38,340	$168,436	$ 173,690
Junior Preferred Stock:				
Series A	7,383	7,383	$ 7,009	$ 7,383
Series B	14,037	14,037	18,046	18,248
Series C	3,535	3,535	7,005	7,070
Series D	7,098	7,098	37,934	39,040
Royalty Acquisition	7,074	7,074	11,319	11,319
Series G-1	9,200	7,333	55,000	55,000
Unassigned	38,333	—	—	—
Total Junior Preferred Stock	86,660	46,460	136,313	138,060
Total Preferred Stock	125,000	84,800	$304,749	$ 311,750

For presentation purposes, on the face of the consolidated balance sheets, 38,333,333 of the authorized shares (noted above as Unassigned) have been included in the authorized shares amounts disclosed for Junior Preferred Stock, even though such amounts can be designated for issuance of both Senior Preferred Stock and Junior Preferred Stock.

Senior Preferred Stock

The holders of the Company's Senior Preferred Stock have the following rights, preferences and privileges:

Liquidation—In the event of liquidation, dissolution, merger (where a change of control occurs), sales of all or substantially all of the assets of the Company, or winding up of the Company, either voluntary or involuntary, the holders of Senior Preferred Stock are entitled to be paid an amount equal to the product of the number of shares held by a holder of shares of Senior Preferred Stock and the original issue price of $4.49 and $4.55 per share for Series E and Series F, respectively (subject to equitable adjustment for any stock dividend, combination, split, reclassification, recapitalization or other similar event involving the Senior Preferred Stock) plus all declared and unpaid dividends thereon (collectively, the "Liquidation Amount") before any distribution may be made with respect to the Junior Preferred Stock or the Common Stock.

Conversion—Each share of Senior Preferred Stock is convertible at the option of the holder thereof into the number of fully paid and non-assessable shares of Common Stock that results from dividing the original issue price by the conversion price in effect at the time of the conversion, subject to adjustments for stock splits, stock dividends, reclassifications and like events. For the Senior Preferred Stock, the conversion price is equal to the original issuance price such that the conversion ratio to Common Stock is 1:1 as of all periods presented. The Senior Preferred Stock will automatically convert to Common Stock (i) at any time upon the affirmative election of the holders at least fifty percent of the outstanding shares of such series voting as a single class, or (ii) upon the closing of an underwritten public offering pursuant to an effective registration statement if (x) the per share price is at least one hundred and twenty five percent of the original issue price (as adjusted for stock splits, etc.), (y) the gross cash proceeds to the Company are, for the Series E, at least $40.0 million, and for the Series F, at least $50.0 million, and (z) the Common Stock is listed on a specified national securities exchange.

The issuance price of each series of Senior Preferred Stock exceeded the fair value of Common Stock on the date of issuance and there have been no subsequent adjustments to the conversion prices in the periods presented. Accordingly, no beneficial conversion amounts, measured as the intrinsic value of the conversion feature as of the issuance date, have resulted from issuances of senior preferred stock.

Voting—The holders of Senior Preferred Stock are entitled to vote together with the Common Stock on all matters submitted for a vote of the stockholders. The holder of each share of Senior Preferred Stock has the number of votes equal to the number of shares of Common Stock into which it is convertible. In addition, the holders of Senior Preferred Stock have special series voting rights ("protective provisions") which provide that the Company may not, without the approval of the holders of at least a majority of the outstanding shares of each series of the Senior Preferred Stock, each voting as a separate class, take any of the following actions:

- authorize or issue, or increase or decrease the authorized number of, (other than by redemption or conversion) any shares of Common Stock or Preferred Stock or shares of any new class or series of stock or any other securities convertible into the Company's equity securities ranking (i) on a parity with or senior to the Senior Preferred Stock in liquidation preference, voting or dividends or (ii) senior to the Senior Preferred Stock in rights of redemption;
- redeem or repurchase any capital stock or pay dividends or other distributions with respect to the Company's capital stock (except for acquisitions of Common Stock by the Company pursuant to agreements which permit the Company to repurchase such shares upon termination of services to the Company or in exercise of the Company's right of first refusal upon a proposed transfer);
- take any action or agreement by the Company or its stockholders regarding a reorganization in which the consideration paid or proposed to be paid to the holders of capital stock of the Company implies a price or value per share of the respective series of Senior Preferred Stock less than the Liquidation Amount of such series of Senior Preferred Stock;

- take any action or knowingly fail to take any action that would result in or effectuate the liquidation, dissolution or winding up of the Company; or
- effectuate any amendment, alteration, or repeal of any provision of the certificate of incorporation or bylaws of the Company that alters or changes the voting powers, preferences, or other special rights or privileges, qualifications, limitations, or restrictions of the Senior Preferred Stock.

Dividends—The holders of shares of Senior Preferred Stock are entitled to receive non-cumulative cash dividends at a rate of 8% of the original issue price, per annum, when and if declared by the board of directors, in preference to holders of Junior Preferred Stock and the Common Stock. Subsequent to the payment of the 8% cash dividend, the Senior Preferred Stock holders do not participate to the same extent as, on the same basis as, or at the same rate as and contemporaneously with the Common Stock.

Contingent Redemption—In the event of a reorganization of the Company, the holders of Senior Preferred Stock may be entitled to cash or stock distributions, which may differ from the form of consideration given to the Junior Preferred Stock and Common Stock holders. As a result, the Company has classified the Senior Preferred Stock outside of permanent equity in the accompanying consolidated balance sheets.

Junior Preferred Stock

The holders of the Company's Junior Preferred Stock have the following rights, preferences and privileges:

Liquidation—In the event of liquidation, dissolution, or winding up of the Company, either voluntary or involuntary, (i) the holders of Junior Preferred Stock (other than Royalty Acquisition) are entitled to be paid an amount equal to the product of the number of shares held by a holder of shares of Junior Preferred Stock (other than Royalty Acquisition) and the original issue price of $1.00, $1.30, $2.00, $5.50 and $7.50 per share for Series A, Series B, Series C, Series D and Series G-1, respectively (subject to equitable adjustment for any stock dividend, combination, split, reclassification, recapitalization) plus all declared and unpaid dividends thereon after any distribution has been made with respect to the Senior Preferred Stock and before any distribution may be made with respect to the Royalty Acquisition and Common Stock, and (ii) the holders of Royalty Acquisition are entitled to be paid an amount equal to the product of the number of shares held by a holder of shares of Royalty Acquisition and the original issue price of $1.60 per share for Royalty Acquisition (subject to equitable adjustment for any stock dividend, combination, split, reclassification, recapitalization) plus all declared and unpaid dividends thereon after any distribution has been made with respect to the Senior Preferred Stock and Junior Preferred Stock (other than Royalty Acquisition) and before any distribution may be made with respect to the Common Stock.

Conversion—Each share of Junior Preferred Stock is convertible at the option of the holder thereof into the number of fully paid and non-assessable shares of Common Stock that results from dividing the original issue price by the conversion price in effect at the time of the conversion, subject to adjustments for stock splits, stock dividends, reclassifications and like events. For the Junior Preferred Stock, the conversion price is equal to the original issuance price such that the conversion ratio to Common Stock is 1:1 as of all periods presented. In general, the Junior Preferred Stock will automatically convert to Common Stock upon an initial public offering ("IPO") of Common Stock if (x) the IPO offering price is at (i) $2.00 per share for the Series A, Series B and Royalty Acquisition, and (ii) $2.75 per share for the Series C, and (y) the gross cash proceeds to the Company are at least $10.0 million. However, the Series D and Series G-1 do not have the minimum per share price requirement.

The issuance price of each series of Junior Preferred Stock exceeded the fair value of Common Stock on the date of issuance and there have been no subsequent adjustments to the conversion prices in the periods presented. Accordingly, no beneficial conversion amounts, measured as the intrinsic value of the conversion feature as of the issuance date, have resulted from issuances of Junior Preferred Stock.

Voting—The holders of Junior Preferred Stock are entitled to vote together with the Common Stock on all matters submitted for a vote of the stockholders. The holder of each share of Junior Preferred Stock has the number of votes equal to the number of shares of Common Stock into which it is convertible.

Dividends—There is no prescribed dividend rate for the Junior Preferred Stock, and thus, after payment of the 8% noncumulative cash dividend to the Senior Preferred Stock, the holders of Junior Preferred Stock are entitled to receive cash dividends when and if declared by the Board of Directors of the Company, to the same extent as, on the same basis as, and at the same rate as and contemporaneously with the holders of Common Stock.

Subsidiary Stock and Non-Controlling Interests

FibroGen Europe

FibroGen Europe currently has a total of 42,619,022 shares of Preferred Stock outstanding, of which there are 1,700,845 shares of Series A Preferred Stock, 1,875,000 shares of Series B Preferred Stock, 1,599,503 shares of Series C Preferred Stock, 1,520,141 shares of Series D Preferred Stock, 459,565 shares of Series E Preferred Stock, 5,714,332 shares of Series F Preferred Stock, 9,927,500 shares of Series G Preferred Stock and 19,822,136 shares of Series H Preferred Stock.

The holders of Series A Preferred Stock have the right to exchange their shares of Series A Preferred Stock for shares of Common Stock of FibroGen, Inc. ("FibroGen") pursuant to a specific exchange ratio provided in the exchange option agreements upon certain triggering events, including but not limited to, (i) the initial public offering of FibroGen's Common Stock, (ii) sale of all of FibroGen Europe's business or a transfer of all of FibroGen's recombinant collagen production technology (except to an affiliate of FibroGen or FibroGen Europe), or (iii) sale of substantially all of FibroGen's assets or a merger or consolidation of FibroGen with an unrelated third party after which the stockholder of FibroGen immediately before such transaction do not possess at least fifty percent of the voting power of the surviving corporation immediately after the transaction as the result of their holdings of FibroGen stock.

The holders of Series B Preferred Stock have the right to exchange their shares of Series B Preferred Stock for shares of FibroGen's Common Stock pursuant to a specific exchange ratio provided in their exchange option agreements upon certain triggering events, including but not limited to, (i) the initial public offering of FibroGen's Common Stock, (ii) sale of all of FibroGen Europe's business or a transfer of all of FibroGen's recombinant collagen and gelatin production technology (except to an affiliate of FibroGen or FibroGen Europe), or (iii) sale of substantially all of FibroGen's business operation or assets or a transfer of all of FibroGen's recombinant collagen and gelatin production technology (except to an affiliate) or a merger or consolidation of FibroGen with an unrelated third party after which the stockholder of FibroGen immediately before such transaction do not possess at least fifty percent of the voting power of the surviving corporation immediately after the transaction as the result of their holdings of FibroGen stock.

The holders of Series D Preferred Stock and Series E Preferred Stock have the right to exchange their shares of Series D Preferred Stock and Series E Preferred Stock for shares of FibroGen's Common Stock pursuant to a specific exchange ratio provided in their exchange option agreements upon certain triggering events, which include, but are not limited to, (i) the initial public offering of FibroGen's Common Stock, and (ii) sale of all of FibroGen's assets or a merger or consolidation of FibroGen with an unrelated third party after which the stockholder of FibroGen immediately before such transaction do not possess at least fifty percent of the voting power of the surviving corporation immediately after the transaction as the result of their holdings of FibroGen stock, or (iii) the sale by FibroGen of all or substantially all of its shares of capital stock of FibroGen Europe.

The holders of FibroGen Europe's shares of Preferred Stock ("Preferred Shares") also have the following rights, preferences and privileges:

Dividend Rights—When the assets of FibroGen Europe are distributed (except for distribution in a liquidation), Preferred Shares shall have the same rights to dividend or other forms of distribution as shares of Common Stock of FibroGen Europe. In the event of a merger, holders of Preferred Shares do not have the right to demand FibroGen Europe to redeem all or part of their Preferred Shares. FibroGen Europe may repurchase shares of Common Stock or Preferred Shares for consideration.

Pre-emptive Right—Preferred Shares shall have pre-emptive subscription right in accordance with the Finnish Limited Liability Companies Act if additional shares are issued, option rights are given, or convertible loan is taken, *provided*, *however*, that the foregoing pre-emptive right does not apply to a directed share issue, for which two thirds (2/3) of the voting shares represented at a general meeting of shareholders approve for an important legitimate cause.

Redemption Right—If a Preferred Share can be redeemed by a majority shareholder owning more than ninety percent (90%) of the shares of FibroGen Europe in accordance with the provisions of the Finnish Limited Liability Companies Act, the minority holders of Preferred Shares have the right to request redemption of their shares.

Voting Right—Each share has one vote. Preferred Shares have voting rights only in situations that are specifically provided in the Articles of Association, which include a merger transaction and directed share issue. In addition, Preferred Shares have right to vote in a general shareholder meeting for amending the Articles of Association if the amendment will affect the rights of Preferred Shares.

Conversion Right (1-for-1 basis into Common Stock of FibroGen Europe):

- Voluntary conversion right: Preferred Shares can be converted into common shares upon the written request of a shareholder provided that the conversion is feasible within the maximum and minimum amounts of shares of classes of FibroGen Europe as set forth in its Articles of Association. Such request can be withdrawn before the notification of conversion is filed with the Finnish Trade Register.
- Compulsory conversion right: Preferred Shares will be converted into common shares if (i) FibroGen Europe's shares are listed in a stock exchange or other trading system in the European Economic Area, or (ii) FibroGen Europe's recombinant collagen and gelatin production technology is being put into commercial use in the area of EU and certain other European states. Commercial use means there is income generated from the first commercial sale of the products incorporating the above mentioned technology and does not include licence fees, development financing, milestone payments or income from test products or equipment used in research. The board of directors of FibroGen Europe shall notify the shareholders of the compulsory conversion in writing, and the shareholders shall request to convert their shares within the timeframe provided in the notification. Should the shareholders fail to make the conversion request within the time limit, FibroGen Europe may redeem the shares of such shareholders.

Liquidation Right—In the event of a dissolution of FibroGen Europe, holders of Preferred Shares are entitled to be paid in an amount equal to the subscription price of the shares before any distribution is made to holders of common shares. Among holders of Preferred Shares, holders of shares of Series F Preferred Stock are entitled to be paid in an amount equal to the subscription price of Series F Preferred Stock before any distribution is made to holders of other Preferred Shares.

FibroGen China

During the years ended December 31, 2012 and 2013 FibroGen China, issued a total of 6,758,000 Series A Preference Shares. The holders of the FibroGen China Series A Preference Shares have the following rights, preferences and privileges:

Liquidation—In the event of liquidation, dissolution, or winding up of the Company, either voluntary or involuntary, including by means of a merger, the holders of FibroGen China Series A Preference Shares are entitled to be paid an amount equal to the product of the number of shares held by a holder of shares of FibroGen China Series A Preference Shares and the original issue price of $1.00 (subject to equitable adjustment for any stock dividend, combination, split, reclassification, recapitalization) plus all declared and unpaid dividends thereon.

Conversion—Each share of FibroGen China Series A Preference Shares is convertible into the number of fully paid and non-assessable shares of Common Stock of FibroGen China that results from dividing the original issue price by the conversion price in effect at the time of the conversion, subject to adjustments for

stock splits, stock dividends, reclassifications and like events. The FibroGen China Series A Preference Shares have a conversion price that is equal to the original issuance price such that the conversion ratio to FibroGen China Common Stock is 1:1 as of all periods presented.

Voting—The holders of FibroGen China Series A Preference Shares are entitled to vote together with the FibroGen China Common Stock holders on all matters submitted for a vote of the stockholders. The holder of each share of FibroGen China Series A Preference Shares has the number of votes equal to the number of shares of FibroGen China Common Stock into which it is convertible.

Dividends—The holders of FibroGen China Series A Preference Shares are entitled to receive cash dividends when and if declared, at a rate of 6%.

Non-Controlling Interests

Non-controlling interest positions related to the issuance of subsidiary stock as described above are reported as a separate component of consolidated equity from the equity attributable to the Company's stockholders at December 31, 2012 and 2013, and as of September 30, 2014. In addition, the Company does not allocate losses to the non-controlling interests as the outstanding shares representing the non-controlling interest do not represent a residual equity interest in the subsidiary.

Common Stock

Each share of Common Stock is entitled to one vote. The holders of Common Stock are also entitled to receive dividends whenever funds are legally available and when declared by the board of directors, subject to the prior rights of holders of all classes of stock outstanding.

Shares of Common Stock reserved for future issuance relate to FibroGen Europe preferred stock, FibroGen China Preferred stock, warrants, and stock options as follows (in thousands):

	As of December 31, 2013	As of September 30, 2014 (unaudited)
Common Stock	13,201	13,509
Convertible Preferred Stock:		
Series A Preferred Stock	2,953	2,953
Series B Preferred Stock	5,615	5,615
Royalty Acquisition	2,830	2,830
Series C Preferred Stock	1,414	1,414
Series D Preferred Stock	2,839	2,839
Series E Preferred Stock	5,048	5,048
Series F Preferred Stock	10,288	10,288
Series G-1 Preferred Stock	2,933	2,933
Stock Options Outstanding	11,084	12,970
Common Stock Warrants	173	173
FibroGen Europe Shares	959	959
Stock Options Available for Grant	1	7,606
Total Shares of Common Stock Reserved	59,338	69,137

Stock Plans

Under the 2005 Stock Plan, the Company may issue shares of Common Stock and options to purchase Common Stock and other forms of equity incentives to employees, directors and consultants. Options granted under the 2005 Stock Plan may be incentive stock options or nonqualified stock options. Incentive stock options ("ISO")

may be granted only to employees and officers of the Company. Nonqualified stock options ("NSO") and stock purchase rights may be granted to employees, directors and consultants. The board of directors has the authority to determine to whom options will be granted, the number of options, the term and the exercise price. Options are to be granted at an exercise price not less than fair market value for an ISO or an NSO. Options generally vest over four years. Options expire no more than 10 years after date of grant.

Certain Common Stock option holders have the right to exercise unvested options, subject to a right held by the Company to repurchase the stock, at the original exercise price, in the event of voluntary or involuntary termination of employment of the stockholder. The shares are generally released from repurchase provisions ratably over four years. The Company accounts for the cash received in consideration for the early exercised options as a liability. At December 31, 2013, and September 30, 2014, no shares of Common Stock were subject to repurchase by the Company.

Stock option transactions, including forfeited options granted under the 2005 Stock Plan as well as prior plans, are summarized below:

	Options Available for Grant	Number of Options Outstanding	Weighted-Average Exercise Price
Balance at December 31, 2011	202,565	8,765,646	$ 2.98
Granted	(2,182,851)	2,182,851	4.69
Authorized	2,200,000	—	
Exercised	—	(49,800)	3.02
Forfeited	179,284	(179,284)	4.15
Balance at December 31, 2012	398,998	10,719,413	$ 3.31
Granted	(561,010)	561,010	11.32
Exercised	—	(34,126)	2.46
Expired	20,528	(20,528)	2.81
Forfeited	141,725	(141,725)	6.76
Balance at December 31, 2013	241	11,084,044	$ 3.68
Granted	(2,264,667)	2,264,667	14.55
Authorized	9,800,000	—	
Exercised (unaudited)	—	(307,777)	3.01
Expired (unaudited)	9,775	(9,775)	2.04
Forfeited (unaudited)	60,755	(60,755)	10.99
Balance at September 30, 2014 (unaudited)	7,606,104	12,970,404	$ 5.56
Vested and expected to vest, December 31, 2013		10,973,831	$ 3.63
Vested and expected to vest, September 30, 2014 (unaudited)		12,806,392	$ 5.46

Stock options outstanding and exercisable as of December 31, 2013 are as follows:

	Options Outstanding			Options Vested		
Exercise Price	Number of Options	Weighted-Average Remaining Contractual Life (In years)	Aggregate Intrinsic Value (in thousands)	Number of Options	Weighted-Average Exercise Price	Aggregate Intrinsic Value (in thousands)
$ 2.00	374,449	1.86	$ 4,400	374,449	$ 2.00	$ 4,400
2.35	1,400,497	4.34	15,966	1,400,497	2.35	15,966
2.90	4,762,372	6.49	51,672	4,510,765	2.90	48,942
3.50	1,484,121	7.45	15,212	983,243	3.50	10,078
3.60	572,000	5.19	5,806	572,000	3.60	5,806
3.93	264,148	5.94	2,594	253,873	3.93	2,493
4.03	770,965	3.38	7,494	770,965	4.03	7,494
5.00	24,000	2.74	210	24,000	5.00	210
5.95	848,322	8.49	6,617	380,029	5.95	2,964
7.68	64,160	8.70	389	20,052	7.68	122
9.78	325,750	9.04	1,293	116,293	9.78	462
13.73	178,260	9.75	4	—	13.73	—
13.75	15,000	9.93	—	—	13.75	—
$ 3.68	11,084,044	6.18	$ 111,657	9,406,166	$ 3.23	$ 98,937

The Company has computed the aggregate intrinsic value amounts disclosed in the above table based upon the difference between the original exercise price of the options and the Company's estimate of the deemed fair value of the Company's common stock at December 31, 2013. The total intrinsic value of options exercised for the years ended December 31, 2012 and 2013, and for the nine months ended September 30, 2014 was approximately $0.2 million, $0.3 million and $3.6 million (unaudited), respectively.

Stock-Based Compensation

Stock-based compensation related to options granted is allocated to research and development and general and administrative expense for the periods ended December 31 and September 30 was as follows (in thousands):

	Years Ended December 31,		Nine Months Ended September 30, (unaudited)	
	2012	2013	2013	2014
Research and development	$ 2,277	$ 1,925	$ 1,446	$ 5,775
General and administrative	2,284	1,519	1,170	3,959
Total stock-based compensation expense	$ 4,561	$ 3,444	$ 2,616	$ 9,734

The Company, in making its determinations of the fair value of its Common Stock, considered a variety of quantitative and qualitative factors, including (i) the fair market value of the stock of comparable publicly-traded companies, (ii) net present value of the Company's projected earnings, (iii) any third party transactions involving the Company's convertible preferred stock, (iv) liquidation preferences of the Company's preferred stock and the likelihood of conversion of the preferred stock, (v) changes in the Company's business operations, financial condition and results of operations over time, including cash balances and burn-rate, (vi) the status of new product development and (vii) general financial market conditions.

The Company estimates the fair value of stock options using the Black-Scholes option valuation model. The fair value of employee stock options is being amortized on a straight-line basis over the requisite service period of the awards. The estimated weighted-average fair value of the employee stock options granted during the years ended December 31, 2012 and 2013 was $3.92 per share and $6.19 per share, respectively.

The fair value of employee stock options was estimated using the following assumptions:

Expected Term. Expressed as a weighted-average, the expected life of the options is based on the average period the stock options are expected to be outstanding and was based on the Company's historical information of the option exercise patterns and post-vesting termination behavior.

Expected Volatility. Since the Company is a private entity to date with no historical data regarding the volatility of its Common Stock, the expected volatility is based upon the historical volatility of comparable public entities. In evaluating comparable companies, the Company considered factors such as industry, stage of life cycle, size and duration as a public company.

Risk-Free Interest Rate. Expressed as a weighted-average, the risk-free interest rate assumption is based on the U.S. Treasury instruments whose term was consistent with the expected term of the Company's stock options.

Expected Dividend Yield. The Company has never declared or paid any cash dividends and does not plan to pay cash dividends in the foreseeable future.

The weighted-average assumptions used to estimate the fair value of stock options using the Black-Scholes option valuation model were as follows:

	Years Ended December 31,	
	2012	2013
Expected term (in years)	4.5	4.1
Expected volatility	78.1%	71.6%
Risk-free interest rate	0.7%	0.8%
Expected dividend yield	0.0%	0.0%

As of December 31, 2013 and September 30, 2014 there was $5.2 million and $15.0 million (unaudited), respectively of total unrecognized compensation costs, net of estimated forfeitures, related to non-vested stock option awards granted that will be recognized on a straight-line basis over the weighted-average period of 2.1 years and 2.2 years (unaudited), respectively.

Warrants

The following warrants to purchase shares of Common Stock were issued in connection with certain facility and equipment lease financing arrangements and are outstanding at December 31, 2012 and 2013 and September 30, 2014 (unaudited):

Year of Issuance	Number of shares	Exercise Price per share	Reason for Issuance	Expiration date
1995	26,880	$ 3.13	Issued in connection with equipment lease	One year after initial public offering or upon merger or sale of the Company's assets, whichever occurs first
1996	73,600	$ 4.38	Issued in connection with lease agreement	Five years after initial public offering or upon merger or sale of the Company's assets, whichever occurs first
1997	17,256	$ 4.38	Issued in connection with equipment lease	One year after initial public offering or upon merger or sale of the Company's assets, whichever occurs first
2000	55,380	$ 15.00	Issued in connection with lease agreement	Five years after initial public offering or upon merger or sale of the Company's assets, whichever occurs first

Note 10—Net Income (Loss) Per Share

The Company applies the two-class method to calculate basic and diluted net income (loss) per share of Common Stock. The Junior Preferred Stock are participating securities due to their dividend rights and the Senior Preferred Stock has stated dividend rates. The two-class method is an earnings allocation method under which earnings per share is calculated for Common Stock considering a participating security's rights to undistributed earnings as if all such earnings had been distributed during the period. The Company's participating securities are not included in the computation of net income (loss) per share in periods of net loss because the preferred stockholders have no contractual obligation to participate in losses.

The following table presents the calculation of basic and diluted net loss per share (in thousands, except per share data):

	Years Ended December 31,		Nine Months Ended September 30,	
	2012	2013	2013	2014
			(unaudited)	
Net income (loss)	$(32,571)	$(14,943)	$ 11,830	$ (8,944)
Less: Undistributed earnings allocated to preferred stockholders	—	—	(11,245)	—
Net income (loss) attributable to common stockholders	(32,571)	(14,943)	585	(8,944)
Weighted-average shares used to compute basic net income (loss) per share	13,128	13,186	13,181	13,355
Weighted-average shares used to compute diluted net income (loss) per share	13,128	13,186	19,919	13,355
Basic net income (loss) per share	$ (2.48)	$ (1.13)	$ 0.04	$ (0.67)
Diluted net income (loss) per share	$ (2.48)	$ (1.13)	$ 0.03	$ (0.67)

The following securities were excluded from the calculation of diluted net loss per share because their effect would have been anti-dilutive for the periods presented (in thousands):

	Years Ended December 31,		Nine Months Ended September 30,	
	2012	2013	2013	2014
			(unaudited)	
Senior Preferred Stock	15,336	15,336	15,336	15,336
Junior Preferred Stock	18,584	18,584	18,584	18,584
Employee stock options	10,719	11,084	—	12,970
Warrants	173	173	—	173
FibroGen Europe Preferred stock	959	959	—	959
	45,771	46,136	33,920	48,022

Unaudited Pro Forma Net Loss per Share

Pro forma basic and diluted net loss per share were computed to give effect to the automatic conversion of all of the Senior and Junior Preferred Stock using the as-if converted method into common shares as of the beginning of the first period presented or the original date of issuance, if later. Pro forma diluted net loss per share excludes the dilutive effect of employee stock options and warrants using the treasury stock method, as well as the effect of the conversion of preferred stock held by investors of FibroGen Europe into a maximum total of 958,996 shares of FibroGen, Inc. common stock.

The following table presents the calculation of basic and diluted pro forma net loss per share (in thousands, except per share data):

	Year Ended December 31, 2013	Nine Months Ended September 30, 2014
Net loss	$ (14,943)	$ (8,944)
Basic shares:		
Weighted-average shares used to compute basic net loss per share	13,186	13,355
Pro forma adjustment to reflect assumed conversion of Senior and Junior Preferred Stock to occur upon consummation of the Company's initial public offering	33,920	33,920
Weighted-average shares used to compute basic and diluted pro forma net loss per share	47,106	47,275
Weighted-average shares used to compute diluted pro forma net loss per share	47,106	47,275
Pro forma net loss per share:		
Basic	$ (0.32)	$ (0.19)
Diluted	$ (0.32)	$ (0.19)

Note 11—FibroGen, Inc. 401(k) Plan

Substantially all of the Company's full-time United States of America-based employees are eligible to make contributions to the Company's 401(k) Plan. Under this plan, participating employees may defer up to 20% of their pretax salary during 2013, but not more than statutory limits. The Company may elect to match employee contributions; no such matching contributions were made for the years ended December 31, 2012 and 2013, or the nine months ended September 30, 2013. Matching contributions of $1.6 million (unaudited) were made during the nine months ended September 30, 2014.

Note 12—Income Taxes

The components of loss before income taxes are as follows (in thousands):

	Years ended December 31,	
	2012	2013
Domestic	$(20,399)	$ (3,107)
Foreign	(12,272)	(11,836)
Loss before provision for income taxes	$(32,671)	$(14,943)

The benefit from income taxes consists of the following at December 31 (in thousands):

	Years ended December 31,	
	2012	2013
Current:		
Federal	$ —	$ —
State	(2)	—
Foreign	—	—
Total current	(2)	—
Deferred:		
Federal	96	—
State	6	—
Foreign	—	—
Total deferred	102	—
Total benefit from income taxes	$ 100	$ —

The following is a reconciliation between the statutory federal income tax rate and the Company's effective tax rate:

	Years ended December 31,	
	2012	2013
Tax at statutory federal rate	34.0 %	34.0 %
State tax	0.0 %	0.0 %
Stock compensation expense	(2.9)%	(5.7)%
Deferred tax expense on unrealized gain (loss) on investments	0.3 %	— %
Net operating losses not benefitted	(17.8)%	(1.6)%
Foreign net operating losses not benefitted	(12.8)%	(26.9)%
Other	(0.5)%	0.2 %
Total	0.3 %	— %

Significant components of the Company's deferred tax assets are as follows (in thousands):

	As of December 31,	
	2012	2013
Federal and state net operating loss carryforwards	$ 45,237	$ 43,526
Foreign net operating loss carryforwards	4,777	3,603
Tax credit carryforwards	17,609	20,369
Deferred revenue	1,719	1,179
Reserves and accruals	6,406	8,460
Other	1,140	973
Subtotal	76,888	78,110
Less: Valuation allowance	(70,955)	(73,144)
Net deferred tax assets	5,933	4,966
Deferred tax liabilities:		
Fixed assets	(4,412)	(4,440)
Unrealized gain on investments	(1,521)	(526)
Net deferred tax liabilities	(5,933)	(4,966)
Total net deferred tax assets	$ —	$ —

A valuation allowance has been provided to reduce the deferred tax assets to an amount management believes is more likely than not to be realized. Expected realization of the deferred tax assets for which a valuation allowance has not been recognized is based on upon the reversal of existing temporary differences and future taxable income.

The valuation allowance increased by $1.0 million and $2.1 million for the years ended December 31, 2012 and 2013, respectively. Due to uncertainty surrounding the realization of the favorable tax attributes in the future returns, the Company has established a valuation allowance against its otherwise recognizable net deferred tax assets.

At December 31, 2013, the Company had net operating loss carryforwards available to offset future taxable income of approximately $115.4 million and $171.7 million for federal and state tax purposes, respectively. These carryforwards will begin to expire in 2024 for federal and 2014 for state purposes, if not utilized before these dates. The Company also had foreign net operating loss carryforwards of approximately $17.3 million which expire between 2014 and 2023 if not utilized.

At December 31, 2013, the Company had approximately $18.4 million of federal and $14.0 million of California research and development tax credit and other tax credit carryforwards available to offset future taxable income. The federal credits begin to expire in 2018 and the California research credits have no expiration dates.

The Company tracks a portion of its deferred tax assets attributable to stock option benefits in a separate memorandum account. Therefore, these amounts are not included in the Company's gross or net deferred tax assets. The benefit of these stock options will not be recorded in equity unless it reduces taxes payable. As of December 31, 2013, the portion of the federal and state net operating losses related to stock option benefits was approximately $1.3 million.

Utilization of net operating losses and tax credit carryforwards may be limited by the "ownership change" rules, as defined in Section 382 of the Internal Revenue Code (any such limitation, a "Section 382 limitation"). Similar rules may apply under state tax laws. The Company has performed an analysis to determine whether an "ownership change" occurred from inception to December 31, 2013. Based on this analysis, management determined that the Company did experience historical ownership changes of greater than 50% during this period. Therefore, the utilization of a portion of the Company's net operating losses and credit carryforwards is currently limited. However, these Section 382 limitations are not expected to result in a permanent loss of the net operating losses and credit carryforwards. As such, a reduction of the Company's gross deferred tax asset for its net operating loss and tax credit carryforwards is not necessary prior to considering the valuation allowance. In the event the Company experiences any subsequent changes in ownership, the amount of net operating losses and research and development credit carryforwards useable in any taxable year could be limited and may expire unutilized.

Uncertain Tax Positions

The Company had unrecognized tax benefits of approximately $13.5 million as of December 31, 2013. These unrecognized tax benefits, if recognized, would not affect the effective tax rate. There are no interest or penalties accrued as of December 31, 2012 or 2013.

A reconciliation of the beginning and ending amounts of unrecognized income tax benefits during the years ended December 31, 2012 and 2013 is as follows (in thousands):

	Federal and State
Balance as of January 1, 2012	$ 12,685
Decrease due to prior positions	(216)
Increase due to current year position	76
Balance as of December 31, 2012	12,545
Increase due to prior positions	294
Increase due to current year position	680
Balance as of December 31, 2013	$ 13,519

Unrecognized tax benefits may change during the next twelve months for items that arise in the ordinary course of business. The Company does not anticipate a material change to its unrecognized tax benefits over the next twelve months that would affect the Company's effective tax rate.

The Company classifies interest and penalties as a component of tax expense, if any.

The Company files income tax returns in the U.S. federal jurisdiction, U.S. state and other foreign jurisdictions. The U.S. federal and U.S. state taxing authorities may choose to audit tax returns for tax years beyond the statute of limitation period due to significant tax attribute carryforwards from prior years, making adjustments only to carryforward attributes. The foreign statute of limitation generally remains open from 2007 to 2013. The Company is not currently under audit in any tax jurisdiction.

Note 13—Related Party Transactions

On February 16, 2012, the Company's Chief Executive Officer and Chairman of the Board, Thomas B. Neff, repaid a June 2002 stockholder note that was issued by the Company in connection with its previous policy of allowing officers of the Company to exercise stock options to purchase Company Common Stock using a promissory note. The note related to the exercise of Mr. Neff's outstanding stock options prior to 2002 and was repaid in accordance with its terms.

Astellas is an equity investor in the Company and considered a related party. During the years ended December 31, 2012 and 2013 and the nine months ended September 30, 2013 and 2014, the Company recorded revenue related to collaboration agreements with Astellas of $65.1 million, $25.7 million, $21.6 million (unaudited) and $12.5 million (unaudited), respectively. During the years ended December 31, 2012 and 2013 and the nine months ended September 30, 2013 and 2014, the Company recorded expense related to collaboration agreements with Astellas of $0.3 million, $4.0 million, $1.9 million (unaudited) and $7.1 million (unaudited), respectively.

As of December 31, 2012 and 2013 and as of September 30, 2014, accounts receivable from Astellas were $8.8 million, $6.0 million and $4.2 million (unaudited), respectively, and amounts due to Astellas were $1.1 million, $2.8 million and $2.7 million (unaudited), as of the same periods. The amounts due are included in Accrued liabilities on the consolidated balance sheets.

On July 11, 2012, Julian N. Stern (trustee of Stern Family Trust) and Roberto Pedro Rosenkranz (President of Grama Ventures LLC), who are also members of the Company's board of directors, purchased 500,000 shares and 350,000 shares, respectively, of FibroGen China Series A Preference Shares at a purchase price of $1.00 per share. In addition, on December 28, 2012, Grama Ventures purchased an additional 100,000 shares of FibroGen China Series A Preference Shares at a purchase price of $1.00 per share.

Note 14—Segment and Geographic Information

The Company has determined that the chief executive officer is the chief operating decision maker ("CODM"). The CODM reviews financial information presented for the Company's various clinical trial programs as well as results on a consolidated basis. License, milestone and collaboration services revenues received are not allocated to various programs for purposes of determining a profit measure and resource allocation decisions are made by the CODM based primarily on consolidated results. As such, the Company has concluded that it operates as one segment. Supplemental enterprise-wide information has been presented below.

Geographic Revenues

Geographic revenues, which are based on the bill to region, are as follows (in thousands):

	Years Ended December 31,		Nine Months Ended September 30,	
	2012	2013	2013	2014
			(unaudited)	
Europe	$ —	$ 76,478	$ 68,199	$ 108,978
Japan—Related party	65,120	25,661	21,563	12,473
All Other	813	31	18	45
Total revenue	$ 65,933	$ 102,170	$ 89,780	$ 121,496

Geographic Long-Lived Assets

Property and equipment, net by geographic location are as follows (in thousands):

	December 31,		September 30,
	2012	2013	2014
			(unaudited)
United States	$123,422	$118,336	$ 116,731
China	242	11,562	15,822
Total Property and equipment	$123,664	$129,898	$ 132,553

Customer Concentration

The following collaboration partners accounted for more than 10% of the Company's total revenue or accounts receivable:

	As of or for the year ended December 31,			
	Percentage of Revenue		Percentage of Accounts Receivable	
	2012	2013	2012	2013
Astellas—Related party	99%	25%	100%	34%
AstraZeneca	— %	75%	— %	66%

	Percentage of Revenue Nine Months Ended September 30,		Percentage of Accounts Receivable September 30,
	2013	2014	2014
		(unaudited)	
Astellas—Related party	24%	10%	20%
AstraZeneca	76%	90%	80%

Note 15—Subsequent Events

The Company has evaluated subsequent events that occurred after December 31, 2013 through June 11, 2014, the date that the audited consolidated financial statements were issued. Additionally, the Company evaluated transactions and other events that occurred through November 10, 2014 for the purposes of recognition of subsequent events and disclosure of unrecognized subsequent events.

Note 16—Subsequent Events (unaudited)

The Company has evaluated subsequent events that occurred after September 30, 2014 through October 29, 2014, the date that the unaudited interim consolidated financial statements were issued. Additionally, the Company evaluated transactions and other events that occurred through November 10, 2014 for the purpose of recognition of subsequent events and disclosure of unrecognized subsequent events.

On October 20, 2014, the Company entered into an agreement with AstraZeneca under which AstraZeneca has agreed to purchase shares of the Company's common stock with an aggregate purchase price of $20 million in a separate private placement concurrent with the completion of the Company's public offering at a price per share equal to the initial public offering price. The closing of the Company's public offering is not conditioned upon the closing of such concurrent private placement, and if the offering is not completed by December 1, 2015, then AstraZeneca remains obligated to pay the Company $20 million in cash no later than December 15, 2015.

On October 21, 2014, the Compensation Committee of the Board approved the grant of stock options to purchase an aggregate of 1,686,716 shares of our common stock and the grant of 560,278 restricted stock units to certain of our employees and directors pursuant to the 2014 Plan. The grant date for these awards will be the date the registration statement for the Company's initial public offering of its securities becomes effective and, with respect to the stock option grants, the per share exercise price will be equal to the initial public offering price. Of these awards, certain officers were granted, in the aggregate, (1) stock options to purchase an aggregate of 312,000 shares of our common stock (with a per share exercise price equal to the initial public offering price) pursuant to our change in control form of option grant notice and agreement, and (2) an aggregate of 156,000 restricted stock units pursuant to our standard from of restricted stock unit grant notice and agreement.

7,100,000 Shares

Common Stock

Goldman, Sachs & Co.

Citigroup

Leerink Partners

RBC Capital Markets

Stifel

William Blair

Through and including , 2014 (the 25th day after the date of this prospectus), all dealers effecting transactions in these securities, whether or not participating in this offering, may be required to deliver a prospectus. This is in addition to a dealer's obligation to deliver a prospectus when acting as an underwriter and with respect to an unsold allotment or subscription.

PART II

INFORMATION NOT REQUIRED IN PROSPECTUS

Item 13. Other Expenses of Issuance and Distribution

The following table sets forth all expenses, other than the underwriting discounts and commissions, payable by us in connection with the sale of the common stock being registered. All the amounts shown are estimates except the SEC registration fee, the FINRA filing fee and the NASDAQ Global Select Market listing fee.

	Amount to be Paid
SEC registration fee	$ 18,027
FINRA filing fee	23,711
NASDAQ listing fee	200,000
Printing and engraving expenses	453,000
Legal fees and expenses	2,139,000
Accounting fees and expenses	970,500
Transfer agent and registrar fees and expenses	3,500
Total	$ 3,807,738

Item 14. Indemnification of Directors and Officers

Section 145 of the Delaware General Corporation Law authorizes a court to award, or a corporation's board of directors to grant, indemnity to directors and officers under certain circumstances and subject to certain limitations. The terms of Section 145 of the Delaware General Corporation Law are sufficiently broad to permit such indemnification under certain circumstances for liabilities, including reimbursement for expenses incurred, arising under the Securities Act of 1933, as amended, or the Securities Act.

Our amended and restated certificate of incorporation that will be in effect upon the completion of this offering provides for indemnification of our directors, officers, employees and other agents to the maximum extent permitted by the Delaware General Corporation Law, and our amended and restated bylaws that will be in effect upon the completion of this offering provide for indemnification of our directors, officers, employees and other agents to the maximum extent permitted by the Delaware General Corporation Law.

We have entered into indemnification agreements with our directors and officers whereby we have agreed to indemnify our directors and officers to the fullest extent permitted by law, including indemnification against expenses and liabilities incurred in legal proceedings to which the director or officer was, or is threatened to be made, a party by reason of the fact that such director or officer is or was a director, officer, employee or agent of FibroGen, provided that such director or officer acted in good faith and in a manner that the director or officer reasonably believed to be in, or not opposed to, the best interest of FibroGen. At present, there is no pending litigation or proceeding involving a director or officer of FibroGen regarding which indemnification is sought, nor is the registrant aware of any threatened litigation that may result in claims for indemnification.

We maintain insurance policies that indemnify our directors and officers against various liabilities arising under the Securities Act and the Exchange Act of 1934, as amended, that might be incurred by any director or officer in his capacity as such.

The underwriters are obligated, under certain circumstances, pursuant to the underwriting agreement to be filed as Exhibit 1.1 hereto, to indemnify us, our officers and directors against liabilities under the Securities Act.

Item 15. Recent Sales of Unregistered Securities

Since January 1, 2011, we have made the following sales of unregistered securities:

(1) We granted stock options under our 2005 Plan to purchase an aggregate of 5,543,008 shares of our common stock having exercise prices ranging from $2.90 to $14.58 per share to our employees, directors and consultants.

(2) We have issued and sold to our employees an aggregate of 562,790 shares of our common stock upon the exercise of options under our 2005 Plan at exercise prices ranging from $2.00 to $14.58 per share, for an aggregate amount of approximately $1,779,240.

(3) We have granted stock appreciation rights for an aggregate of 18,000 shares of our common stock under our 2005 Plan to our employees, directors and consultants.

(4) We have issued and sold to our employees an aggregate of 50,338 shares of our common stock upon the exercise of options under our 1999 Plan at exercise prices ranging from $1.38 to $2.00 per share, for an aggregate amount of approximately $92,051.

The offers, sales and issuances of the securities described in paragraphs (1), (2), (3) and (4) were exempt from registration under either (a) Section 4(a)(2) of the Securities Act in that the transactions were by an issuer not involving any public offerings or under (b) compensatory benefit plans and contracts relating to compensation as provided under Rule 701 promulgated under the Securities Act.

Item 16. Exhibits and Financial Statement Schedule

(a) Exhibits.

The following exhibits are included herein or incorporated herein by reference:

Exhibit Number	Description of Document
1.1	Form of Underwriting Agreement.
3.1	Certificate of Incorporation of the Registrant, as amended and as presently in effect.
3.2*	Bylaws of the Registrant, as amended and as presently in effect.
3.3*	Form of Amended and Restated Certificate of Incorporation of the Registrant, to be in effect upon completion of this offering.
3.4*	Form of Amended and Restated Bylaws of the Registrant, to be in effect upon completion of this offering.
4.1	Form of Common Stock Certificate
4.2*	Investor Rights Agreement by and among the Registrant and certain of its stockholders, dated as of December 1995.
4.3*	Investor Rights Agreement by and among the Registrant and certain of its stockholders, dated as of February 20, 1998.
4.4*	Investor Rights Agreement by and among the Registrant and certain of its stockholders, dated as of May 12, 2000, as amended in December 2004 and September 2005.
4.5*	Investor Rights Agreement by and among the Registrant and certain of its stockholders, dated as of December 22, 2004, as amended in September 2005.
4.6*	Investor Rights Agreement by and among the Registrant and certain of its warrant holders, dated as of June 3, 1999.

Exhibit Number	Description of Document
4.7*	Investor Rights Agreement by and among the Registrant and certain of its warrant holders, dated as of February 8, 2000.
4.8*	Warrant to Purchase 67,200 Shares of Common Stock issued to Lease Management Services, Inc., dated as of June 6, 1995; as amended by Amendment to Warrant to Purchase 67,200 Shares of Common Stock by and between the Registrant and Phoenixcor, Inc. (as successor in interest to Lease Management Services, Inc.), dated as of June 5, 2001.
4.9*	Warrant to Purchase 43,140 Shares of Common Stock issued to Lease Management Services, Inc., dated as of December 11, 1997; as amended by Amendment to Warrant to Purchase 43,140 Shares of Common Stock by and between the Registrant and General Electric Capital Corporation (as successor in interest to Lease Management Services, Inc.), dated as of December 9, 2003.
4.10*	Warrant to Purchase 4,000 Shares of Common Stock issued to Laurence S. Shushan and Magdalena Shushan, Trustees of The Laurence and Magdalena Shushan Family Trust, dated as of June 3, 1999.
4.11*	Warrant to Purchase 180,000 Shares of Common Stock issued to Slough Estates USA, Inc., dated as of June 3, 1999.
4.12*	Warrant to Purchase 11,076 Shares of Common Stock issued to Bristow Investments, L.P, dated as of February 8, 2000.
4.13*	Warrant to Purchase 2,769 Shares of Common Stock issued to Laurence S. Shushan and Magdalena Shushan, Trustees of The Laurence and Magdalena Shushan Family Trust, dated as of February 8, 2000.
4.14*	Warrant to Purchase 124,605 Shares of Common Stock issued to Slough Estates USA, Inc., dated as of February 8, 2000.
4.15*	Shareholders' Agreement by and among FibroGen China Anemia Holdings, Ltd. and certain of its shareholders, dated as of July 11, 2012.
4.16*	Share Purchase Agreement by and among FibroGen China Anemia Holdings, Ltd. and the purchasers party thereto, dated as of July 11, 2012.
4.17*	Common Stock Purchase Agreement by and between the Registrant and AstraZeneca AB, dated as of October 20, 2014.
5.1*	Opinion of Cooley LLP regarding legality.
10.1+*	FibroGen, Inc. Amended and Restated 1994 Stock Plan, and forms of agreement thereunder.
10.2(i)+*	FibroGen, Inc. Amended and Restated 1999 Stock Plan.
10.2(ii)+*	Form of incentive stock option agreement under the FibroGen, Inc. Amended and Restated 1999 Stock Plan.
10.2(iii)+*	Forms of 2010 and 2013 amendments to the form of incentive stock option agreement under the FibroGen, Inc. Amended and Restated 1999 Stock Plan applicable to options amended pursuant to the Registrant's 2010 amendment and exchange offer.
10.3(i)+*	FibroGen, Inc. Amended and Restated 2005 Stock Plan.
10.3(ii)+*	Forms of stock option agreement, restricted stock purchase agreement and stock appreciation right agreement under the FibroGen, Inc. Amended and Restated 2005 Stock Plan.
10.3(iii)+*	Form of stock option agreement under the FibroGen, Inc. Amended and Restated 2005 Stock Plan applicable to options exchanged pursuant to the Registrant's 2010 amendment and exchange offer.

Exhibit Number	Description of Document
10.3(iv)+*	Form of 2010 amendment to the form of stock option agreement under the FibroGen, Inc. Amended and Restated 2005 Stock Plan applicable to options amended pursuant to the Registrant's 2010 amendment and exchange offer.
10.3(v)+*	Form of 2013 amendment to the form of stock option agreement under the FibroGen, Inc. Amended and Restated 2005 Stock Plan applicable to options amended or exchanged pursuant to the Registrant's 2010 amendment and exchange offer.
10.4+	FibroGen, Inc. 2014 Equity Incentive Plan, and forms of agreement thereunder, to be in effect upon completion of this offering.
10.5+	FibroGen, Inc. 2014 Employee Stock Purchase Plan, to be in effect upon completion of this offering.
10.6+*	FibroGen, Inc. Non-Employee Director Compensation Policy.
10.7+*	FibroGen, Inc. 2014 Employee Compensation and Bonus Plan.
10.8*	Lease Agreement by and between the Registrant and X-4 Dolphin LLC, dated as of September 22, 2006; as amended by First Amendment to Lease by and between the Registrant and X-4 Dolphin LLC, dated as of October 10, 2007; as amended by Second Amendment to Lease by and between the Registrant and X-4 Dolphin LLC, dated as of June 29, 2009; as amended by Third Amendment to Lease by and between the Registrant and Are-San Francisco No. 43, LLC (as successor in interest to X-4 Dolphin LLC), dated as of May 19, 2011; as amended by Fourth Amendment to Lease by and between the Registrant and Are-San Francisco No. 43, LLC, dated as of September 8, 2011.
10.9*	Lease for Premises in Beijing BDA Biomedical Park by and among Beijing FibroGen Medical Technology Development Co., Ltd., Beijing Economic and Technology Investment Development Parent Company and Beijing BDA International Biological Pharmaceutical Investment Management Co., Ltd., effective as of February 1, 2013, as supplemented by the Supplementary Agreement to Lease of Premises in Beijing BDA Biomedical Park by and among Beijing FibroGen Medical Technology Development Co., Ltd., Beijing Economic Technology Investment Development Parent Company and Beijing BDA International Biological Pharmaceutical Investment Management Co., Ltd., dated as of January 30, 2013.
10.10+*	Form of Employment Offer Letter.
10.11†*	Collaboration Agreement, by and between the Registrant and Astellas Pharma Inc., effective as of June 1, 2005.
10.12†*	Anemia License and Collaboration Agreement, by and between the Registrant and Astellas Pharma Inc., effective as of April 28, 2006.
10.13†*	Amendment to Anemia License and Collaboration Agreement, by and between the Registrant and Astellas Pharma Inc., effective as of August 31, 2006.
10.14*	Amendment No. 2 to Anemia License and Collaboration Agreement, by and between the Registrant and Astellas Pharma Inc., effective as of December 1, 2006.
10.15†*	Supplement to Anemia License and Collaboration Agreement, by and between the Registrant and Astellas Pharma Inc., effective as of April 28, 2006.
10.16†*	Amendment No. 3 to Anemia License and Collaboration Agreement, by and between the Registrant and Astellas Pharma Inc., dated as of May 10, 2012.
10.17†*	Amended and Restated License, Development and Commercialization Agreement (China) by and among FibroGen China Anemia Holdings, Ltd., Beijing FibroGen Medical Technology Development Co., Ltd., FibroGen International (Hong Kong) Limited and AstraZeneca AB, effective as of July 30, 2013.

Exhibit Number	Description of Document
10.18†	Amended and Restated License, Development and Commercialization Agreement by and between Registrant and AstraZeneca AB, effective as of July 30, 2013.
10.19†*	License Agreement by and between the Registrant and the University of Miami and its School of Medicine, dated as of May 23, 1997.
10.20†*	First Amendment to May 23, 1997 License Agreement by and between the Registrant and University of Miami, effective as of July 29, 1999.
10.21*	Research and Commercialization Agreement by and among the Registrant, GenPharm International Inc., Medarex, Inc. and FibroPharma, Inc., effective as of July 9, 1998.
10.22*	Amendment No. 1 to Research and Commercialization Agreement by and among the Registrant, GenPharm International Inc., Medarex, Inc. and FibroPharma, Inc., effective as of June 30, 2001.
10.23†*	Amendment No. 2 to Research and Commercialization Agreement by and among the Registrant, GenPharm International Inc., Medarex, Inc. and FibroPharma, Inc., effective as of January 28, 2002.
10.24†*	License Agreement by and between the Registrant and the Dana-Farber Cancer Institute, Inc., effective as of March 29, 2006.
10.25*	Amendment No. 1 to License agreement by and between the Registrant and Dana-Farber Cancer Institute, Inc., effective as of February 28, 2006.
10.26*	Amendment No. 2 to License Agreement by and between the Registrant and Dana-Farber Cancer Institute, Inc., effective as of March 14, 2006.
10.27+*	Form of Indemnity Agreement by and between the Registrant and its directors and officers.
10.28(i)†*	Process Development and Clinical Supply Agreement by and between the Registrant and Boehringer Ingelheim Pharma GmbH & Co. KG, effective as of November 29, 2007.
10.28(ii)†*	Letter Agreement by and between the Registrant and Boehringer Ingelheim Pharma GmbH & Co. KG, effective as of June 26, 2008.
10.28(iii)†*	Letter Agreement by and between the Registrant and Boehringer Ingelheim Pharma GmbH & Co. KG, effective as of August 18, 2008.
10.28(iv)†*	Amendment No. 1 to the Process Development and Clinical Supply Agreement by and between the Registrant and Boehringer Ingelheim Pharma GmbH & Co. KG, effective as of May 28, 2009.
10.28(v)†*	Amendment No. 3 to the Process Development and Clinical Supply Agreement by and between the Registrant and Boehringer Ingelheim Pharma GmbH & Co. KG, effective as of November 5, 2010.
10.28(vi)†*	Amendment No. 4 to the Process Development and Clinical Supply Agreement by and between the Registrant and Boehringer Ingelheim Pharma GmbH & Co. KG, effective as of January 24, 2011.
10.28(vii)†*	Amendment No. 5 to the Process Development and Clinical Supply Agreement by and between the Registrant and Boehringer Ingelheim Pharma GmbH & Co. KG, effective as of April 15, 2011.
10.28(viii)†*	Amendment No. 6 to the Process Development and Clinical Supply Agreement by and between the Registrant and Boehringer Ingelheim Pharma GmbH & Co. KG, effective as of May 26, 2011.

Exhibit Number	Description of Document
10.28(ix)†*	Amendment No. 7 to the Process Development and Clinical Supply Agreement by and between the Registrant and Boehringer Ingelheim Pharma GmbH & Co. KG, effective as of January 1, 2012.
10.28(x)†*	Amendment No. 8 to the Process Development and Clinical Supply Agreement by and between the Registrant and Boehringer Ingelheim Pharma GmbH & Co. KG, effective as of July 10, 2012.
10.28(xi)†*	Amendment No. 9 to the Process Development and Clinical Supply Agreement by and between the Registrant and Boehringer Ingelheim Pharma GmbH & Co. KG, effective as of November 26, 2012.
10.28(xii)†*	Amendment No. 10 to the Process Development and Clinical Supply Agreement by and between the Registrant and Boehringer Ingelheim Pharma GmbH & Co. KG, effective as of June 21, 2013.
10.28(xiii)†*	Amendment No. 11 to the Process Development and Clinical Supply Agreement by and between the Registrant and Boehringer Ingelheim Pharma GmbH & Co. KG, effective as of July 9, 2013.
10.28(xiv)†*	Amendment No. 12 to the Process Development and Clinical Supply Agreement by and between the Registrant and Boehringer Ingelheim Pharma GmbH & Co. KG, effective as of August 1, 2013.
10.28(xv)†*	Amendment No. 13 to the Process Development and Clinical Supply Agreement by and between the Registrant and Boehringer Ingelheim Pharma GmbH & Co. KG, effective as of March 6, 2014.
10.28(xvi)†*	Amendment No. 14 to the Process Development and Clinical Supply Agreement by and between the Registrant and Boehringer Ingelheim Pharma GmbH & Co. KG, effective as of February 5, 2014.
10.29+*	Offer Letter, by and between the Registrant and Frank Valone, dated as of November 3, 2008.
10.30+*	Offer Letter, by and between the Registrant and K. Peony Yu, dated as of November 21, 2008.
10.31+*	Offer Letter, by and between the Registrant and Pat Cotroneo, dated as of October 23, 2000.
10.32+*	Form of Change in Control and Severance Agreement by and between the Registrant and its officers.
21.1*	Subsidiaries of the Registrant.
23.1	Consent of PricewaterhouseCoopers LLP.
23.2*	Consent of Cooley LLP (included in Exhibit 5.1).
24.1*	Power of Attorney (included in signature pages).

* Previously filed.
† Confidential Treatment Requested.
\+ Indicates a management contract or compensatory plan.

(b) Financial Statement Schedules.

See index to Consolidated Financial Statements on page F-1. All other schedules have been omitted because they are not required or are not applicable.

Item 17. Undertakings

The undersigned Registrant hereby undertakes to provide to the underwriters at the closing specified in the underwriting agreement certificates in such denominations and registered in such names as required by the underwriters to permit prompt delivery to each purchaser.

Insofar as indemnification for liabilities arising under the Securities Act may be permitted to directors, officers and controlling persons of the Registrant pursuant to the foregoing provisions, or otherwise, the Registrant has been advised that in the opinion of the Securities and Exchange Commission such indemnification is against public policy as expressed in the Securities Act and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the Registrant of expenses incurred or paid by a director, officer or controlling person of the Registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the Registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Securities Act and will be governed by the final adjudication of such issue.

The undersigned Registrant hereby undertakes that:

(1) For purposes of determining any liability under the Securities Act, the information omitted from the form of prospectus filed as part of this Registration Statement in reliance upon Rule 430A and contained in a form of prospectus filed by the Registrant pursuant to Rule 424(b)(1) or (4) or 497(h) under the Securities Act shall be deemed to be part of this Registration Statement as of the time it was declared effective.

(2) For the purpose of determining any liability under the Securities Act, each post- effective amendment that contains a form of prospectus shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, the Registrant has duly caused this Registration Statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of San Francisco, State of California on the 10th day of November, 2014.

FIBROGEN, INC.

By: /S/ THOMAS B. NEFF
Name: Thomas B. Neff
Title: Chief Executive Officer

Pursuant to the requirements of the Securities Act of 1933, this Registration Statement has been signed by the following persons in the capacities and on the dates indicated:

Signature	Title	Date
/S/ THOMAS B. NEFF **Thomas B. Neff**	Chief Executive Officer and Chairman of the Board *(Principal Executive Officer)*	November 10, 2014
/S/ PAT COTRONEO **Pat Cotroneo**	Vice President, Finance, and Chief Financial Officer *(Principal Financial and Accounting Officer)*	November 10, 2014
* **Thomas F. Kearns Jr.**	Director	November 10, 2014
* **Kalevi Kurkijärvi, Ph.D.**	Director	November 10, 2014
* **Miguel Madero**	Director	November 10, 2014
* **Rory B. Riggs**	Director	November 10, 2014
* **Roberto Pedro Rosenkranz, Ph.D. M.B.A**	Director	November 10, 2014
* **Jorma Routti, Ph.D.**	Director	November 10, 2014
* **James A. Schoeneck**	Director	November 10, 2014
* **Julian N. Stern**	Director	November 10, 2014

Signature	Title	Date
*	Director	November 10, 2014
Toshinari Tamura, Ph.D.		

* Pursuant to Power of Attorney

By: **/S/ THOMAS B. NEFF**
Thomas B. Neff
Attorney-in-Fact

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EXHIBIT INDEX

Exhibit Number	Description of Document
1.1	Form of Underwriting Agreement.
3.1	Certificate of Incorporation of the Registrant, as amended and as presently in effect.
3.2*	Bylaws of the Registrant, as amended and as presently in effect.
3.3*	Form of Amended and Restated Certificate of Incorporation of the Registrant, to be in effect upon completion of this offering.
3.4*	Form of Amended and Restated Bylaws of the Registrant, to be in effect upon completion of this offering.
4.1	Form of Common Stock Certificate
4.2*	Investor Rights Agreement by and among the Registrant and certain of its stockholders, dated as of December 1995.
4.3*	Investor Rights Agreement by and among the Registrant and certain of its stockholders, dated as of February 20, 1998.
4.4*	Investor Rights Agreement by and among the Registrant and certain of its stockholders, dated as of May 12, 2000, as amended in December 2004 and September 2005.
4.5*	Investor Rights Agreement by and among the Registrant and certain of its stockholders, dated as of December 22, 2004, as amended in September 2005.
4.6*	Investor Rights Agreement by and among the Registrant and certain of its warrant holders, dated as of June 3, 1999.
4.7*	Investor Rights Agreement by and among the Registrant and certain of its warrant holders, dated as of February 8, 2000.
4.8*	Warrant to Purchase 67,200 Shares of Common Stock issued to Lease Management Services, Inc., dated as of June 6, 1995; as amended by Amendment to Warrant to Purchase 67,200 Shares of Common Stock by and between the Registrant and Phoenixcor, Inc. (as successor in interest to Lease Management Services, Inc.), dated as of June 5, 2001.
4.9*	Warrant to Purchase 43,140 Shares of Common Stock issued to Lease Management Services, Inc., dated as of December 11, 1997; as amended by Amendment to Warrant to Purchase 43,140 Shares of Common Stock by and between the Registrant and General Electric Capital Corporation (as successor in interest to Lease Management Services, Inc.), dated as of December 9, 2003.
4.10*	Warrant to Purchase 4,000 Shares of Common Stock issued to Laurence S. Shushan and Magdalena Shushan, Trustees of The Laurence and Magdalena Shushan Family Trust, dated as of June 3, 1999.
4.11*	Warrant to Purchase 180,000 Shares of Common Stock issued to Slough Estates USA, Inc., dated as of June 3, 1999.
4.12*	Warrant to Purchase 11,076 Shares of Common Stock issued to Bristow Investments, L.P, dated as of February 8, 2000.
4.13*	Warrant to Purchase 2,769 Shares of Common Stock issued to Laurence S. Shushan and Magdalena Shushan, Trustees of The Laurence and Magdalena Shushan Family Trust, dated as of February 8, 2000.
4.14*	Warrant to Purchase 124,605 Shares of Common Stock issued to Slough Estates USA, Inc., dated as of February 8, 2000.

Exhibit Number	Description of Document
4.15*	Shareholders' Agreement by and among FibroGen China Anemia Holdings, Ltd. and certain of its shareholders, dated as of July 11, 2012.
4.16*	Share Purchase Agreement by and among FibroGen China Anemia Holdings, Ltd. and the purchasers party thereto, dated as of July 11, 2012.
4.17*	Common Stock Purchase Agreement by and between the Registrant and AstraZeneca AB, dated as of October 20, 2014.
5.1*	Opinion of Cooley LLP regarding legality.
10.1+*	FibroGen, Inc. Amended and Restated 1994 Stock Plan, and forms of agreement thereunder.
10.2(i)+*	FibroGen, Inc. Amended and Restated 1999 Stock Plan.
10.2(ii)+*	Form of incentive stock option agreement under the FibroGen, Inc. Amended and Restated 1999 Stock Plan.
10.2(iii)+*	Forms of 2010 and 2013 amendments to the form of incentive stock option agreement under the FibroGen, Inc. Amended and Restated 1999 Stock Plan applicable to options amended pursuant to the Registrant's 2010 amendment and exchange offer.
10.3(i)+*	FibroGen, Inc. Amended and Restated 2005 Stock Plan.
10.3(ii)+*	Forms of stock option agreement, restricted stock purchase agreement and stock appreciation right agreement under the FibroGen, Inc. Amended and Restated 2005 Stock Plan.
10.3(iii)+*	Form of stock option agreement under the FibroGen, Inc. Amended and Restated 2005 Stock Plan applicable to options exchanged pursuant to the Registrant's 2010 amendment and exchange offer.
10.3(iv)+*	Form of 2010 amendment to the form of stock option agreement under the FibroGen, Inc. Amended and Restated 2005 Stock Plan applicable to options amended pursuant to the Registrant's 2010 amendment and exchange offer.
10.3(v)+*	Form of 2013 amendment to the form of stock option agreement under the FibroGen, Inc. Amended and Restated 2005 Stock Plan applicable to options amended or exchanged pursuant to the Registrant's 2010 amendment and exchange offer.
10.4+	FibroGen, Inc. 2014 Equity Incentive Plan, and forms of agreement thereunder, to be in effect upon completion of this offering.
10.5+	FibroGen, Inc. 2014 Employee Stock Purchase Plan, to be in effect upon completion of this offering.
10.6+*	FibroGen, Inc. Non-Employee Director Compensation Policy.
10.7+*	FibroGen, Inc. 2014 Employee Compensation and Bonus Plan.
10.8*	Lease Agreement by and between the Registrant and X-4 Dolphin LLC, dated as of September 22, 2006; as amended by First Amendment to Lease by and between the Registrant and X-4 Dolphin LLC, dated as of October 10, 2007; as amended by Second Amendment to Lease by and between the Registrant and X-4 Dolphin LLC, dated as of June 29, 2009; as amended by Third Amendment to Lease by and between the Registrant and Are-San Francisco No. 43, LLC (as successor in interest to X-4 Dolphin LLC), dated as of May 19, 2011; as amended by Fourth Amendment to Lease by and between the Registrant and Are-San Francisco No. 43, LLC, dated as of September 8, 2011.

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Exhibit Number	Description of Document
10.9*	Lease for Premises in Beijing BDA Biomedical Park by and among Beijing FibroGen Medical Technology Development Co., Ltd., Beijing Economic and Technology Investment Development Parent Company and Beijing BDA International Biological Pharmaceutical Investment Management Co., Ltd., effective as of February 1, 2013, as supplemented by the Supplementary Agreement to Lease of Premises in Beijing BDA Biomedical Park by and among Beijing FibroGen Medical Technology Development Co., Ltd., Beijing Economic Technology Investment Development Parent Company and Beijing BDA International Biological Pharmaceutical Investment Management Co., Ltd., dated as of January 30, 2013.
10.10+*	Form of Employment Offer Letter.
10.11†*	Collaboration Agreement, by and between the Registrant and Astellas Pharma Inc., effective as of June 1, 2005.
10.12†*	Anemia License and Collaboration Agreement, by and between the Registrant and Astellas Pharma Inc., effective as of April 28, 2006.
10.13†*	Amendment to Anemia License and Collaboration Agreement, by and between the Registrant and Astellas Pharma Inc., effective as of August 31, 2006.
10.14*	Amendment No. 2 to Anemia License and Collaboration Agreement, by and between the Registrant and Astellas Pharma Inc., effective as of December 1, 2006.
10.15†*	Supplement to Anemia License and Collaboration Agreement, by and between the Registrant and Astellas Pharma Inc., effective as of April 28, 2006.
10.16†*	Amendment No. 3 to Anemia License and Collaboration Agreement, by and between the Registrant and Astellas Pharma Inc., dated as of May 10, 2012.
10.17†*	Amended and Restated License, Development and Commercialization Agreement (China) by and among FibroGen China Anemia Holdings, Ltd., Beijing FibroGen Medical Technology Development Co., Ltd., FibroGen International (Hong Kong) Limited and AstraZeneca AB, effective as of July 30, 2013.
10.18†	Amended and Restated License, Development and Commercialization Agreement by and between Registrant and AstraZeneca AB, effective as of July 30, 2013.
10.19†*	License Agreement by and between the Registrant and the University of Miami and its School of Medicine, dated as of May 23, 1997.
10.20†*	First Amendment to May 23, 1997 License Agreement by and between the Registrant and University of Miami, effective as of July 29, 1999.
10.21*	Research and Commercialization Agreement by and among the Registrant, GenPharm International Inc., Medarex, Inc. and FibroPharma, Inc., effective as of July 9, 1998.
10.22*	Amendment No. 1 to Research and Commercialization Agreement by and among the Registrant, GenPharm International Inc., Medarex, Inc. and FibroPharma, Inc., effective as of June 30, 2001.
10.23†*	Amendment No. 2 to Research and Commercialization Agreement by and among the Registrant, GenPharm International Inc., Medarex, Inc. and FibroPharma, Inc., effective as of January 28, 2002.
10.24†*	License Agreement by and between the Registrant and the Dana-Farber Cancer Institute, Inc., effective as of March 29, 2006.
10.25*	Amendment No. 1 to License agreement by and between the Registrant and Dana-Farber Cancer Institute, Inc., effective as of February 28, 2006.
10.26*	Amendment No. 2 to License Agreement by and between the Registrant and Dana-Farber Cancer Institute, Inc., effective as of March 14, 2006.

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Exhibit Number	Description of Document
10.27+*	Form of Indemnity Agreement by and between the Registrant and its directors and officers.
10.28(i)†*	Process Development and Clinical Supply Agreement by and between the Registrant and Boehringer Ingelheim Pharma GmbH & Co. KG, effective as of November 29, 2007.
10.28(ii)†*	Letter Agreement by and between the Registrant and Boehringer Ingelheim Pharma GmbH & Co. KG, effective as of June 26, 2008.
10.28(iii)†*	Letter Agreement by and between the Registrant and Boehringer Ingelheim Pharma GmbH & Co. KG, effective as of August 18, 2008.
10.28(iv)†*	Amendment No. 1 to the Process Development and Clinical Supply Agreement by and between the Registrant and Boehringer Ingelheim Pharma GmbH & Co. KG, effective as of May 28, 2009.
10.28(v)†*	Amendment No. 3 to the Process Development and Clinical Supply Agreement by and between the Registrant and Boehringer Ingelheim Pharma GmbH & Co. KG, effective as of November 5, 2010.
10.28(vi)†*	Amendment No. 4 to the Process Development and Clinical Supply Agreement by and between the Registrant and Boehringer Ingelheim Pharma GmbH & Co. KG, effective as of January 24, 2011.
10.28(vii)†*	Amendment No. 5 to the Process Development and Clinical Supply Agreement by and between the Registrant and Boehringer Ingelheim Pharma GmbH & Co. KG, effective as of April 15, 2011.
10.28(viii)†*	Amendment No. 6 to the Process Development and Clinical Supply Agreement by and between the Registrant and Boehringer Ingelheim Pharma GmbH & Co. KG, effective as of May 26, 2011.
10.28(ix)†*	Amendment No. 7 to the Process Development and Clinical Supply Agreement by and between the Registrant and Boehringer Ingelheim Pharma GmbH & Co. KG, effective as of January 1, 2012.
10.28(x)†*	Amendment No. 8 to the Process Development and Clinical Supply Agreement by and between the Registrant and Boehringer Ingelheim Pharma GmbH & Co. KG, effective as of July 10, 2012.
10.28(xi)†*	Amendment No. 9 to the Process Development and Clinical Supply Agreement by and between the Registrant and Boehringer Ingelheim Pharma GmbH & Co. KG, effective as of November 26, 2012.
10.28(xii)†*	Amendment No. 10 to the Process Development and Clinical Supply Agreement by and between the Registrant and Boehringer Ingelheim Pharma GmbH & Co. KG, effective as of June 21, 2013.
10.28(xiii)†*	Amendment No. 11 to the Process Development and Clinical Supply Agreement by and between the Registrant and Boehringer Ingelheim Pharma GmbH & Co. KG, effective as of July 9, 2013.
10.28(xiv)†*	Amendment No. 12 to the Process Development and Clinical Supply Agreement by and between the Registrant and Boehringer Ingelheim Pharma GmbH & Co. KG, effective as of August 1, 2013.
10.28(xv)†*	Amendment No. 13 to the Process Development and Clinical Supply Agreement by and between the Registrant and Boehringer Ingelheim Pharma GmbH & Co. KG, effective as of March 6, 2014.

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Exhibit Number	Description of Document
10.28(xvi)†*	Amendment No. 14 to the Process Development and Clinical Supply Agreement by and between the Registrant and Boehringer Ingelheim Pharma GmbH & Co. KG, effective as of February 5, 2014.
10.29+*	Offer Letter, by and between the Registrant and Frank Valone, dated as of November 3, 2008.
10.30+*	Offer Letter, by and between the Registrant and K. Peony Yu, dated as of November 21, 2008.
10.31+*	Offer Letter, by and between the Registrant and Pat Cotroneo, dated as of October 23, 2000.
10.32+*	Form of Change in Control and Severance Agreement by and between the Registrant and its officers.
21.1*	Subsidiaries of the Registrant.
23.1	Consent of PricewaterhouseCoopers LLP.
23.2*	Consent of Cooley LLP (included in Exhibit 5.1).
24.1*	Power of Attorney (included in signature pages).

* Previously Filed.
† Confidential Treatment Requested.
\+ Indicates a management contract or compensatory plan.

Exhibit 1.1

FibroGen, Inc.

Common Stock, par value $0.01 per share

Underwriting Agreement

November [—], 2014

Goldman, Sachs & Co.,
Citigroup Global Markets Inc.,
Leerink Partners LLC,
As representatives (the "Representatives") of the several Underwriters named in Schedule I hereto,

c/o Goldman, Sachs & Co.,
200 West Street,
New York, New York 10282-2198,

c/o Citigroup Global Markets Inc.,
388 Greenwich Street,
New York, New York 10013,

c/o Leerink Partners LLC,
201 Spear Street, 16F,
San Francisco, California 94105.

Ladies and Gentlemen:

FibroGen, Inc., a Delaware corporation (the "Company"), proposes, subject to the terms and conditions stated herein, to issue and sell to the Underwriters named in Schedule I hereto (the "Underwriters") an aggregate of [—] shares (the "Firm Shares") and, at the election of the Underwriters, up to [—] additional shares (the "Optional Shares") of Common Stock, par value $0.01 per share (the "Stock") of the Company. The Firm Shares and the Optional Shares that the Underwriters elect to purchase pursuant to Section 2 hereof are herein collectively called the "Shares".

1. The Company represents and warrants to, and agrees with, each of the Underwriters that:

(a) A registration statement on Form S–1 (File No. 333-199069) (the "Initial Registration Statement") in respect of the Shares has been filed with the Securities and Exchange Commission (the "Commission"); the Initial Registration Statement and any post-effective amendment thereto, each in the form heretofore delivered to you and, excluding exhibits thereto, to you for each of the other Underwriters, have been declared effective by the Commission in such form; other than a registration statement, if any, increasing the size of the offering (a "Rule 462(b) Registration Statement"), filed pursuant to Rule 462(b) under the Securities Act of 1933, as amended (the "Act"), which became effective upon filing, no other document with respect to the Initial Registration Statement has heretofore been filed with the

Commission; and no stop order suspending the effectiveness of the Initial Registration Statement, any post-effective amendment thereto or the Rule 462(b) Registration Statement, if any, has been issued, the Company has not received notice of any proceeding for that purpose, and, to the Company's knowledge, no such proceeding has been initiated or threatened by the Commission (any preliminary prospectus included in the Initial Registration Statement or filed with the Commission pursuant to Rule 424(a) under the Act is hereinafter called a "Preliminary Prospectus"; the various parts of the Initial Registration Statement and the Rule 462(b) Registration Statement, if any, including all exhibits thereto and including the information contained in the form of final prospectus filed with the Commission pursuant to Rule 424(b) under the Act in accordance with Section 5(a) hereof and deemed by virtue of Rule 430A under the Act to be part of the Initial Registration Statement at the time it was declared effective, each as amended at the time such part of the Initial Registration Statement became effective or such part of the Rule 462(b) Registration Statement, if any, became or hereafter becomes effective, are hereinafter collectively called the "Registration Statement"; the Preliminary Prospectus relating to the Shares that was included in the Registration Statement immediately prior to the Applicable Time (as defined in Section 1(c) hereof) is hereinafter called the "Pricing Prospectus"; such final prospectus, in the form first filed pursuant to Rule 424(b) under the Act, is hereinafter called the "Prospectus"; any "issuer free writing prospectus" as defined in Rule 433 under the Act relating to the Shares is hereinafter called an "Issuer Free Writing Prospectus"; any oral or written communication with potential investors undertaken in reliance on Section 5(d) of the Act is hereinafter called a "Section 5(d) Communication"; and any Section 5(d) Communication that is a written communication within the meaning of Rule 405 under the Act is hereinafter called a "Section 5(d) Writing";

(b) No order preventing or suspending the use of any Preliminary Prospectus or any Issuer Free Writing Prospectus has been issued by the Commission, and each Preliminary Prospectus, at the time of filing thereof, conformed in all material respects to the requirements of the Act and the rules and regulations of the Commission thereunder, and did not contain an untrue statement of a material fact or omit to state a material fact required to be stated therein or necessary to make the statements therein, in the light of the circumstances under which they were made, not misleading; provided, however, that this representation and warranty shall not apply to any statements or omissions made in reliance upon and in conformity with information furnished in writing to the Company by an Underwriter through Goldman, Sachs & Co. expressly for use therein;

(c) For the purposes of this Agreement, the "Applicable Time" is [—] [a.m./p.m.] (New York City time) on the date of this Agreement; the Pricing Prospectus, as supplemented by the information listed on Schedule II(c) hereto, taken together (collectively, the "Pricing Disclosure Package"), as of the Applicable Time, did not include any untrue statement of a material fact or omit to state any material fact necessary in order to make the statements therein, in the light of the circumstances under which they were made, not misleading; and each Issuer Free Writing Prospectus and each Section 5(d) Writing listed on Schedule II(a) and (b) hereto does not conflict with the information contained in the Registration Statement, the Pricing Prospectus or the Prospectus and each such Issuer Free Writing Prospectus and Section 5(d) Writing, as supplemented by and taken together with the Pricing Disclosure Package, as of the Applicable Time, did not include any untrue statement of a material fact or omit to state any material fact necessary in order to make the statements therein, in the light of the circumstances under which they were made, not misleading; provided, however, that this representation and warranty shall not apply to statements or omissions made in reliance

upon and in conformity with information furnished in writing to the Company by an Underwriter through Goldman, Sachs & Co. expressly for use therein;

(d) No documents were filed with the Commission since the Commission's close of business on the business day immediately prior to the date of this Agreement and prior to the execution of this Agreement, except as set forth on Schedule II(a) hereto;

(e)(i) The Registration Statement conforms, and the Prospectus and any further amendments or supplements to the Registration Statement and the Prospectus will conform, in all material respects to the requirements of the Act and the rules and regulations of the Commission thereunder and (ii) the Registration Statement and the Prospectus and any further amendments or supplements to the Registration Statement and the Prospectus do not and will not, as of the applicable effective date as to each part of the Registration Statement and any amendment thereto and as of the applicable filing date and each Time of Delivery as to the Prospectus and any amendment or supplement thereto, contain an untrue statement of a material fact or omit to state a material fact required to be stated therein or necessary to make the statements therein not misleading; provided, however, that this representation and warranty shall not apply to any statements or omissions made in reliance upon and in conformity with information furnished in writing to the Company by an Underwriter through Goldman, Sachs & Co. expressly for use therein;

(f) Neither the Company nor any of its subsidiaries has sustained since the date of the latest audited financial statements included in the Pricing Prospectus any material loss or interference with its business from fire, explosion, flood or other calamity, whether or not covered by insurance, or from any labor dispute or court or governmental action, order or decree, otherwise than as set forth or contemplated in the Pricing Prospectus; and, since the respective dates as of which information is given in the Registration Statement and the Pricing Prospectus, there has not been any change in the capital stock (other than as a result of (A) the exercise of any stock options outstanding as of the date of this Agreement or warrants outstanding as of the date of this Agreement, (B) the award of stock options in the ordinary course of business pursuant to the Company's equity incentive plans or (C) the repurchase of shares of Stock in connection with any early exercise of stock options by option holders from employees terminating their service to the Company, in each case as such options, warrants and equity incentive plans are described in the Pricing Prospectus) or long-term debt of the Company or any of its subsidiaries or any material adverse change, or any development involving a prospective material adverse change, in or affecting the general affairs, management, financial position, stockholders' equity or results of operations of the Company and its subsidiaries, otherwise than as set forth or contemplated in the Pricing Prospectus;

(g) The Company and its subsidiaries have good and marketable title in fee simple to all real property and good and marketable title to all personal property owned by them, in each case free and clear of all liens, encumbrances and defects except such as are described in the Pricing Prospectus or such as do not materially affect the value of such property and do not interfere with the use made and proposed to be made of such property by the Company and its subsidiaries; and any real property and buildings held under lease by the Company and its subsidiaries are held by them under valid, subsisting and enforceable leases (subject to the effects of (A) bankruptcy, insolvency, fraudulent conveyance, fraudulent transfer, reorganization, moratorium or other similar laws relating to or affecting the rights or remedies of creditors generally; (B) the application of general principles of equity (including, without limitation, concepts of materiality, reasonableness, good faith and fair dealing, regardless of

whether enforcement is considered in proceedings at law or in equity); and (C) applicable law and public policy with respect to rights to indemnity and contribution) with such exceptions as are not material and do not interfere with the use made and proposed to be made of such property and buildings by the Company and its subsidiaries, taken as a whole;

(h) The Company has been duly incorporated and is validly existing as a corporation in good standing under the laws of the State of Delaware, with power and authority (corporate and other) to own its properties and conduct its business as described in the Pricing Prospectus, and has been duly qualified as a foreign corporation for the transaction of business and is in good standing under the laws of each other jurisdiction in which it owns or leases properties or conducts any business so as to require such qualification, or is subject to no material liability or disability by reason of the failure to be so qualified or be in good standing in any such jurisdiction; and each subsidiary of the Company has been duly incorporated or formed and is validly existing as a corporation or other business organization in good standing under the laws of its jurisdiction of incorporation or formation, and has been duly qualified as a foreign corporation or other business organization for the transaction of business and is in good standing under the laws of each other jurisdiction in which it owns or leases properties or conducts any business so as to require such qualification, or is subject to no material liability or disability by reason of the failure to be so qualified or be in good standing in any such jurisdiction;

(i) The Company has an authorized capitalization as set forth in the Pricing Prospectus and all of the issued shares of capital stock of the Company have been duly and validly authorized and issued and are fully paid and non-assessable and conform to the description of the Stock contained in the Pricing Disclosure Package and the Prospectus; and all of the issued shares of capital stock and equity interests of each subsidiary of the Company have been duly and validly authorized and issued, are fully paid and non-assessable and (except for directors' qualifying shares) are owned directly or indirectly by the Company, free and clear of all liens, encumbrances, equities or claims;

(j) The Shares have been duly and validly authorized and, when issued and delivered against payment therefor as provided herein, will be duly and validly issued and fully paid and non-assessable and will conform to the description of the Stock contained in the Pricing Disclosure Package and the Prospectus;

(k) The issue and sale of the Shares and the compliance by the Company with this Agreement and the consummation of the transactions herein contemplated (i) will not materially conflict with or result in a material breach or violation of any of the terms or provisions of, or constitute a material default under, any indenture, mortgage, deed of trust, loan agreement, lease or other agreement or instrument to which the Company or any of its subsidiaries is a party or by which the Company or any of its subsidiaries is bound or to which any of the property or assets of the Company or any of its subsidiaries is subject, (ii) will not conflict with or result in a breach or violation of any of the terms or provisions of the Certificate of Incorporation or By-laws of the Company or the corresponding governing documents of any of its subsidiaries and (iii) will not conflict with or result in a breach or violation of any of the terms or provisions of any statute or any order, rule or regulation of any court or governmental agency or body having jurisdiction over the Company or any of its subsidiaries or any of their properties; and no consent, approval, authorization, order, registration or qualification of or with any such court or governmental agency or body is required for the issue and sale of the Shares or the consummation by the Company of the transactions contemplated by this

Agreement, except for the registration under the Act of the Shares, the approval by the Financial Industry Regulatory Authority ("FINRA") of the underwriting terms and arrangements and such consents, approvals, authorizations, orders, registrations or qualifications as may be required under state securities or Blue Sky laws in connection with the purchase and distribution of the Shares by the Underwriters;

(l) Neither the Company nor any of its subsidiaries is (i) in violation of its Certificate of Incorporation or By-laws, (ii) in default in the performance or observance of any material obligation, agreement, covenant or condition contained in any indenture, mortgage, deed of trust, loan agreement, lease or other agreement or instrument to which it is a party or by which it or any of its properties may be bound or (iii) in violation or default of any statute, law, rule, regulation, judgment, order or decree of any court, regulatory body, administrative agency, governmental body, arbitrator or other authority having jurisdiction over the Company, its subsidiaries or any of their properties, as applicable; except in the case of (iii), for such defaults as would not, individually or in the aggregate, have a Material Adverse Effect;

(m) The statements set forth in the Pricing Prospectus and the Prospectus under the caption "Description of Capital Stock", insofar as they purport to constitute a summary of the terms of the Stock, and under the captions "Business—Roxadustat for the Treatment of Anemia in China", "Business—Regulation", "Business—Intellectual Property", "Risk Factors— Risks Related to Our Intellectual Property", "Risk Factors—Risks Related to Government Regulation", "Certain Relationships and Related Party Transactions", "Material United States Federal Income Tax Consequences to Non-U.S. Holders" and "Underwriting", insofar as they purport to describe the provisions of the laws and documents referred to therein, are accurate, complete and fair in all material respects;

(n) Other than as set forth in the Pricing Prospectus, there are no legal or governmental proceedings pending to which the Company or any of its subsidiaries or, to the Company's knowledge, any officer or director of the Company is a party or of which any property or assets of the Company or any of its subsidiaries or, to the Company's knowledge, any officer or director of the Company is the subject which, if determined adversely to the Company or any of its subsidiaries, would individually or in the aggregate have a material adverse effect on the current or future financial position, stockholders' equity or results of operations of the Company and its subsidiaries, taken as a whole (a "Material Adverse Effect"); and, to the best of the Company's knowledge, no such proceedings are threatened or contemplated by governmental authorities or threatened by others;

(o) The Company is not and, after giving effect to the offering and sale of the Shares and the application of the proceeds thereof, will not be an "investment company", as such term is defined in the Investment Company Act of 1940, as amended (the "Investment Company Act");

(p) At the time of filing the Initial Registration Statement the Company was not and is not an "ineligible issuer," as defined in Rule 405 under the Act;

(q) PricewaterhouseCoopers LLP, who have certified certain financial statements of the Company and its subsidiaries, is an independent registered public accounting firm as required by the Act and the rules and regulations of the Commission thereunder;

(r) The Company maintains a system of internal control over financial reporting (as such term is defined in Rule 13a-15(f) under the Securities Exchange Act of 1934, as

amended (the "Exchange Act")) that complies with the requirements of the Exchange Act and has been designed by the Company's principal executive officer and principal financial officer, or under their supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. The Company is not aware of any material weaknesses in its internal control over financial reporting;

(s) Since the date of the latest audited financial statements included in the Pricing Prospectus, there has been no change in the Company's internal control over financial reporting that has materially affected, or is reasonably likely to materially affect, the Company's internal control over financial reporting;

(t) The Company maintains disclosure controls and procedures (as such term is defined in Rule 13a-15(e) under the Exchange Act) that comply with the requirements of the Exchange Act; such disclosure controls and procedures have been designed to ensure that material information relating to the Company and its subsidiaries is made known to the Company's principal executive officer and principal financial officer by others within those entities; and such disclosure controls and procedures are effective;

(u) This Agreement has been duly authorized, executed and delivered by the Company;

(v) None of the Company, any of its subsidiaries nor, to the knowledge of the Company, any director, officer, agent, employee, affiliate or other person associated with or acting on behalf of the Company or any of its subsidiaries has (i) used any corporate funds for any unlawful contribution, gift, entertainment or other unlawful expense relating to political activity; (ii) made any direct or indirect unlawful payment to any foreign or domestic government official or employee from corporate funds; (iii) violated or is in violation of any provision of the Foreign Corrupt Practices Act of 1977; (iv) violated or is in violation of any provision of the Bribery Act 2010 of the United Kingdom or (v) made any bribe, rebate, payoff, influence payment, kickback or other unlawful payment;

(w)(i) The Company and each of its subsidiaries owns, possesses, licenses or has other rights to practice and use all patents, trademarks, service marks, trade names, domain names, copyrights and know-how (including trade secrets and all other unpatented and/or unpatentable proprietary information, confidential information, systems and processes) and all other technology and intellectual property rights practiced or used by it or necessary for the conduct of its respective business as currently conducted and as proposed to be conducted in the Registration Statement or the Pricing Prospectus (collectively, the "Intellectual Property"), and, to the Company's knowledge, the conduct of its and its subsidiaries' respective business (including the development and commercialization of the products described in the Registration Statement or the Pricing Prospectus) has not and will not infringe, misappropriate or otherwise violate or conflict with any intellectual property rights of others; (ii) except as described in the Pricing Prospectus, (A) neither the Company nor any of its subsidiaries have received any notice of any claim of infringement, misappropriation or other violation of or conflict with any such rights of others, (B) there are no third parties who have or, to the Company's knowledge, will be able to establish ownership rights in or to any Intellectual Property owned or purported to be owned by the Company or any of its subsidiaries, or any right to practice or use any Intellectual Property owned or purported to be owned by or exclusively licensed to the Company or any of its subsidiaries, (C) there is no pending or, to

the Company's knowledge, threatened action, suit, proceeding or claim by others challenging the Company's or any of its subsidiaries' rights in or to any Intellectual Property, (D) the Intellectual Property owned or purported to be owned by or exclusively licensed to the Company or any of its subsidiaries is valid and enforceable, and there is no pending or, to the Company's knowledge, threatened action, suit, proceeding or claim by others challenging the validity, enforceability or scope of any Intellectual Property owned or purported to be owned by or exclusively licensed to the Company or any of its subsidiaries, (E) there is no pending or, to the Company's knowledge, threatened action, suit, proceeding or claim by others that the Company or any of its subsidiaries infringes, misappropriates or otherwise violates or conflicts with any intellectual property or other proprietary rights of others, and (F) there is no pending or threatened action, suit, proceeding or claim by the Company or any of its subsidiaries that a third party infringes, misappropriates or otherwise violates or conflicts with any Intellectual Property; (iii) to the Company's knowledge, no Intellectual Property has been obtained or is being practiced or used by the Company or any of its subsidiaries in violation of any contractual obligation binding on the Company or any of its subsidiaries, or otherwise in violation of the rights of any persons, except, in the case of each of (i) through (iii) above, as would not, individually or in the aggregate, be material in light of all relevant facts and circumstances to the Company and its subsidiaries, taken as a whole; (iv) there are no outstanding options, licenses or binding agreements of any kind relating to the Intellectual Property owned or purported to be owned by or exclusively licensed to the Company or any of its subsidiaries that are required to be described in the Registration Statement or the Pricing Prospectus and are not so described; (v) neither the Company nor any of its subsidiaries is a party to or bound by any options, licenses or binding agreements with respect to any intellectual property of any other person or entity that are required to be set forth in the Registration Statement or the Pricing Prospectus and are not so described; (vi) to the Company's knowledge, no employee, consultant or independent contractor of the Company or any of its subsidiaries is in or has ever been in violation in any material respect of any term of any employment contract, patent disclosure agreement, invention assignment agreement, non-competition agreement, non-solicitation agreement nondisclosure agreement or any restrictive covenant to or with a former employer or independent contractor where the basis of such violation relates to such employee's employment or independent contractor's engagement with the Company or actions undertaken while employed or engaged with the Company; (vii) no government funding, facilities or resources of a university, college, other educational institution or research center or funding from third parties was used in the development of any Intellectual Property that is owned or purported to be owned by or, to the knowledge of the Company, licensed to the Company or any of its subsidiaries, and no governmental agency or body, university, college, other educational institution or research center has any claim or right in or to any Intellectual Property that is owned or purported to be owned by or, to the knowledge of the Company, exclusively licensed to the Company or any of its subsidiaries; (viii) the Company and each of its subsidiaries has the right to sue for past, present and future infringement, misappropriation, violation and conflict with all Intellectual Property owned or purported to be owned by it without restriction; and (ix) the Company and each of its subsidiaries has taken reasonable steps necessary to (A) secure its interests in the Intellectual Property (I) owned or purported to be owned by or exclusively licensed to it and (II) developed by its employees, consultants, agents and contractors in the course of their service to the Company or such subsidiary and (B) maintain the confidentiality of all material know how (including trade secrets and all other unpatented and/or unpatentable proprietary

information, confidential information, systems and procedures) owned, used or held for use by it;

(x)(i) the ownership structure (the "Ownership Structure") set forth in Annex III of this Agreement complies with all applicable laws, rules and regulations, including those of the People's Republic of China (the "PRC"), Hong Kong, the Cayman Islands and the United States, does not violate, breach, contravene or otherwise conflict with any applicable laws, rules and regulations and has not been challenged by any governmental agency; (ii) there are no legal, arbitral, governmental or other proceedings (including, without limitation, governmental investigations or inquiries) pending before or threatened or contemplated by any governmental agency in respect of such Ownership Structure; (iii) all consents, approvals, authorizations, orders, registrations, clearances or qualifications of or with any governmental agency ("Governmental Authorizations") in connection with the Ownership Structure have been duly granted, made or unconditionally obtained in writing and are in full force and effect and no such Governmental Authorization has been withdrawn or revoked or is subject to any condition precedent which has not been fulfilled or performed; (iv) after the consummation of the offering of Shares hereunder, the Ownership Structure will comply with all applicable laws, rules and regulations; (v) all of the Company's subsidiaries incorporated or formed in the PRC and Hong Kong have taken all reasonable steps to comply with any applicable rules and regulations of the PRC State Administration of Foreign Exchange (the "SAFE Rules and Regulations"), including, without limitation, requesting each shareholder and option holder that is, or is directly or indirectly owned or controlled by, a PRC resident or citizen to complete any registration and other procedures required under the SAFE Rules and Regulations; and (vi) (A) dividends and other distributions declared with respect to after-tax retained earnings on the share capital of any subsidiary of the Company that is or will be incorporated in the PRC will be permitted under the current laws and regulations of the PRC to be freely transferred out of the PRC and may be paid in U.S. dollars, subject to the successful completion of PRC formalities required for such remittance, and all such dividends and other distributions will not be subject to withholding or other taxes under the laws and regulations of the PRC and are otherwise free and clear of any other tax, withholding or deduction in the PRC, and without the necessity of obtaining any Governmental Authorizations; (B) dividends and other distributions declared and payable on the share capital of any subsidiary of the Company that is or will be incorporated in Hong Kong will be permitted under the current laws and regulations of Hong Kong and the PRC to be paid to the Company, and all such dividends and other distributions will not be subject to withholding or other taxes under the laws and regulations of Hong Kong and the PRC and are otherwise free and clear of any other tax, withholding or deduction in Hong Kong and the PRC and without the necessity of obtaining any Governmental Authorizations of or with any governmental agency in Hong Kong or the PRC and (C) dividends and other distributions declared and payable on the share capital of any subsidiary of the Company that is or will be incorporated in the Cayman Islands will be permitted under the current laws and regulations of the Cayman Islands to be paid to the Company, and all such dividends and other distributions will not be subject to withholding or other taxes under the laws and regulations of the Cayman Islands and are otherwise free and clear of any other tax, withholding or deduction in the Cayman Islands and without the necessity of obtaining any Governmental Authorizations of or with any governmental agency in the Cayman Islands;

(y) There are no persons with registration rights or other similar rights to have any securities registered pursuant to the Registration Statement or otherwise registered by the Company under the Act except as have been validly waived or complied with;

(z) The operations of the Company and its subsidiaries are and have been conducted at all times in compliance with applicable financial recordkeeping and reporting requirements of the Currency and Foreign Transactions Reporting Act of 1970, as amended, the money laundering statutes of all jurisdictions where the Company and its subsidiaries conduct business, including but not limited to the USA Patriot Act (Title III of Pub. L. 107-56 (signed into law October 26, 2001)), the rules and regulations thereunder and any related or similar rules, regulations or guidelines, issued, administered or enforced by any governmental agency having jurisdiction over the Company or any of its subsidiaries (collectively, the "Money Laundering Laws") and no action, suit or proceeding by or before any court or governmental agency, authority or body or any arbitrator involving the Company or any of its subsidiaries with respect to the Money Laundering Laws is pending or, to the knowledge of the Company, threatened;

(aa)(i) None of the Company, any of its subsidiaries or, to the knowledge of the Company, any director, officer, agent, employee or affiliate of the Company or any of its subsidiaries (A) is currently the subject or the target of any sanctions administered or enforced by the United States government, including, without limitation, the Office of Foreign Assets Control of the United States Department of the Treasury, or other relevant sanctions authority (collectively, "Sanctions"), (B) does any business with or involving the government of, or any person or project located in, any country targeted by any Sanctions or (C) supports or facilitates any such business or project, in each case other than as permitted under such Sanctions; (ii) the Company is not controlled (within the meaning of the executive orders or regulations promulgating Sanctions) by any government or person that is the subject or target of Sanctions; (iii) the Company will not directly or indirectly use the proceeds of the offering of the Shares hereunder, or lend, contribute or otherwise make available such proceeds to any subsidiary, joint venture partner or other person or entity (A) to fund any activities of or business with any person, or in any country or territory, that, at the time of such funding, is the subject of Sanctions or (B) in any other manner that will result in a violation by any person (including any person participating in the transaction, whether as underwriter, advisor, investor or otherwise) of Sanctions and (iv) the Company has implemented and maintains adequate internal controls and procedures to monitor and audit transactions that are reasonably designed to detect and prevent any use of the proceeds from the offering contemplated hereby that is inconsistent with any of the Company's representations and obligations under clause (iii) of this paragraph;

(bb) The Company and its subsidiaries and their respective properties, assets and operations are in compliance with, and the Company and each of its subsidiaries hold all permits, authorizations and approvals required under Environmental Laws (as defined below); there are no past, present or reasonably anticipated future events, conditions, circumstances, activities, practices, actions, omissions or plans that could reasonably be expected to give rise to any material costs or liabilities to the Company or any of its subsidiaries under, or to interfere with or prevent compliance by the Company or any of its subsidiaries with, Environmental Laws; none of the Company and its subsidiaries (i) is the subject of any investigation, (ii) has received any notice or claim, (iii) is a party to or affected by any pending or, to its knowledge, threatened action, suit or proceeding, (iv) is bound by any judgment,

decree or order or (v) has entered into any agreement, in each case relating to any alleged violation of any Environmental Law or any actual or alleged release or threatened release or cleanup at any location of any Hazardous Materials (as defined below) (as used herein, "Environmental Law" means any national, provincial, municipal or other local or foreign law, statute, ordinance, rule, regulation, order, notice, directive, decree, judgment, injunction, permit, license, authorization or other binding requirement, or common law, relating to health, safety or the protection, cleanup or restoration of the environment or natural resources, including those relating to the distribution, processing, generation, treatment, storage, disposal, transportation, other handling or release or threatened release of Hazardous Materials, and "Hazardous Materials" means any material (including, without limitation, pollutants, contaminants, hazardous or toxic substances or wastes) that is regulated by or may give rise to liability under any Environmental Law);

(cc) Any statistical, industry-related and market-related data included in the Pricing Prospectus and the Prospectus are based on or derived from sources that the Company believes, after reasonable inquiry, to be reliable and accurate and, to the extent required, the Company has obtained the written consent to the use of such data from such sources;

(dd)(i) The Company has operated and currently is in compliance in all respects with all applicable rules and regulations of the United States Food and Drug Administration (the "FDA") and other governmental agencies; (ii) the Company and its subsidiaries (A) possess, and are in compliance with the terms of, all licenses, permits, approvals, certificates, registrations, franchises, clearances, exemptions and other authorizations necessary to conduct their respective businesses (collectively, "Licenses"), including, without limitation, all Licenses required by the FDA and/or by any other governmental agencies, which Licenses are in full force and effect, (B) have not received any notice from any governmental agency relating to the revocation or modification of any Licenses that, if determined adversely to the Company or its subsidiaries, would reasonably be expected to have a material impact on the Company and (C) are not aware of any other action by any governmental agency to limit, suspend, terminate or revoke any License held by the Company or any of its subsidiaries; (iii) (A) the studies, tests and preclinical and clinical trials conducted by or on behalf of or sponsored by the Company were, and if still pending are being, conducted in all material respects in accordance with standard medical and scientific research procedures and controls, (B) none of the studies, tests and preclinical and clinical trials conducted by or on behalf of or sponsored by the Company involved any investigator who has been disqualified as a clinical investigator or has been found by the FDA to have engaged in scientific misconduct, (C) the Company is not aware of any studies, tests or trials the results of which reasonably call into question the clinical trial results described or referred to in the Pricing Prospectus and the Prospectus and (D) except as disclosed in the Pricing Prospectus, the Company and its subsidiaries have not received any communication, notice or correspondence from any governmental agencies requiring the termination, material modification or suspension of any studies, tests or preclinical and clinical trials conducted by or on behalf of or sponsored by the Company; (iv) each description of any studies, tests or preclinical and clinical trials conducted by or on behalf of or sponsored by the Company contained in the Pricing Prospectus is accurate and complete in all material respects and fairly presents the data about and derived from such studies, tests and trials and (v) all manufacturing, packaging, processing, labeling, distribution, marketing, promotion, storage, import, export or disposal of the Company's or its subsidiaries' products by the Company, its

subsidiaries or their suppliers, vendors or partners have been conducted in compliance with all applicable laws, rules and regulations;

(ee) None of the Company's subsidiaries incorporated or formed outside of the U.S. (each, a "non-U.S. subsidiary") was a "passive foreign investment company" ("PFIC") as defined in Section 1297 of the United States Internal Revenue Code of 1986, as amended, for the most recently completed taxable year; and the Company does not expect any non-U.S. subsidiary to be classified as a PFIC in the current taxable year (taking into account the application of the proceeds from the offering of the Shares hereunder) or for any future taxable year;

(ff) From the time of initial confidential submission of a registration statement relating to the Shares with the Commission (or, if earlier, the first date on which a Section 5(d) Communication was made) through the date hereof, the Company has been and is an "emerging growth company" as defined in Section 2(a)(19) of the Act (an "Emerging Growth Company"); and

(gg) (i) the Registration Statement, the Prospectus, any preliminary prospectus and any Issuer Free Writing Prospectuses comply, and any further amendments or supplements thereto will comply, with any applicable laws or regulations of foreign jurisdictions in which the Prospectus or any preliminary prospectus and any Issuer Free Writing Prospectus, as amended or supplemented, if applicable, are distributed in connection with the Directed Share Program, and that (ii) no authorization, approval, consent, license, order, registration or qualification of or with any government, governmental instrumentality or court, other than such as have been obtained, is necessary under the securities laws and regulations of foreign jurisdictions in which the Directed Shares are offered outside the United States. The Company has not offered, or caused the Underwriters to offer, Shares to any person pursuant to the Directed Share Program with the specific intent to unlawfully influence (i) a customer or supplier of the Company to alter the customer's or supplier's level or type of business with the Company, or (ii) a trade journalist or publication to write or publish favorable information about the Company or its products.

2. Subject to the terms and conditions herein set forth, (a) the Company agrees to sell to each of the Underwriters, and each of the Underwriters agrees, severally and not jointly, to purchase from the Company, at a purchase price per share of $[—], the number of Firm Shares set forth opposite the name of such Underwriter in Schedule I hereto and (b) in the event and to the extent that the Underwriters shall exercise the election to purchase Optional Shares as provided below, the Company agrees to sell to each of the Underwriters, and each of the Underwriters agrees, severally and not jointly, to purchase from the Company, at the purchase price per share set forth in clause (a) of this Section 2, that portion of the number of Optional Shares as to which such election shall have been exercised (to be adjusted by you so as to eliminate fractional shares) determined by multiplying such number of Optional Shares by a fraction, the numerator of which is the maximum number of Optional Shares which such Underwriter is entitled to purchase as set forth opposite the name of such Underwriter in Schedule I hereto and the denominator of which is the maximum number of Optional Shares that all of the Underwriters are entitled to purchase hereunder.

The Company hereby grants to the Underwriters the right to purchase at their election up to [—] Optional Shares, at the purchase price per share set forth in the paragraph above, for the sole purpose of covering sales of shares in excess of the number of Firm Shares, provided that the purchase price per Optional Share shall be reduced by an amount per share equal to any dividends

or distributions declared by the Company and payable on the Firm Shares but not payable on the Optional Shares. Any such election to purchase Optional Shares may be exercised only by written notice from you to the Company, given within a period of 30 calendar days after the date of this Agreement and setting forth the aggregate number of Optional Shares to be purchased and the date on which such Optional Shares are to be delivered, as determined by you but in no event earlier than the First Time of Delivery (as defined in Section 4 hereof) or, unless you and the Company otherwise agree in writing, earlier than two or later than ten business days after the date of such notice.

3. Upon the authorization by you of the release of the Firm Shares, the several Underwriters propose to offer the Firm Shares for sale upon the terms and conditions set forth in the Prospectus. As part of the offering contemplated by this Agreement, Citigroup Global Markets Inc. has agreed to reserve out of the Shares set forth opposite its name on Schedule I hereto, up to [—] shares, for sale to certain individuals who are associated with the Company (collectively, "Participants"), as set forth in the Prospectus under the heading "Underwriting" (the "Directed Share Program"). The Shares to be sold by Citigroup Global Markets Inc. pursuant to the Directed Share Program (the "Directed Shares") will be sold by Citigroup Global Markets Inc. pursuant to this Agreement at the initial public offering price. Any Directed Shares not orally confirmed for purchase by any Participants by New York City time on the business day following the date on which this Agreement is executed will be offered to the public by Citigroup Global Markets Inc. as set forth in the Prospectus.

4. (a) The Shares to be purchased by each Underwriter hereunder, in definitive form, and in such authorized denominations and registered in such names as Goldman, Sachs & Co. may request upon at least forty-eight hours' prior notice to the Company shall be delivered by or on behalf of the Company to Goldman, Sachs & Co., through the facilities of the Depository Trust Company ("DTC"), for the account of such Underwriter, against payment by or on behalf of such Underwriter of the purchase price therefor by wire transfer of Federal (same-day) funds to the accounts specified by the Company to Goldman, Sachs & Co. at least forty-eight hours in advance. The Company will cause the certificates representing the Shares to be made available for checking and packaging at least twenty-four hours prior to the Time of Delivery (as defined below) with respect thereto at the office of DTC or its designated custodian (the "Designated Office"). The time and date of such delivery and payment shall be, with respect to the Firm Shares, 9:30 a.m., New York City time, on [—], 2014 or such other time and date as Goldman, Sachs & Co. and the Company may agree upon in writing, and, with respect to the Optional Shares, 9:30 a.m., New York City time, on the date specified by Goldman, Sachs & Co. in each written notice given by Goldman, Sachs & Co. of the Underwriters' election to purchase such Optional Shares, or such other time and date as Goldman, Sachs & Co. and the Company may agree upon in writing. Such time and date for delivery of the Firm Shares is herein called the "First Time of Delivery", each such time and date for delivery of the Optional Shares, if not the First Time of Delivery, is herein called the "Second Time of Delivery", and each such time and date for delivery is herein called a "Time of Delivery".

(b) The documents to be delivered at each Time of Delivery by or on behalf of the parties hereto pursuant to Section 8 hereof, including the cross receipt for the Shares and any additional documents requested by the Underwriters pursuant to Section 8(q) hereof will be delivered at the offices of Sullivan & Cromwell LLP, 1870 Embarcadero Road, Palo Alto, California 94303 (the "Closing Location"), and the Shares will be delivered at the Designated Office, all at such Time of Delivery. A meeting will be held at the Closing Location at 3:00 p.m., New York City time, on the New York Business Day next preceding such Time of Delivery, at which meeting the final drafts of the documents to be delivered pursuant to the preceding sentence will be available for review by the

parties hereto. For the purposes of this Section 4, “New York Business Day” shall mean each Monday, Tuesday, Wednesday, Thursday and Friday which is not a day on which banking institutions in New York City are generally authorized or obligated by law or executive order to close.

5. The Company agrees with each of the Underwriters:

(a) To prepare the Prospectus in a form approved by you and to file such Prospectus pursuant to Rule 424(b) under the Act not later than the Commission’s close of business on the second business day following the execution and delivery of this Agreement, or, if applicable, such earlier time as may be required by Rule 430A(a)(3) under the Act; to make no further amendment or any supplement to the Registration Statement or the Prospectus prior to the last Time of Delivery which shall be disapproved by you promptly after reasonable notice thereof; to advise you, promptly after it receives notice thereof, of the time when any amendment to the Registration Statement has been filed or becomes effective or any amendment or supplement to the Prospectus has been filed and to furnish you with copies thereof; to file promptly all materials required to be filed by the Company with the Commission pursuant to Rule 433(d) under the Act; to advise you, promptly after it receives notice thereof, of the issuance by the Commission of any stop order or of any order preventing or suspending the use of any Preliminary Prospectus or other prospectus in respect of the Shares, of the suspension of the qualification of the Shares for offering or sale in any jurisdiction, of the initiation or threatening of any proceeding for any such purpose, or of any request by the Commission for the amending or supplementing of the Registration Statement or the Prospectus or for additional information; and, in the event of the issuance of any stop order or of any order preventing or suspending the use of any Preliminary Prospectus or other prospectus or suspending any such qualification, to promptly use its best efforts to obtain the withdrawal of such order;

(b) Promptly from time to time to take such action as you may reasonably request to qualify the Shares for offering and sale under the securities laws of such jurisdictions as you may request and to comply with such laws so as to permit the continuance of sales and dealings therein in such jurisdictions for as long as may be necessary to complete the distribution of the Shares, provided that in connection therewith the Company shall not be required to qualify as a foreign corporation or to file a general consent to service of process in any jurisdiction;

(c) Prior to 10:00 a.m., New York City time, on the New York Business Day next succeeding the date of this Agreement (or such later time as may be agreed to by the Company and the Representatives on behalf of the Underwriters) and from time to time, to furnish the Underwriters with written and electronic copies of the Prospectus in New York City in such quantities as you may reasonably request, and, if the delivery of a prospectus (or in lieu thereof, the notice referred to in Rule 173(a) under the Act) is required at any time prior to the expiration of nine months after the time of issue of the Prospectus in connection with the offering or sale of the Shares and if at such time any event shall have occurred as a result of which the Prospectus as then amended or supplemented would include an untrue statement of a material fact or omit to state any material fact necessary in order to make the statements therein, in the light of the circumstances under which they were made when such Prospectus (or in lieu thereof, the notice referred to in Rule 173(a) under the Act) is delivered, not misleading, or, if for any other reason it shall be necessary during such same period to amend or supplement the Prospectus in order to comply with the Act, to notify you and upon your request to prepare and furnish without charge to each Underwriter and to any dealer in securities as many written and electronic copies as you may from time to time reasonably request of an amended Prospectus or a supplement to the Prospectus which will correct such statement or omission or effect such compliance; and in case any Underwriter is required to deliver a prospectus (or in lieu thereof, the notice referred to in Rule 173(a) under the Act) in connection with sales of any of the Shares at

any time nine months or more after the time of issue of the Prospectus, upon your request but at the expense of such Underwriter, to prepare and deliver to such Underwriter as many written and electronic copies as you may request of an amended or supplemented Prospectus complying with Section 10(a)(3) of the Act;

(d) To make generally available to its securityholders as soon as practicable, but in any event not later than sixteen months after the effective date of the Registration Statement (as defined in Rule 158(c) under the Act), an earnings statement of the Company and its subsidiaries (which need not be audited) complying with Section 11(a) of the Act and the rules and regulations of the Commission thereunder (including, at the option of the Company, Rule 158);

(e)(i) During the period beginning from the date hereof and continuing to and including the date 180 days after the date of the Prospectus (the "Company Lock-Up Period"), not to (A) offer, sell, contract to sell, pledge, grant any option to purchase, make any short sale or otherwise transfer or dispose of, directly or indirectly, or file with the Commission a registration statement under the Act relating to, any securities of the Company that are substantially similar to the Shares, including but not limited to, any options or warrants to purchase shares of Stock or any securities that are convertible into or exchangeable for, or that represent the right to receive, Stock or any such substantially similar securities, or publicly disclose the intention to make any offer, sale, pledge, disposition or filing or (B) enter into any swap or other agreement that transfers, in whole or in part, any of the economic consequences of ownership of the Stock or any such other securities, whether any such transaction described in clause (A) or (B) above is to be settled by delivery of Stock or such other securities, in cash or otherwise, without the prior written consent of the Representatives; provided, however, that the foregoing restrictions shall not apply to (1) the Shares to be sold hereunder, (2) the issuance by the Company of shares of Stock upon the exercise of an option or warrant, in each case, that is outstanding on the date of this Agreement and described in the Pricing Prospectus, (3) the issuance by the Company of Stock or other securities convertible into or exercisable for shares of Stock, in each case pursuant to the Company's stock plans, provided that such stock plans are described in the Pricing Prospectus, (4) the issuance by the Company of shares of Stock in connection with the conversion into shares of Stock of shares of preferred stock of the Company outstanding on the date of this Agreement and described in the Pricing Prospectus or (5) the issuance by the Company of Stock or any securities that are convertible into or exchangeable for, or that represent the right to receive, Stock in connection with any licensing, commercialization, joint venture, technology transfer or development collaboration agreement relating to the Company's product candidates and commercial credit, equipment financing or commercial property lease transactions; provided that, in the case of clause (5), the aggregate number of shares of Stock that the Company may sell or issue or agree to sell or issue shall not exceed 5% of the total number of shares of Stock issued and outstanding immediately following the First Time of Delivery; provided further that in the case of clauses (2) through (5), the Company shall cause each recipient of such securities to execute and deliver to you, on or prior to the issuance of such securities, a lock-up agreement with substantially the same terms as the lock-up agreements referenced in Section 8(o) of this Agreement for the remainder of the Company Lock-Up Period, and enter stop transfer instructions with the Company's transfer agent and registrar on such securities, which the Company agrees it will not waive or amend without the prior written consent of the Representatives, in their sole discretion;

(ii) If the Representatives, in their sole discretion, agree to release or waive the restrictions in lock-up letters pursuant to Section 8(o) hereof, in each case for an officer or director of the Company, and provide the Company with notice of the impending release or waiver at least three

business days before the effective date of the release or waiver, the Company agrees to announce the impending release or waiver by a press release substantially in the form of Annex I hereto through a major news service at least two business days before the effective date of the release or waiver;

(f) To furnish to its stockholders as soon as practicable after the end of each fiscal year an annual report (including a balance sheet and statements of income, stockholders' equity and cash flows of the Company and its consolidated subsidiaries certified by independent public accountants) and, as soon as practicable after the end of each of the first three quarters of each fiscal year (beginning with the fiscal quarter ending after the effective date of the Registration Statement), to make available to its stockholders consolidated summary financial information of the Company and its subsidiaries for such quarter in reasonable detail; provided that no reports, documents or other information need to be furnished pursuant to this Section 5(f) to the extent they are available on the Commission's Electronic Data Gathering, Analysis and Retrieval system ("EDGAR");

(g) During a period of five years from the effective date of the Registration Statement, to furnish to you copies of all reports or other communications (financial or other) furnished to stockholders, and to deliver to you (i) as soon as they are available, copies of any reports and financial statements furnished to or filed with the Commission or any national securities exchange on which any class of securities of the Company is listed and (ii) such additional information concerning the business and financial condition of the Company as you may from time to time reasonably request (such financial statements to be on a consolidated basis to the extent the accounts of the Company and its subsidiaries are consolidated in reports furnished to its stockholders generally or to the Commission); provided that no reports, documents or other information need to be furnished pursuant to this Section 5(g) to the extent they are available on EDGAR;

(h) To use the net proceeds received by it from the sale of the Shares pursuant to this Agreement in the manner specified in the Pricing Prospectus under the caption "Use of Proceeds";

(i) To use its best efforts to list for trading, subject to official notice of issuance, the Shares on The NASDAQ Stock Market (the "Exchange");

(j) To file with the Commission such information on Form 10-Q or Form 10-K as may be required by Rule 463 under the Act;

(k) If the Company elects to rely upon Rule 462(b), the Company shall file a Rule 462(b) Registration Statement with the Commission in compliance with Rule 462(b) by 10:00 p.m., Washington, D.C. time, on the date of this Agreement, and the Company shall at the time of filing either pay to the Commission the filing fee for the Rule 462(b) Registration Statement or give irrevocable instructions for the payment of such fee pursuant to Rule 3a(c) of the Commission's Informal and Other Procedures (16 CFR 202.3a);

(l) Upon request of any Underwriter, to furnish, or cause to be furnished, to such Underwriter an electronic version of the Company's trademarks, servicemarks and corporate logo for use on the website, if any, operated by such Underwriter for the purpose of facilitating the on-line offering of the Shares (the "License"); provided, however, that the License shall be used solely for the purpose described above, is granted without any fee and may not be assigned or transferred;

(m) To promptly notify you if the Company ceases to be an Emerging Growth Company at any time prior to the later of (i) completion of the distribution of the Shares within the meaning of the Act and (ii) completion of the Company Lock-Up Period;

(n) That notwithstanding Section 7 hereto, the Company agrees to pay (1) all fees and disbursements of counsel incurred by the Underwriters in connection with the Directed Share Program, (2) all costs and expenses incurred by the Underwriters in connection with the printing (or reproduction) and delivery (including postage, air freight charges and charges for counting and packaging) of copies of the Directed Share Program material and (3) all stamp duties, similar taxes or duties or other taxes, if any, incurred by the Underwriters in connection with the Directed Share Program; and

(o) That the Company will comply with all applicable securities and other applicable laws, rules and regulations in each foreign jurisdiction in which the Directed Shares are offered in connection with the Directed Share Program.

6. (a) The Company represents and agrees that, without the prior consent of Goldman, Sachs & Co., it has not made and will not make any offer relating to the Shares that would constitute a “free writing prospectus” as defined in Rule 405 under the Act and each Underwriter represents and agrees that, without the prior consent of the Company and Goldman, Sachs & Co., it has not made and will not make any offer relating to the Shares that would constitute a free writing prospectus; any such free writing prospectus the use of which has been consented to by the Company and Goldman, Sachs & Co. is listed on Schedule II(a) hereto;

(b) The Company represents and agrees that (i) it has not engaged in, or authorized any other person to engage in, any Section 5(d) Communications, other than Section 5(d) Communications with the prior consent of Goldman, Sachs & Co. with entities that are qualified institutional buyers as defined in Rule 144A under the Act or institutions that are accredited investors as defined in Rule 501(a) under the Act; and (ii) it has not distributed, or authorized any other person to distribute, any Section 5(d) Writings, other than those distributed with the prior consent of Goldman, Sachs & Co. that are listed on Schedule II(b) hereto; and the Company reconfirms that the Underwriters have been authorized to act on its behalf in engaging in Section 5(d) Communications;

(c) The Company has complied and will comply with the requirements of Rule 433 under the Act applicable to any Issuer Free Writing Prospectus, including timely filing with the Commission or retention where required and legending; and the Company represents that it has satisfied and agrees that it will satisfy the conditions under Rule 433 under the Act to avoid a requirement to file with the Commission any electronic road show;

(d) Each Underwriter represents and agrees that (i) any Section 5(d) Communications undertaken by it were with entities that are qualified institutional buyers as defined in Rule 144A under the Act or institutions that are accredited investors as defined in Rule 501(a) under the Act and (ii) will not distribute or authorize any other person to distribute, any Section 5(d) Writings, other than those distributed with the prior consent of the Company; and

(e) The Company agrees that if at any time following issuance of an Issuer Free Writing Prospectus or Section 5(d) Writing any event occurred or occurs as a result of which such Issuer Free Writing Prospectus or Section 5(d) Writing would conflict with the information in the Registration Statement, the Pricing Prospectus or the Prospectus or would include an untrue statement of a material fact or omit to state any material fact necessary in order to make the statements therein, in the light of the circumstances then prevailing, not misleading, the Company will give prompt notice thereof to Goldman, Sachs & Co. and, if requested by Goldman, Sachs & Co., will prepare and furnish without charge to each Underwriter an Issuer Free Writing Prospectus, Section 5(d) Writing or other document which will correct such conflict, statement or omission; provided, however, that this

covenant shall not apply to any statements or omissions in an Issuer Free Writing Prospectus or Section 5(d) Writing made in reliance upon and in conformity with information furnished in writing to the Company by an Underwriter through Goldman, Sachs & Co. expressly for use therein.

7. The Company covenants and agrees with the several Underwriters that the Company will pay or cause to be paid the following: (i) the fees, disbursements and expenses of the Company's counsel and accountants in connection with the registration of the Shares under the Act and all other expenses incurred in connection with the preparation, printing, reproduction and filing of the Registration Statement, any Preliminary Prospectus, any Issuer Free Writing Prospectus and the Prospectus and amendments and supplements thereto and the mailing and delivering of copies thereof to the Underwriters and dealers; (ii) the cost of printing or otherwise reproducing any Agreement among Underwriters, this Agreement, the Blue Sky Memorandum, closing documents (including any compilations thereof) and any other documents in connection with the offering, purchase, sale and delivery of the Shares; (iii) all expenses incurred in connection with the qualification of the Shares for offering and sale under state securities laws as provided in Section 5(b) hereof, including up to a maximum of $2,500 of fees and disbursements of counsel for the Underwriters, in connection with such qualification and in connection with the Blue Sky survey; (iv) all fees and expenses in connection with listing the Shares on the Exchange; (v) the filing fees incident to, and up to a maximum of $30,000 of fees and disbursements of counsel for the Underwriters in connection with, any required review by FINRA of the terms of the sale of the Shares; (vi) the cost of preparing stock certificates, if applicable; (vii) the cost and charges of any transfer agent or registrar and (viii) all other costs and expenses incident to the performance of its obligations hereunder which are not otherwise specifically provided for in this Section 7; provided, however, that with respect to costs associated with the "road show" undertaken in connection with the marketing of the Shares, (A) the Company shall pay the costs relating to investor presentations, including, without limitation, expenses associated with the production of road show slides and graphics and fees and expenses of any consultants engaged in connection with the road show presentations, (B) the Company and the Underwriters shall each pay their respective lodging expenses in connection with attending such presentations or meetings and (C) the Company and the Underwriters shall each pay their respective travel expenses in connection with attending such presentations, except that the cost of any aircraft chartered in connection with the road show shall be paid 50% by the Company and 50% by the Underwriters. It is understood, however, that except as provided in this Section 7, and Sections 9 and 12 hereof, the Underwriters will pay all of their own costs and expenses, including the fees of their counsel, stock transfer taxes on resale of any of the Shares by them, and any advertising expenses connected with any offers they may make.

8. The obligations of the Underwriters hereunder, as to the Shares to be delivered at each Time of Delivery, shall be subject, in their discretion, to the condition that all representations and warranties and other statements of the Company herein are, at and as of such Time of Delivery, true and correct, the condition that the Company shall have performed all of its obligations hereunder theretofore to be performed, and the following additional conditions:

(a) The Prospectus shall have been filed with the Commission pursuant to Rule 424(b) under the Act within the applicable time period prescribed for such filing by the rules and regulations under the Act and in accordance with Section 5(a) hereof; all material required to be filed by the Company pursuant to Rule 433(d) under the Act shall have been filed with the Commission within the applicable time period prescribed for such filing by Rule 433; if the Company has elected to rely upon Rule 462(b) under the Act, the Rule 462(b) Registration Statement shall have become effective by 10:00 p.m., Washington, D.C. time, on the date of this Agreement; no stop order suspending the effectiveness of the

Registration Statement or any part thereof shall have been issued and no proceeding for that purpose shall have been initiated or threatened by the Commission no stop order suspending or preventing the use of the Prospectus or any Issuer Free Writing Prospectus shall have been initiated or threatened by the Commission; and all requests for additional information on the part of the Commission shall have been complied with to your reasonable satisfaction;

(b) Sullivan & Cromwell LLP, counsel for the Underwriters, shall have furnished to you such written opinion or opinions, dated such Time of Delivery, in form and substance satisfactory to you, with respect to such matters as you may reasonably request, and such counsel shall have received such papers and information as they may reasonably request to enable them to pass upon such matters;

(c) Cooley LLP, counsel for the Company, shall have furnished to you their written opinion, dated such Time of Delivery, in form and substance satisfactory to you;

(d) Leanne Price, intellectual property counsel for the Company, shall have furnished to the Underwriters her written opinion, dated each Time of Delivery, in form and substance satisfactory to you;

(e) DeHeng Law Offices, PRC counsel for the Company, shall have furnished to the Company their written opinion, dated each Time of Delivery, in form and substance satisfactory to you;

(f) DLA Piper Hong Kong, Hong Kong counsel for the Company, shall have furnished to the Underwriters their written opinion, dated each Time of Delivery, in form and substance satisfactory to you;

(g) Ogier LLP, Cayman Islands counsel for the Company, shall have furnished to the Underwriters their written opinion, dated each Time of Delivery, in form and substance satisfactory to you;

(h) Appleby (Cayman) Ltd., Cayman Islands counsel for the Company, shall have furnished to the Underwriters their written opinion, dated each Time of Delivery, in form and substance satisfactory to you;

(i) White & Case LLP, Finnish counsel for the Company, shall have furnished to the Underwriters their written opinion, dated each Time of Delivery, in form and substance satisfactory to you;

(j) On the date of the Prospectus at a time prior to the execution of this Agreement, at 9:30 a.m., New York City time, on the effective date of any post-effective amendment to the Registration Statement filed subsequent to the date of this Agreement and also at each Time of Delivery, PricewaterhouseCoopers LLP shall have furnished to you a letter or letters, dated the respective dates of delivery thereof, in form and substance satisfactory to you;

(k)(i) Neither the Company nor any of its subsidiaries shall have sustained since the date of the latest audited financial statements included in the Pricing Prospectus any loss or interference with its business from fire, explosion, flood or other calamity, whether or not covered by insurance, or from any labor dispute or court or governmental action, order or decree, otherwise than as set forth or contemplated in the Pricing Prospectus and (ii) since the respective dates as of which information is given in the Pricing Prospectus there shall not have been any change in the capital stock or long-term debt of the Company or any of its subsidiaries or any change, or any development involving a

prospective change, in or affecting the general affairs, management, financial position, stockholders' equity or results of operations of the Company and its subsidiaries, otherwise than as set forth or contemplated in the Pricing Prospectus, the effect of which, in any such case described in clause (i) or (ii), is in your judgment so material and adverse as to make it impracticable or inadvisable to proceed with the public offering or the delivery of the Shares being delivered at such Time of Delivery on the terms and in the manner contemplated in the Pricing Prospectus;

(l) On or after the Applicable Time (i) no downgrading shall have occurred in the rating accorded the Company's debt securities by any "nationally recognized statistical rating organization", as defined in Section 3(a)(62) of the Exchange Act and (ii) no such organization shall have publicly announced that it has under surveillance or review, with possible negative implications, its rating of any of the Company's debt securities;

(m) On or after the Applicable Time there shall not have occurred any of the following: (i) a suspension or material limitation in trading in securities generally on the Exchange; (ii) a suspension or material limitation in trading in the Company's securities on the Exchange; (iii) a general moratorium on commercial banking activities declared by either Federal or New York or California State authorities or a material disruption in commercial banking or securities settlement or clearance services in the United States; (iv) the outbreak or escalation of hostilities involving the United States or the declaration by the United States of a national emergency or war or (v) the occurrence of any other calamity or crisis or any change in financial, political or economic conditions in the United States or elsewhere, if the effect of any such event specified in clause (iv) or (v) in your judgment makes it impracticable or inadvisable to proceed with the public offering or the delivery of the Shares being delivered at such Time of Delivery on the terms and in the manner contemplated in the Prospectus;

(n) The Shares to be sold at such Time of Delivery shall have been duly listed, subject to official notice of issuance, on the Exchange;

(o) The Company shall have obtained and delivered to the Underwriters executed copies of an agreement from (i) each holder named in a list of holders of the Company's securities satisfactory to you, (ii) each member of the Company's board of directors, (iii) each officer of the Company and (iv) certain other holders of the Company's securities as you may request, substantially to the effect set forth in Annex II hereto in form and substance satisfactory to you;

(p) The Company shall have complied with the provisions of Section 5(c) hereof with respect to the furnishing of prospectuses on the New York Business Day next succeeding the date of this Agreement; and

(q) The Company shall have furnished or caused to be furnished to you at such Time of Delivery certificates of officers of the Company, satisfactory to you as to the accuracy of the representations and warranties of the Company herein at and as of such Time of Delivery, as to the performance by the Company of all of its obligations hereunder to be performed at or prior to such Time of Delivery, and as to such other matters as you may reasonably request, and the Company shall have furnished or caused to be furnished certificates as to the matters set forth in subsections (a) and (k) of this Section 8.

9. (a) The Company will indemnify and hold harmless each Underwriter against any losses, claims, damages or liabilities, joint or several, to which such Underwriter may become subject, under the Act or otherwise, insofar as such losses, claims, damages or liabilities (or actions in respect thereof) arise out of or are based upon an untrue statement or alleged untrue statement of a material fact contained in the Registration Statement, any Preliminary Prospectus, the Pricing Prospectus or

the Prospectus, or any amendment or supplement thereto, any Issuer Free Writing Prospectus or any "issuer information" filed or required to be filed pursuant to Rule 433(d) under the Act or any Section 5(d) Writing, or arise out of or are based upon the omission or alleged omission to state therein a material fact required to be stated therein or necessary to make the statements therein not misleading, and will reimburse each Underwriter for any legal or other expenses reasonably incurred by such Underwriter in connection with investigating or defending any such action or claim as such expenses are incurred; provided, however, that the Company shall not be liable in any such case to the extent that any such loss, claim, damage or liability arises out of or is based upon an untrue statement or alleged untrue statement or omission or alleged omission made in the Registration Statement, any Preliminary Prospectus, the Pricing Prospectus or the Prospectus, or any amendment or supplement thereto, any Issuer Free Writing Prospectus or any Section 5(d) Writing, in reliance upon and in conformity with written information furnished to the Company by any Underwriter through Goldman, Sachs & Co. expressly for use therein.

(b) Each Underwriter will indemnify and hold harmless the Company against any losses, claims, damages or liabilities to which the Company may become subject, under the Act or otherwise, insofar as such losses, claims, damages or liabilities (or actions in respect thereof) arise out of or are based upon an untrue statement or alleged untrue statement of a material fact contained in the Registration Statement, any Preliminary Prospectus, the Pricing Prospectus or the Prospectus, or any amendment or supplement thereto, any Issuer Free Writing Prospectus or any Section 5(d) Writing, or arise out of or are based upon the omission or alleged omission to state therein a material fact required to be stated therein or necessary to make the statements therein not misleading, in each case to the extent, but only to the extent, that such untrue statement or alleged untrue statement or omission or alleged omission was made in the Registration Statement, any Preliminary Prospectus, the Pricing Prospectus or the Prospectus, or any amendment or supplement thereto, any Issuer Free Writing Prospectus or any Section 5(d) Writing, in reliance upon and in conformity with written information furnished to the Company by such Underwriter through the Representatives expressly for use therein; and will reimburse the Company for any legal or other expenses reasonably incurred by the Company in connection with investigating or defending any such action or claim as such expenses are incurred.

(c) The Company agrees to indemnify and hold harmless Citigroup Global Markets Inc., the directors, officers, employees, affiliates and agents of Citigroup Global Markets Inc. and each person, who controls Citigroup Global Markets Inc. within the meaning of either the Act or the Exchange Act ("Citigroup Entities"), from and against any and all losses, claims, damages and liabilities to which they may become subject under the Act, the Exchange Act or other Federal or state statutory law or regulation, at common law or otherwise (including, without limitation, any legal or other expenses reasonably incurred in connection with defending or investigating any such action or claim), insofar as such losses, claims damages or liabilities (or actions in respect thereof) (i) arise out of or are based upon any untrue statement or alleged untrue statement of a material fact contained in the prospectus wrapper material prepared by or with the consent of the Company for distribution in foreign jurisdictions in connection with the Directed Share Program attached to the Prospectus, any preliminary prospectus or any Issuer Free Writing Prospectus, or arise out of or are based upon the omission or alleged omission to state therein a material fact required to be stated therein or necessary to make the statement therein, when considered in conjunction with the Prospectus or any applicable preliminary prospectus, not misleading; (ii) are caused by the failure of any Participant to pay for and accept delivery of the securities which immediately following the effective date of the Registration Statement, were subject to a properly confirmed agreement to purchase; or (iii) are related to, arising out of, or in connection with the Directed Share Program, except that this clause (iii)

shall not apply to the extent that such loss, claim, damage or liability is finally judicially determined to have resulted primarily from the gross negligence or willful misconduct of the Citigroup Entities.

(d) Promptly after receipt by an indemnified party under subsection (a), (b) or (c) of this Section 9 of notice of the commencement of any action, such indemnified party shall, if a claim in respect thereof is to be made against the indemnifying party under such subsection, notify the indemnifying party in writing of the commencement thereof; but the omission so to notify the indemnifying party shall not relieve it from any liability which it may have to any indemnified party otherwise than under such subsection. In case any such action shall be brought against any indemnified party and it shall notify the indemnifying party of the commencement thereof, the indemnifying party shall be entitled to participate therein and, to the extent that it shall wish, jointly with any other indemnifying party similarly notified, to assume the defense thereof, with counsel reasonably satisfactory to such indemnified party (who shall not, except with the consent of the indemnified party, be counsel to the indemnifying party), and, after notice from the indemnifying party to such indemnified party of its election so to assume the defense thereof, the indemnifying party shall not be liable to such indemnified party under such subsection for any legal expenses of other counsel or any other expenses, in each case subsequently incurred by such indemnified party, in connection with the defense thereof other than reasonable costs of investigation. No indemnifying party shall, without the written consent of the indemnified party, effect the settlement or compromise of, or consent to the entry of any judgment with respect to, any pending or threatened action or claim in respect of which indemnification or contribution may be sought hereunder (whether or not the indemnified party is an actual or potential party to such action or claim) unless such settlement, compromise or judgment (i) includes an unconditional release of the indemnified party from all liability arising out of such action or claim and (ii) does not include a statement as to or an admission of fault, culpability or a failure to act, by or on behalf of any indemnified party. Notwithstanding anything contained herein to the contrary, if indemnity may be sought pursuant to subsection (c) of this Section 9 in respect of such action or proceeding, then in addition to such separate firm for the indemnified parties, the indemnifying party shall be liable for the reasonable fees and expenses of not more than one separate firm (in addition to any local counsel) for Citigroup Global Markets Inc., the directors, officers, employees and agents of Citigroup Global Markets Inc., and all persons, if any, who control Citigroup Global Markets Inc. within the meaning of either the Act or the Exchange Act for the defense of any losses, claims, damages and liabilities arising out of the Directed Share Program.

(e) If the indemnification provided for in this Section 9 is unavailable to or insufficient to hold harmless an indemnified party under subsection (a), (b) or (c) of this Section 9 in respect of any losses, claims, damages or liabilities (or actions in respect thereof) referred to therein, then each indemnifying party shall contribute to the amount paid or payable by such indemnified party as a result of such losses, claims, damages or liabilities (or actions in respect thereof) in such proportion as is appropriate to reflect the relative benefits received by the Company on the one hand and the Underwriters on the other from the offering of the Shares. If, however, the allocation provided by the immediately preceding sentence is not permitted by applicable law or if the indemnified party failed to give the notice required under subsection (d) above, then each indemnifying party shall contribute to such amount paid or payable by such indemnified party in such proportion as is appropriate to reflect not only such relative benefits but also the relative fault of the Company on the one hand and the Underwriters on the other in connection with the statements or omissions which resulted in such losses, claims, damages or liabilities (or actions in respect thereof), as well as any other relevant equitable considerations. The relative benefits received by the Company on the one hand and the Underwriters on the other shall be deemed to be in the same proportion as the total net proceeds from the offering (before deducting expenses) received by the Company bear to the total underwriting

discounts and commissions received by the Underwriters, in each case as set forth in the table on the cover page of the Prospectus. The relative fault shall be determined by reference to, among other things, whether the untrue or alleged untrue statement of a material fact or the omission or alleged omission to state a material fact relates to information supplied by the Company on the one hand or the Underwriters on the other and the parties' relative intent, knowledge, access to information and opportunity to correct or prevent such statement or omission. The Company and the Underwriters agree that it would not be just and equitable if contribution pursuant to this subsection (e) were determined by pro rata allocation (even if the Underwriters were treated as one entity for such purpose) or by any other method of allocation which does not take account of the equitable considerations referred to above in this subsection (e). The amount paid or payable by an indemnified party as a result of the losses, claims, damages or liabilities (or actions in respect thereof) referred to above in this subsection (e) shall be deemed to include any legal or other expenses reasonably incurred by such indemnified party in connection with investigating or defending any such action or claim. Notwithstanding the provisions of this subsection (e), no Underwriter shall be required to contribute any amount in excess of the amount by which the total price at which the Shares underwritten by it and distributed to the public were offered to the public exceeds the amount of any damages which such Underwriter has otherwise been required to pay by reason of such untrue or alleged untrue statement or omission or alleged omission. No person guilty of fraudulent misrepresentation (within the meaning of Section 11(f) of the Act) shall be entitled to contribution from any person who was not guilty of such fraudulent misrepresentation. The Underwriters' obligations in this subsection (e) to contribute are several in proportion to their respective underwriting obligations and not joint.

(f) The obligations of the Company under this Section 9 shall be in addition to any liability which the Company may otherwise have and shall extend, upon the same terms and conditions, to each officer and director of each Underwriter and each person, if any, who controls any Underwriter within the meaning of the Act, each broker-dealer affiliate of any Underwriter and each selling agent of any Underwriter; and the obligations of the Underwriters under this Section 9 shall be in addition to any liability which the respective Underwriters may otherwise have and shall extend, upon the same terms and conditions, to each officer and director of the Company and to each person, if any, who controls the Company within the meaning of the Act.

10. (a) If any Underwriter shall default in its obligation to purchase the Shares that it has agreed to purchase hereunder at a Time of Delivery, you may in your discretion arrange for you or another party or other parties to purchase such Shares on the terms contained herein. If within thirty-six hours after such default by any Underwriter you do not arrange for the purchase of such Shares, then the Company shall be entitled to a further period of thirty-six hours within which to procure another party or other parties satisfactory to you to purchase such Shares on such terms. In the event that, within the respective prescribed periods, you notify the Company that you have so arranged for the purchase of such Shares, or the Company notifies you that it has so arranged for the purchase of such Shares, you or the Company shall have the right to postpone such Time of Delivery for a period of not more than seven days, in order to effect whatever changes may thereby be made necessary in the Registration Statement or the Prospectus, or in any other documents or arrangements, and the Company agrees to file promptly any amendments or supplements to the Registration Statement or the Prospectus which in your opinion may thereby be made necessary. The term "Underwriter" as used in this Agreement shall include any person substituted under this Section 10 with like effect as if such person had originally been a party to this Agreement with respect to such Shares.

(b) If, after giving effect to any arrangements for the purchase of the Shares of a defaulting Underwriter or Underwriters by you and the Company as provided in subsection (a) of this Section 10, the aggregate number of such Shares which remains unpurchased does not exceed one-eleventh of the aggregate number of all the Shares to be purchased at such Time of Delivery, then the Company shall have the right to require each non-defaulting Underwriter to purchase the number of Shares which such Underwriter agreed to purchase hereunder at such Time of Delivery and, in addition, to require each non-defaulting Underwriter to purchase its pro rata share (based on the number of Shares which such Underwriter agreed to purchase hereunder) of the Shares of such defaulting Underwriter or Underwriters for which such arrangements have not been made; but nothing herein shall relieve a defaulting Underwriter from liability for its default.

(c) If, after giving effect to any arrangements for the purchase of the Shares of a defaulting Underwriter or Underwriters by you and the Company as provided in subsection (a) of this Section 10, the aggregate number of such Shares which remains unpurchased exceeds one-eleventh of the aggregate number of all of the Shares to be purchased at such Time of Delivery, or if the Company shall not exercise the right described in subsection (b) of this Section 10 to require non-defaulting Underwriters to purchase Shares of a defaulting Underwriter or Underwriters, then this Agreement (or, with respect to a Second Time of Delivery, the obligations of the Underwriters to purchase and of the Company to sell the Optional Shares) shall thereupon terminate, without liability on the part of any non-defaulting Underwriter or the Company, except for the expenses to be borne by the Company and the Underwriters as provided in Section 7 hereof and the indemnity and contribution agreements in Section 9 hereof; but nothing herein shall relieve a defaulting Underwriter from liability for its default.

11. The respective indemnities, agreements, representations, warranties and other statements of the Company and the several Underwriters, as set forth in this Agreement or made by or on behalf of them, respectively, pursuant to this Agreement, shall remain in full force and effect, regardless of any investigation (or any statement as to the results thereof) made by or on behalf of any Underwriter or any controlling person of any Underwriter, or the Company, or any officer or director or controlling person of the Company, and shall survive delivery of and payment for the Shares.

12. If this Agreement shall be terminated pursuant to Section 10 hereof, the Company shall not then be under any liability to any Underwriter except as provided in Sections 7 and 9 hereof; but, if for any other reason any Shares are not delivered by or on behalf of the Company as provided herein, the Company will reimburse the Underwriters through you for all out-of-pocket expenses approved in writing by you, including fees and disbursements of counsel, reasonably incurred by the Underwriters in making preparations for the purchase, sale and delivery of the Shares not so delivered, but the Company shall then be under no further liability to any Underwriter except as provided in Sections 7 and 9 hereof.

13. In all dealings hereunder, you shall act on behalf of each of the Underwriters, and the parties hereto shall be entitled to act and rely upon any statement, request, notice or agreement on behalf of any Underwriter made or given by you jointly or by Goldman, Sachs & Co. on behalf of you as the Representatives.

In accordance with the requirements of the USA Patriot Act (Title III of Pub. L. 107-56 (signed into law October 26, 2001)), the Underwriters are required to obtain, verify and record information that identifies their respective clients, including the Company, which information may include the name

and address of their respective clients, as well as other information that will allow the Underwriters to properly identify their respective clients.

All statements, requests, notices and agreements hereunder shall be in writing, and if to the Underwriters shall be delivered or sent by mail, telex or facsimile transmission to Goldman, Sachs & Co., 200 West Street, New York, New York 10282, Attention: Registration Department; Citigroup Global Markets Inc. General Counsel (fax no.: (212) 816 7912) and confirmed to the General Counsel, Citigroup Global Markets Inc., at 388 Greenwich Street, New York, New York, 10013, Attention: General Counsel; and Leerink Partners LLC, One Federal Street, 37F, Boston, MA 02110, Facsimile: (617) 918-4664, Attention: John I. Fitzgerald; if to the Company shall be delivered or sent by mail, telex or facsimile transmission to the address of the Company set forth on the cover of the Registration Statement, Attention: Michael Lowenstein, Vice President, Legal Affairs; and if to any stockholder that has delivered a lock-up letter described in Section 8(o) hereof shall be delivered or sent by mail to his or her respective address as such stockholder provides in writing to the Company; provided, however, that any notice to an Underwriter pursuant to Section 9(d) hereof shall be delivered or sent by mail, telex or facsimile transmission to such Underwriter at its address set forth in its Underwriters' Questionnaire, or telex constituting such Questionnaire, which address will be supplied to the Company by you upon request. Any such statements, requests, notices or agreements shall take effect upon receipt thereof.

14. This Agreement shall be binding upon, and inure solely to the benefit of, the Underwriters and the Company and, to the extent provided in Sections 9 and 11 hereof, the officers and directors of the Company and each person who controls the Company or any Underwriter, and their respective heirs, executors, administrators, successors and assigns, and no other person shall acquire or have any right under or by virtue of this Agreement. No purchaser of any of the Shares from any Underwriter shall be deemed a successor or assign by reason merely of such purchase.

15. Time shall be of the essence of this Agreement. As used herein, the term "business day" shall mean any day when the Commission's office in Washington, D.C. is open for business.

16. The Company acknowledges and agrees that (a) the purchase and sale of the Shares pursuant to this Agreement is an arm's-length commercial transaction between the Company, on the one hand, and the several Underwriters, on the other; (b) in connection therewith and with the process leading to such transaction each Underwriter is acting solely as a principal and not the agent or fiduciary of the Company; (c) no Underwriter has assumed an advisory or fiduciary responsibility in favor of the Company with respect to the offering contemplated hereby or the process leading thereto (irrespective of whether such Underwriter has advised or is currently advising the Company on other matters) or any other obligation to the Company except the obligations expressly set forth in this Agreement and (d) the Company has consulted its own legal and financial advisors to the extent it deemed appropriate. The Company agrees that it will not claim that the Underwriters, or any of them, has rendered advisory services of any nature or respect, or owes a fiduciary or similar duty to the Company, in connection with such transaction or the process leading thereto.

17. This Agreement supersedes all prior agreements and understandings (whether written or oral) between the Company and the Underwriters, or any of them, with respect to the subject matter hereof.

18. THIS AGREEMENT AND ANY MATTERS RELATED TO THIS TRANSACTION SHALL BE GOVERNED BY AND CONSTRUED IN ACCORDANCE WITH THE LAWS OF THE STATE OF NEW YORK WITHOUT REGARD TO PRINCIPLES OF CONFLICT OF LAWS THAT WOULD RESULT IN THE APPLICATION OF ANY LAW OTHER THAN THE LAWS OF THE STATE OF NEW

YORK. The Company agrees that any suit or proceeding arising in respect of this agreement or our engagement will be tried exclusively in the U.S. District Court for the Southern District of New York or, if that court does not have subject matter jurisdiction, in any state court located in The City and County of New York and the Company agrees to submit to the jurisdiction of, and to venue in, such courts.

19. The Company and each of the Underwriters hereby irrevocably waives, to the fullest extent permitted by applicable law, any and all right to trial by jury in any legal proceeding arising out of or relating to this Agreement or the transactions contemplated hereby.

20. This Agreement may be executed by any one or more of the parties hereto in any number of counterparts, each of which shall be deemed to be an original, but all such counterparts shall together constitute one and the same instrument.

21. Notwithstanding anything herein to the contrary, the Company is authorized to disclose to any persons the U.S. federal and state income tax treatment and tax structure of the potential transaction and all materials of any kind (including tax opinions and other tax analyses) provided to the Company relating to that treatment and structure, without the Underwriters imposing any limitation of any kind. However, any information relating to the tax treatment and tax structure shall remain confidential (and the foregoing sentence shall not apply) to the extent necessary to enable any person to comply with securities laws. For this purpose, "tax structure" is limited to any facts that may be relevant to that treatment.

If the foregoing is in accordance with your understanding, please indicate your acceptance of this letter by signing in the space provided below, and upon the acceptance hereof by you, on behalf of each of the Underwriters, this letter and such acceptance hereof shall constitute a binding agreement among each of the Underwriters and the Company. It is understood that your acceptance of this letter on behalf of each of the Underwriters is pursuant to the authority set forth in a form of Agreement among Underwriters, the form of which shall be submitted to the Company for examination, upon request, but without warranty on your part as to the authority of the signers thereof.

[*Signature page follows*]

Very truly yours,

FibroGen, Inc.

By: _____
Name:
Title:

Accepted as of the date hereof:

GOLDMAN, SACHS & CO.

By: _____
Name:
Title:

CITIGROUP GLOBAL MARKETS INC.

By: _____
Name:
Title:

LEERINK PARTNERS LLC

By: _____
Name:
Title:

On behalf of each of the Underwriters

SCHEDULE I

Underwriter	Total Number of Firm Shares to be Purchased	Number of Optional Shares to be Purchased if Maximum Option Exercised
Goldman, Sachs & Co.		
Citigroup Global Markets Inc.		
Leerink Partners LLC		
RBC Capital Markets, LLC		
Stifel, Nicolaus & Company, Incorporated		
William Blair & Company, L.L.C.		
Total		

SCHEDULE II

(a) Issuer Free Writing Prospectuses

[None]

(b) Section 5(d) Writings

[—]

(c) Information other than the Pricing Prospectus that comprise the Pricing Disclosure Package

The initial public offering price per share for the Shares is $[—].

The number of Shares purchased by the Underwriters is [—].

[Add any other pricing disclosure]

ANNEX I

FORM OF PRESS RELEASE

FibroGen, Inc.
[Date]

FibroGen, Inc. (the "Company") announced today that , book-running managers in the recent public sale of shares of the Company's common stock, are [waiving] [releasing] a lock-up restriction with respect to shares of the Company's common stock held by [certain officers or directors] [an officer or director] of the Company. The [waiver] [release] will take effect on , 20 , and the shares may be sold on or after such date.

This press release is not an offer for sale of the securities in the United States or in any other jurisdiction where such offer is prohibited, and such securities may not be offered or sold in the United States absent registration or an exemption from registration under the United States Securities Act of 1933, as amended.

ANNEX II

FORM OF LOCK-UP AGREEMENT

FibroGen, Inc.

Lock-Up Agreement

_____, 2014

Goldman, Sachs & Co.,
Citigroup Global Markets Inc.,
Leerink Partners LLC,
As representatives of the several Underwriters

c/o Goldman, Sachs & Co.,
200 West Street,
New York, New York 10282-2198,

c/o Citigroup Global Markets Inc.,
388 Greenwich Street,
New York, New York 10013,

c/o Leerink Partners LLC,
201 Spear Street, 16F,
San Francisco, California 94105.

Re: FibroGen, Inc. - Lock-Up Agreement

Ladies and Gentlemen:

The undersigned understands that you, as representatives (the "Representatives"), propose to enter into an Underwriting Agreement on behalf of the several Underwriters named in Schedule I to such agreement (collectively, the "Underwriters"), with FibroGen, Inc., a Delaware corporation (the "Company"), providing for a public offering (the "Public Offering") of Common Stock, par value $0.01 per share (the "Stock") of the Company (the "Shares") pursuant to a Registration Statement on Form S-1 to be filed with the Securities and Exchange Commission (the "SEC").

In consideration of the agreement by the Underwriters to offer and sell the Shares, and of other good and valuable consideration the receipt and sufficiency of which is hereby acknowledged, the undersigned agrees that, during the period specified in the following paragraph (the "Stockholder Lock-Up Period"), the undersigned will not offer, sell, contract to sell, pledge, grant any option to purchase, make any short sale or otherwise dispose of any shares of Stock, or any options or warrants to purchase any shares of Stock, or any securities convertible into, exchangeable for or that represent the right to receive shares of Stock, whether now owned or hereafter acquired, owned directly by the undersigned (including holding as a custodian) or with respect to which the undersigned has beneficial ownership within the rules and regulations of the SEC (collectively, the "Undersigned's Shares"). The foregoing restriction is expressly agreed to preclude the undersigned from engaging in any hedging or other transaction which is designed to or which reasonably could be expected to lead to or result in a sale or disposition of the Undersigned's Shares even if such shares would be disposed of by someone other than the undersigned. Such prohibited hedging or other transactions would include without limitation any short sale or any purchase, sale or grant of any right (including

without limitation any put or call option) with respect to any of the Undersigned's Shares or with respect to any security that includes, relates to, or derives any significant part of its value from such shares. In addition, the undersigned hereby agrees that the undersigned will not make any demand for exercise of any right with respect to the registration of any shares of Stock or any security convertible into or exercisable or exchangeable for Stock during the Stockholder Lock-Up Period.

The Stockholder Lock-Up Period will commence on the date of this Lock-Up Agreement and continue for 180 days after the public offering date set forth on the final prospectus (the "Final Prospectus") used to sell the Shares pursuant to the Underwriting Agreement.

If the undersigned is an officer or director of the Company, (1) the undersigned further agrees that the foregoing restrictions shall be equally applicable to any issuer-directed Shares the undersigned may purchase in the Public Offering, (2) the Representatives agree that, at least three business days before the effective date of any release or waiver of the foregoing restrictions in connection with a transfer of Stock, they will notify the Company of the impending release or waiver, and (3) the Company has agreed in Section 5(e)(ii) of the Underwriting Agreement to announce the impending release or waiver by press release through a major news service at least two business days before the effective date of the release or waiver. Any release or waiver granted by the Representatives hereunder to any such officer or director shall only be effective two business days after the publication date of such press release. The provisions of this paragraph will not apply if (a) the release or waiver is effected solely to permit a transfer not for consideration and (b) the transferee has agreed in writing to be bound by the same terms described in this letter to the extent and for the duration that such terms remain in effect at the time of the transfer.

Notwithstanding the foregoing, the undersigned may

(a) transfer the Undersigned's Shares

(i) as a *bona fide* gift or gifts,

(ii) to an immediate family member of the undersigned, or to any trust for the direct or indirect benefit of the undersigned or the immediate family of the undersigned, or otherwise for *bona fide* estate planning purposes,

(iii) upon death or by will, testamentary document or intestate succession,

(iv) to affiliates (within the meaning set forth in Rule 405 promulgated by the SEC under the Securities Act of 1933, as amended, and including subsidiaries of the undersigned, if the undersigned is a corporation), limited partners, general partners, limited liability company members or stockholders of the undersigned to the extent that the undersigned is a partnership, limited liability company or corporation,

(v) in connection with a sale of any of the Undersigned's Shares acquired in open market transactions after the date of the Final Prospectus,

(vi) to the Company in connection with the receipt of shares of Stock upon the "net" or "cashless" exercise of options or warrants by the undersigned, including for the payment of taxes due as a result of such exercise, with respect to stock options and warrants outstanding as of the date of the Final Prospectus and described therein,

(vii) as required by operation of law pursuant to a domestic relations order,

(viii) to the Company pursuant to agreements described in the Final Prospectus under which the Company has the option to repurchase such shares or a right of first refusal with respect to transfers of such shares,

(ix) in connection with a *bona fide* third-party tender offer, merger, consolidation or other similar transaction that is approved by the Board of Directors of the Company, made to all holders of the Stock involving a Change of Control (as defined below) of the Company occurring after the consummation of the Public Offering, *provided that* in the event that such tender offer, merger, consolidation or other such transaction is not completed, the Undersigned's Shares shall remain subject to the restrictions contained in this Lock-Up Agreement, and

(x) with the prior written consent of the Representatives, on behalf of the Underwriters;

provided that in the case of (i), (ii), (iii) and (iv) above, the transfer shall not involve a disposition for value; *provided further that* in the case of (i), (ii), (iii), (iv) and (vii) above, it shall be a condition to the transfer that the donee, trustee, legatee, heir, distributee or other transferee, as the case may be, agrees to be bound in writing by the restrictions set forth herein; *provided further that* in the case of (i), (ii), (iii), (iv), (v), (vii) and (viii) above, such transfers are not required to be reported with the SEC in accordance with Section 16 of the Securities Exchange Act of 1934, as amended (the "Exchange Act"), during the Stockholder Lock-Up Period and no party shall voluntarily effect any public filing or report regarding such transfers during the Stockholder Lock-Up Period; *provided further that* in the case of (vi) above, any filings under Section 16 of the Exchange Act shall include a statement to the effect that such transfer is being made in connection with a "net" or "cashless" exercise of options or warrants, and the undersigned provides written notice to the Representatives no later than two business days prior to making any such filings; and

(b) enter into a written plan meeting the requirements of Rule 10b5-1 under the Exchange Act relating to the sale of securities of the Company; *provided that* (i) there is no public announcement regarding such plan during the Stockholder Lock-Up Period, (ii) no filing by any party under Section 16 of the Exchange Act shall be required or shall be voluntarily made by any person regarding such plan and (iii) there are no sales of securities subject to such plan during the Stockholder Lock-Up Period pursuant to such plan.

For purposes of this Lock-Up Agreement, "Change of Control" shall mean the transfer (whether by tender offer, merger, consolidation or other similar transaction), in one transaction or a series of related transactions, to a person or group of affiliated persons (other than an Underwriter pursuant to the Public Offering), of the Company's voting securities if, after such transfer, such person or group of affiliated persons would hold more than 50% of the outstanding voting securities of the Company (or the surviving entity). For purposes of this Lock-Up Agreement, "immediate family" shall mean any relationship by blood, marriage or adoption, not more remote than first cousin. The undersigned now has, and, except as permitted by clause (a) above, for the duration of this Lock-Up Agreement will have, good and marketable title to the Undersigned's Shares, free and clear of all liens, encumbrances, and claims whatsoever. The undersigned also agrees and consents to the entry of stop transfer instructions with the Company's transfer agent and registrar against the transfer of the Undersigned's Shares except in compliance with the foregoing restrictions.

The undersigned understands that the Company and the Underwriters are relying upon this Lock-Up Agreement in proceeding toward consummation of the Public Offering. The

undersigned further understands that this Lock-Up Agreement is irrevocable and shall be binding upon the undersigned's heirs, legal representatives, successors, and assigns.

It is understood that, if (i) the Company notifies the Representatives in writing, prior to the execution of the Underwriting Agreement, that it does not intend to proceed with the Public Offering of the Shares, (ii) the Underwriting Agreement (other than the provisions thereof which survive termination) shall terminate or be terminated prior to payment for and delivery of the Shares to be sold thereunder, or (iii) the Underwriting Agreement has not been executed by November 30, 2014 (*provided that* the Company may by written notice to the undersigned prior to November 30, 2014 extend such date for a period of up to an additional three months), this Lock-Up Agreement shall immediately be terminated and the undersigned shall be released from all obligations under this Lock-Up Agreement.

Very truly yours,

IF AN INDIVIDUAL:

_____

(signature)

_____

(please print full name)

IF AN ENTITY:

_____

(please print complete name of entity)

By: _____

(duly authorized signature)

_____

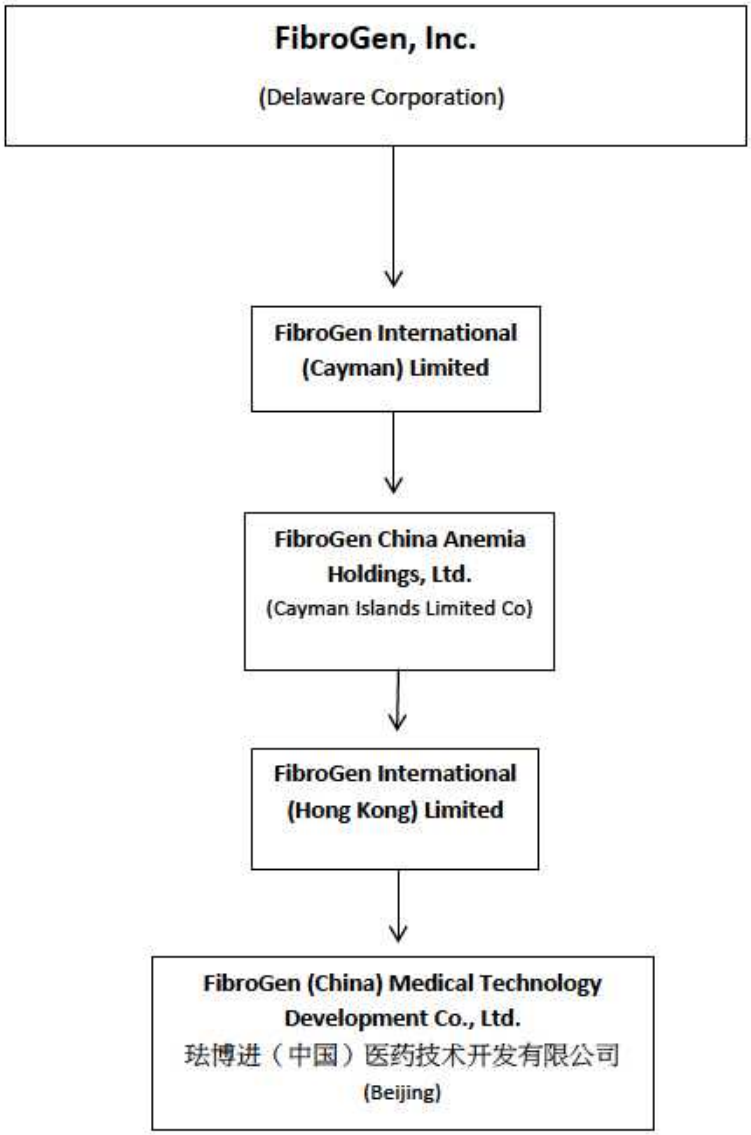
(please print full name)

_____

(please print title)

OWNERSHIP STRUCTURE

Organizational Chart
of
FibroGen, Inc.
And its Cayman, Hong Kong and China Subsidiaries



CERTIFICATE OF INCORPORATION

OF

FIBROGEN, INC.

*** * * * * * * ***

FIRST. The name of the corporation is FibroGen, Inc.

SECOND. The address of its registered office in the State of Delaware is 32 Loockerman Square, Suite L-100, Dover, Delaware 19901. The name of its registered agent at such address is The Prentice-Hall Corporation System, Inc. County of Kent.

THIRD. The nature of the business or purposes to be conducted or promoted is to engage in any lawful act or activity for which corporations may be organized under the General Corporation Law of the State of Delaware.

FOURTH. The total number of shares of all classes of capital stock which the corporation shall have authority to issue is Seventy Million (70,000,000) shares, comprised of Fifty Million (50,000,000) shares of Common Stock with a par value of One Cent ($.01) per share (the "Common Stock") and Twenty Million (20,000,000) shares of Preferred Stock with a par value of One Cent ($.01) per share (the "Preferred Stock").

A description of the respective classes of stock and a statement of the designations, preferences, voting powers (or no voting powers), relative, participating, optional or other special rights and privileges and the qualifications, limitations and restrictions of the Preferred Stock and Common Stock are as follows:

A. PREFERRED STOCK

The Preferred Stock may be issued in one or more series at such time or times and for such consideration or considerations as the board of directors may determine. Each series shall be so designated as to distinguish the shares thereof from the shares of all other series and classes. Except as may be expressly provided in this Certificate of Incorporation, including any certificate of designations for a series of Preferred Stock, different series of Preferred Stock shall not be construed to constitute different classes of shares for the purpose of voting by classes.

The board of directors is expressly authorized, subject to the limitations prescribed by law and the provisions of this Certificate of Incorporation, to provide for the issuance

of all or any shares of the Preferred Stock in one or more series, each with such designations, preferences, voting powers (or no voting powers), relative, participating, optional or other special rights and privileges and such qualifications, limitations or restrictions thereof as shall be stated in the resolution or resolutions adopted by the board of directors to create such series, and a certificate of designations setting forth a copy of said resolution or resolutions shall be filed in accordance with the General Corporation Law of the State of Delaware. The authority of the board of directors with respect to each such series shall include without limitation of the foregoing the right to specify the number of shares of each such series and to authorize an increase or decrease in such number of shares and the right to provide that the shares of each such series may be: (i) subject to redemption at such time or times and at such price or prices; (ii) entitled to receive dividends (which may be cumulative or non-cumulative) at such rates, on such conditions, and at such times, and payable in preference to, or in such relation to, the dividends payable on any other class or classes or any other series; (iii) entitled to such rights upon the dissolution of, or upon any distribution of the assets of, the corporation; (iv) convertible into, or exchangeable for, shares of any other class or classes of stock, or of any other series of the same or any other class or classes of stock of the corporation at such price or prices or at such rates of exchange and with such adjustments, if any; (v) entitled to the benefit of such limitations, if any, on the issuance of additional shares of such series or shares of any other series of Preferred Stock; or (vi) entitled to such other preferences, powers, qualifications, rights and privileges, all as the board of directors may deem advisable and as are not inconsistent with law and the provisions of this Certificate of Incorporation.

B. COMMON STOCK

1. Relative Rights of Preferred Stock and Common Stock. All preferences, voting powers, relative, participating, optional or other special rights and privileges, and qualifications, limitations, or restrictions of the Common Stock are expressly made subject and subordinate to those that may be fixed with respect to any shares of the Preferred Stock.

2. Voting Rights. Except as otherwise required by law or this Certificate of Incorporation, including any certificate of designations for a series of Preferred Stock, each holder of Common Stock shall have one vote in respect of each share of stock held by him of record on the books of the corporation for the election of directors and on all matters submitted to a vote of stockholders of the corporation.

3. Dividends. Subject to the preferential rights of the Preferred Stock, the holders of shares of Common Stock shall be entitled to receive, when and if declared by the board of directors, out of the assets of the corporation which are by

law available therefor, dividends payable either in cash, in property or in shares of capital stock.

4. Dissolution, Liquidation or Winding Up. In the event of any dissolution, liquidation or winding up of the affairs of the corporation, after distribution in full of the preferential amounts, if any, to be distributed to the holders of shares of the Preferred Stock, holders of Common Stock shall be entitled, unless otherwise provided by law or this Certificate of Incorporation, including any certificate of designations for a series of Preferred Stock, to receive all of the remaining assets of the corporation of whatever kind available for distribution to stockholders ratably in proportion to the number of shares of Common Stock held by them respectively.

FIFTH. The name and mailing address of the sole incorporator is as follows:

Name	Mailing Address
JULIAN N. STERN	525 University Avenue, Suite 1100 Palo Alto, Ca. 94301

SIXTH. The corporation is to have perpetual existence.

SEVENTH. In furtherance and not in limitation of the powers conferred by the laws of the State of Delaware:

A. The board of directors of the corporation is expressly authorized:

(i) To make, alter or repeal the by-laws of the corporation.

(ii) To authorize and cause to be executed mortgages and liens upon the real and personal property of the corporation.

(iii) To set apart out of any of the funds of the corporation available for dividends a reserve or reserves for any proper purpose and to abolish any such reserve in the manner in which it was created.

(iv) By a majority of the whole board, to designate one or more committees, each committee to consist of one or more of the directors of the corporation. The board may designate one or more directors as alternate members of any committee, who may replace any absent or disqualified member of any committee. The by-laws may provide that in the absence or disqualification of a member of a committee, the member or members thereof present at any meeting and not disqualified from voting, whether or not he or they constitute a quorum, may

unanimously appoint another member of the board of directors to act at the meeting in the place of any such absent or disqualified member. Any such committee, to the extent provided in the resolution of the board of directors, or in the by-laws of the corporation, shall have and may exercise all the powers and authority of the board of directors in the management of the business and affairs of the corporation, and may authorize the seal of the corporation to be affixed to all papers which may require it; but no such committee shall have the power or authority in reference to amending the Certificate of Incorporation (except that a committee may, to the extent authorized in the resolution or resolutions providing for the issuance of shares of stock adopted by the board of directors as provided in Section 151(a) of the General Corporation Law of the State of Delaware, fix any of the preferences or rights of such shares relating to dividends, redemption, dissolution, any distribution of assets of the corporation or the conversion into, or the exchange of such shares for, shares of any other class or classes or any other series of the same or any other class or classes of stock of the corporation), adopting an agreement of merger or consolidation under Sections 251 or 252 of the General Corporation Law of the State of Delaware, recommending to the stockholders the sale, lease or exchange, of all or substantially all of the corporation's property and assets, recommending to the stockholders a dissolution of the corporation or a revocation of a dissolution, or amending the by-laws of the corporation; and, unless the resolution or by-laws expressly so provide, no such committee shall have the power or authority to declare a dividend, to authorize the issuance of stock, or to adopt a certificate of ownership and merger pursuant to Section 253 of the General Corporation Law of the State of Delaware.

(v) When and as authorized by the stockholders in accordance with statute, to sell, lease or exchange all or substantially all of the property and assets of the corporation, including its good will and its corporate franchises, upon such terms and conditions and for such consideration, which may consist in whole or in part of money or property including shares of stock in, and/or other securities of, any other corporation or corporations, as its board of directors shall deem expedient and for the best interests of the corporation.

B. Elections of directors need not be by written ballot unless the by-laws of the corporation shall so provide.

C. The books of the corporation may be kept at such place within or without the State of Delaware as the by-laws of the corporation may provide or as may be designated from time to time by the board of directors of the corporation.

EIGHTH. Whenever a compromise or arrangement is proposed between this corporation and its creditors or any class of them and/or between this corporation and its stockholders or any class of them, any court of equitable jurisdiction within the State of

Delaware may, on the application in a summary way of this corporation or of any creditor or stockholder thereof or on the application of any receiver or receivers appointed for this corporation under the provisions of Section 291 of Title 8 of the Delaware Code or on the application of trustees in dissolution or of any receiver or receivers appointed for this corporation under the provisions of Section 279 of Title 8 of the Delaware Code, order a meeting of the creditors or class of creditors, and/or of the stockholders or class of stockholders of this corporation, as the case may be, to be summoned in such manner as the said court directs. If a majority in number representing three-fourths in value of the creditors or class of creditors, and/or of the stockholders or class of stockholders of this corporation, as the case may be, agree to any compromise or arrangement and to any reorganization of this corporation as consequence of such compromise or arrangement, the said compromise or arrangement and the said reorganization shall, if sanctioned by the court to which the said application has been made, be binding on all the creditors or class of creditors, and/or on all the stockholders or class of stockholders, of this corporation, as the case may be, and also on this corporation.

NINTH. A director of the corporation shall not be personally liable to the corporation or its stockholders for monetary damages for breach of fiduciary duty as a director, except for liability (i) for any breach of the director's duty of loyalty to the corporation or its stockholders, (ii) for acts or omissions not in good faith or which involve intentional misconduct or a knowing violation of law, (iii) under Section 174 of the Delaware General Corporation Law, or (iv) for any transaction from which the director derived any improper personal benefit. If the Delaware General Corporation Law is amended hereafter to authorize corporate action further eliminating or limiting the personal liability of directors, then the liability of a director of the corporation shall be eliminated or limited to the fullest extent permitted by the Delaware General Corporation Law, as so amended.

Any repeal or modification of the foregoing paragraph by the stockholders of the corporation shall not adversely affect any right or protection of a director of the corporation existing at the time of such repeal or modification.

TENTH.

A. RIGHT TO INDEMNIFICATION

Each person who was or is made a party or is threatened to be made a party to or is involved in any action, suit or proceeding, whether civil, criminal, administrative or investigative ("proceeding"), by reason of the fact that he or she or a person of whom he or she is the legal representative, is or was a director or officer, employee or agent of the Corporation or is or was serving at the request of the

Corporation as a director or officer, employee or agent of another corporation, or of a partnership, joint venture, trust or other enterprise, including service with respect to employee benefit plans, whether the basis of such proceeding is alleged action in an official capacity as a director, officer, employee or agent or in any other capacity while serving as a director, officer, employee or agent, shall be indemnified and held harmless by the Corporation to the fullest extent authorized by the Delaware General Corporation Law, as the same exists or may hereafter be amended, (but, in the case of any such amendment, only to the extent that such amendment permits the Corporation to provide broader indemnification rights than said Law permitted the Corporation to provide prior to such amendment) against all expenses, liability and loss including attorneys' fees, judgments, fines, ERISA excise taxes or penalties and amounts paid or to be paid in settlement) reasonably incurred or suffered by such person in connection therewith and such indemnification shall continue as to a person who has ceased to be a director, officer, employee or agent and shall inure to the benefit of his or her heirs, executors and administrators; provided, however, that the Corporation shall indemnify any such person seeking indemnity in connection with an action, suit or proceeding (or part thereof) initiated by such person only if such action, suit or proceeding (or part thereof) was authorized by the board of directors of the Corporation. Such right shall be a contract right and shall include the right to be paid by the Corporation expenses incurred in defending any such proceeding in advance of its final disposition; provided, however, that the payment of such expenses incurred by a director or officer of the Corporation in his or her capacity as a director or officer (and not in any other capacity in which service was or is rendered by such person while a director or officer, including, without limitation, service to an employee benefit plan) in advance of the final disposition of such proceeding, shall be made only upon delivery to the Corporation of an undertaking, by or on behalf of such director or officer, to repay all amounts so advanced if it should be determined ultimately that such director or officer is not entitled to be indemnified under this Section or otherwise.

B. RIGHT OF CLAIMANT TO BRING SUIT

If a claim under Paragraph A of Article TENTH is not paid in full by the Corporation within ninety (90) days after a written claim has been received by the Corporation, the claimant may at any time thereafter bring suit against the Corporation to recover the unpaid amount of the claim and, if successful in whole or in part, the claimant shall be entitled to be paid also the expense of prosecuting such claim. It shall be a defense to any such action (other than an action brought to enforce a claim for expenses incurred in defending any proceeding in advance of its final disposition where the required undertaking, if any, has been tendered to this Corporation) that the claimant has not met the standards of conduct which make it permissible under the Delaware General Corporation Law for the

Corporation to indemnify the claimant for the amount claimed, but the burden of proving such defense shall be on the Corporation. Neither the failure of the Corporation (including its Board of Directors, independent legal counsel, or its stockholders) to have made a determination prior to the commencement of such action that indemnification of the claimant is proper in the circumstances because he or she has met the applicable standard of conduct set forth in the Delaware General Corporation Law, nor an actual determination by the Corporation (including its Board of Directors, independent legal counsel, or its stockholders) that the claimant has not met such applicable standard of conduct, shall be a defense to the action or create a presumption that claimant has not met the applicable standard of conduct.

C. NON-EXCLUSIVITY OF RIGHTS

The rights conferred on any person by Paragraphs A and B of Article TENTH shall not be exclusive of any other right which such persons may have or hereafter acquire under any statute, provision of the Certificate of Incorporation, by-law, agreement, vote of stockholders or disinterested directors or otherwise.

D. INSURANCE

The Corporation may maintain insurance, at its expense, to protect itself and any such director, officer, employee or agent of the Corporation or another corporation, partnership, joint venture, trust or other enterprise against any such expense, liability or loss, whether or not the Corporation would have the power to indemnify such person against such expense, liability or loss under the Delaware General Corporation Law.

ELEVENTH. The corporation reserves the right to amend or repeal any provision contained in this Certificate of Incorporation, in the manner now or hereafter prescribed by statute, and all rights conferred upon a stockholder herein are granted subject to this reservation.

I, the undersigned, being the sole incorporator hereinabove named, for the purpose of forming a corporation pursuant to the General Corporation Law of the State of Delaware, do make this certificate, hereby declaring and certifying that this is my act and deed and the facts her are true, and accordingly have hereunto set my hand this 28th day September, 1993.

/s/ Julian N. Stern
JULIAN N. STERN, Incorporator

CERTIFICATE OF DESIGNATIONS
OF
SERIES A CONVERTIBLE PREFERRED STOCK
OF
FIBROGEN, INC.

FIBROGEN, INC., a Delaware corporation (the **"Corporation"**), pursuant to the provisions of Section 151 of the General Corporation Law of the State of Delaware, does hereby make this Certificate of Designations and does hereby state and certify that, pursuant to the authority expressly vested in the Board of Directors of the Corporation by the Certificate of Incorporation of the Corporation, the Board of Directors has duly adopted the following resolutions:

RESOLVED, that, pursuant to Article FOURTH of the Certificate of Incorporation, which authorizes 20,000,000 shares of preferred stock, $.01 par value (**"Preferred Stock"**), the Board of Directors hereby fixes the powers, designations, preferences and relative, participating, optional and other rights, and the qualifications, limitations and restrictions, of a series of Preferred Stock.

RESOLVED, that each share of such series of Preferred Stock shall rank equally in all respects and shall be subject to the following provisions:

(1) Number and Designation. 10,000,000 shares of the Preferred Stock of the Corporation shall be designated as Series A Convertible Preferred Stock (the "**Series A Preferred Stock**").

(2) Rank. The Series A Preferred Stock shall, with respect to rights on liquidation, dissolution and winding up, rank prior to all classes of the Corporation's common stock, $.01 par value ("**Common Stock**"). All equity securities of the Corporation to which the Series A Preferred Stock ranks prior (whether with respect to liquidation, dissolution, winding up or otherwise), including the Common Stock, are collectively referred to herein as the "**Junior Securities**." All equity securities of the Corporation with which the Series A Preferred Stock ranks on a parity (whether with respect to liquidation, dissolution, winding up or otherwise) are collectively referred to herein as the "**Parity Securities**." All equity securities of the Corporation to which the Series A Preferred Stock ranks junior (whether with respect to liquidation, dissolution, winding up or otherwise), are collectively referred to herein as the "**Senior Securities**". The respective definitions of Junior Securities, Parity Securities and Senior Securities shall also include any rights, options or warrants exercisable for any of the Junior

Securities, Parity Securities and Senior Securities, as the case may be. The Series A Preferred Stock shall be subject to the creation of Junior Securities, Parity Securities and Senior Securities.

(3) Dividends. The holders of shares of Series A Preferred Stock shall be entitled to receive, when, as and if declared by the Board of Directors, out of funds legally available for the payment of dividends, to the extent as, on the same basis as, at the same rate as, and contemporaneously with, cash dividends when, as and if declared by the Board of Directors with respect to shares of any Common Stock or Parity Securities. Such dividends shall be paid to the holders of record at the close of business on the record date specified by the Board of Directors of the Corporation at the time such dividend is declared, provided, however, that such record date shall not be more than 60 days or less than 10 days prior to the applicable dividend payment date.

(4) Conversion.

(a) Each share of Series A Preferred Stock shall be convertible, at the option of the holder thereof except as otherwise provided in paragraph (4) (b) below, at any time after the date of issuance of such share, at the office of the Corporation or any transfer agent for such stock, into such number of fully paid and non-assessable shares (calculated as to each conversion to the nearest 1/100th of a share) of Common Stock as is determined by dividing $1.00 by the Conversion Price (as defined below) applicable to such share, determined as hereinafter provided, in effect on the date the certificate is surrendered for conversion. The price at which shares of Common Stock shall be deliverable upon conversion of shares of Series A Preferred Stock (the "**Conversion Price**") shall initially be $1.00 per share of Common Stock. Such initial Conversion Price shall be adjusted as hereinafter provided.

(b) Notwithstanding anything to the contrary herein, each outstanding share of Series A Preferred stock shall automatically convert upon a public offering of Common Stock at a price of at least $2.00 per share if the total aggregate proceeds to the Corporation before underwriting commissions and expenses are at least $10,000,000.

(c) Before any holder of Series A Preferred Stock shall be entitled to receive a certificate or certificates for shares of Common Stock upon conversion, such holder shall surrender the certificate or certificates for the holder's shares of Series A Preferred Stock, duly endorsed, at the office of the Corporation or of any transfer agent for such stock, and, unless such conversion is automatic pursuant to clause (b) above, shall give written notice to the Corporation at such office that such holder elects to convert the same and shall state therein the name or names in which such holder wishes the certificate or certificates for shares of Common Stock to be issued. The

Corporation shall, as soon as practicable thereafter, issue and deliver at such office to such holder of Series A Preferred Stock, a certificate or certificates for the number of shares of Common Stock to which such holder shall be entitled as aforesaid. Such conversion shall be deemed to have been made (i) in the case such conversion is automatic pursuant to clause (b) above, upon the effectiveness of the registration statement relating to such offering, and (ii) in all other cases, immediately prior to the close of business on the date of surrender of the shares of Series A Preferred Stock to be converted (in either case, the "**Conversion Date**"), and the person or persons entitled to receive the shares of Common Stock issuable upon such conversion shall be treated for all purposes as the record holder or record holders of such shares of Common Stock on such date.

(d) All shares of Series A Preferred Stock which have been converted as herein provided shall no longer be deemed to be outstanding and all rights with respect to such shares, including the rights, if any, to receive notices and to vote, shall forthwith cease and terminate, except only the right of the holders thereof, subject to the provisions of clause (c) of this paragraph (4), to receive shares of Common Stock in exchange therefor.

(e) (i) For the purposes of this clause (e), the following definitions shall apply:

(A) "Options" shall mean rights, options or warrants to subscribe for, purchase or otherwise acquire either Additional Shares of Common Stock or Convertible Securities (as defined below);

(B) "Original Issue Date" shall mean the date on which a share of Series A Preferred Stock was first issued;

(C) "Convertible Securities" shall mean any evidences of indebtedness, shares (other than Common Stock) or other securities convertible into or exchangeable for Additional Shares of Common Stock; and

(D) "Additional Shares of Common Stock" shall mean all shares of Common Stock issued (or, pursuant to clause (e) (iii) hereof, deemed to be issued) by the Corporation after the Original Issue Date, other than shares of Common Stock issued or issuable:

(I) to officers, directors or employees of, or consultants to, the Corporation pursuant to stock option or stock purchase plans or agreements on terms approved by the Board of Directors of the Corporation;

(II) as a dividend or distribution on shares of the Series A Preferred Stock; or

(III) for which adjustment of the Conversion Price is made pursuant to clause (j) or (k) of this paragraph (4).

(ii) Any provision herein to the contrary notwithstanding, no adjustment in the Conversion Price shall be made in respect of the issuance of Additional Shares of Common Stock unless the consideration per share (determined pursuant to subclause (e) (v) hereof) for an Additional Share of Common Stock issued or deemed to be issued by the Corporation is less than the Conversion Price in effect on the date of, and immediately prior to, such issue.

(iii) In the event the Corporation at any time or from time to time after the Original Issue Date shall issue any Options or Convertible Securities or shall fix a record date for the determination of holders of any class of securities then entitled to receive any such Options or Convertible Securities, then the maximum number of shares (as set forth in the instrument relating thereto without regard to any provisions contained therein designed to protect against dilution) of Common Stock issuable upon the exercise of such Options or, in the case of Convertible Securities and Options therefor, the conversion or exchange of such Convertible Securities, shall be deemed to be Additional Shares of Common Stock issued as of the time of such issue or, in case such a record date shall have been fixed, as of the close of business on such record date; provided, that in any such case in which Additional Shares of Common Stock are deemed to be issued:

(1) no further adjustments in the Conversion Price shall be made upon the subsequent issue of Convertible Securities or shares of Common Stock upon the exercise of such Options or conversion or exchange of such Convertible Securities;

(2) if such Options or Convertible Securities by their terms provide, with the passage of time or otherwise, for any increase or decrease in the consideration payable to the Corporation, or decrease or increase in the number of shares of Common Stock issuable, upon the exercise, conversion or exchange thereof, the Conversion Price computed upon the original issue thereof (or upon the occurrence of a record date with respect thereto), and any subsequent adjustments based thereon, shall, upon any such increase or decrease becoming effective, be recomputed to reflect such increase or decrease insofar as it affects such Options or the rights of conversion or exchange under such Convertible Securities (provided, however, that no such adjustment of the Conversion Price shall affect Common Stock previously issued upon conversion of the Series A Preferred Stock);

(3) upon the expiration of any such Options or any rights of conversion or exchange under such Convertible Securities which shall not have been exercised, the

Conversion Price computed upon the original issue thereof (or upon the occurrence of a record date with respect thereto), and any subsequent adjustments based thereon, shall, upon such expiration, be recomputed as if:

(A) in the case of Convertible Securities or Options for Common Stock the only Additional Shares of Common Stock issued were the shares of Common Stock, if any, actually issued upon the exercise of such Options or the conversion or exchange of such Convertible Securities and the consideration received therefor was the consideration actually received by the Corporation for the issue of all such Options, whether or not exercised, plus the consideration actually received by the Corporation upon such exercise, or for the issue of all such Convertible Securities which were actually converted or exchanged, plus the additional consideration, if any, actually received by the Corporation upon such conversion or exchange; and

(B) in the case of Options for Convertible Securities only the Convertible Securities, if any, actually issued upon the exercise thereof were issued at the time of issue of such Options, and the consideration received by the Corporation for the Additional Shares of Common Stock deemed to have been then issued was the consideration actually received by the Corporation for the issue of all such Options, whether or not exercised, plus the consideration deemed to have been received by the Corporation upon the issue of the Convertible Securities with respect to which such Options were actually exercised;

(4) no readjustment pursuant to clause (2) or (3) above shall have the effect of increasing the Conversion Price to an amount which exceeds the lower of (a) the Conversion Price on the original adjustment date (before adjustment) and (b) the Conversion Price that would have resulted from any issuance of Additional Shares of Common Stock between the original adjustment date and such readjustment date;

(5) in the case of any Options which expire by their terms not more than 30 days after the date of issue thereof, no adjustments of the Conversion Price shall be made until the expiration or exercise of all such Options, whereupon such adjustment shall be made in the same manner provided in clause (3) above.

(iv) In the event this Corporation, at any time after the Original Issue Date, shall issue Additional Shares of Common Stock (including Additional Shares of Common Stock deemed to be issued pursuant to subclause (e)(iii) hereof) without consideration or for a consideration per share less than the Conversion Price in effect on the date of and immediately prior to such issue, then and in such event, the Conversion Price shall be reduced, concurrently with such issue, to a price (calculated to the nearest cent) determined by multiplying the Conversion Price by a fraction, the numerator of which shall be the number of shares of Common Stock outstanding immediately

prior to such issue plus the number of shares of Common Stock which the aggregate consideration received by the Corporation for the total number of Additional Shares of Common Stock so issued would purchase at such Conversion Price in effect immediately prior to such issuance, and the denominator of which shall be the number of shares of Common Stock outstanding immediately prior to such issue plus the number of such Additional Shares of Common Stock so issued. For the purpose of the above calculation, the number of shares of Common Stock outstanding immediately prior to such issue shall be calculated as if (i) all outstanding shares of Preferred Stock and all other outstanding evidences of indebtedness, shares or other securities convertible into or exchangeable for Common Stock had been fully converted into or exchanged for shares of Common Stock immediately prior to such issuance, and (ii) all outstanding rights, options or warrants to subscribe for, purchase or otherwise acquire Common Stock (or to acquire evidences of indebtedness, shares or other securities convertible into or exchangeable for Common Stock) had been fully exercised (and had been fully converted and exchanged if, upon such exercise, evidences of indebtedness, shares or other securities convertible into or exchangeable for Common Stock would be issued) immediately prior to such issuance, but not including in such calculation any additional shares of Common Stock issuable with respect to shares of Preferred Stock, other evidences of indebtedness, shares or other securities convertible into or exchangeable for Common Stock or rights, options or warrants to subscribe for, purchase or otherwise acquire Common Stock solely as a result of the adjustment of the respective Conversion Prices (or other conversion ratios or exercise prices) resulting from the issuance of Additional Shares of Common Stock causing such adjustment.

(v) For purposes of this clause (e), the consideration received by the Corporation for the issue of any Additional Shares of Common Stock shall be computed as follows;

(1) If such consideration consists of cash and property, such consideration shall:

(A) insofar an it consists of cash, be computed at the aggregate amount of cash received by the Corporation excluding amounts paid or payable for accrued interest or accrued dividends;

(B) insofar as it consists of property other than cash, be computed at the fair value thereof at the time of such issue, as determined in good faith by the Board of Directors; and

(C) in the event Additional Shares of Common Stock are issued together with other shares or securities or other assets of the Corporation for consideration which covers both, be the proportion of such consideration so received, computed as provided in clauses (A) and (B) above, as determined in good faith by the Board of Directors.

(2) If such consideration consists of Options and Convertible Securities, the consideration per share received by the Corporation for Additional Shares of Common Stock deemed to have been issued pursuant to subclause (e)(iii), relating to Options and Convertible Securities, shall be determined by dividing:

(A) the total amount, if any, received or receivable by the Corporation as consideration for the issue of such Options or Convertible Securities, plus the minimum aggregate amount of additional consideration (as set forth in the instruments relating thereto, without regard to any provision contained therein designed to protect against dilution) payable to the Corporation upon the exercise of such Options or the conversion or exchange of such Convertible Securities, or in the case of Options for Convertible Securities, the exercise of such Options for Convertible Securities and the conversion or exchange of such Convertible Securities, by

(B) the maximum number of shares of Common Stock (as set forth in the instruments relating thereto, without regard to any provision contained therein designed to protect against the dilution) issuable upon the exercise of such Options or conversion or exchange of such Convertible Securities.

(f) In case:

(i) the Corporation shall declare a dividend (or any other distribution) on Common Stock payable otherwise than in cash out of its retained earnings; or

(ii) the Corporation shall authorize the granting to the holders of Common Stock of rights or warrants to subscribe for or purchase any shares of capital stock of any class or of any other rights; or

(iii) of any reclassification of the Common Stock (other than a subdivision, split or combination of its outstanding shares of Common Stock), or of any consolidation or merger to which the Corporation is a party and for which approval of any stockholders of the Corporation is required, or of the sale or transfer of all or substantially all of the assets of the Corporation; or

(iv) of the voluntary or involuntary dissolution, liquidation or winding up of the Corporation;

then the Corporation shall cause to be mailed to each holder of shares of Series A Preferred Stock at its address as shown on the books of the Corporation, at least 30 days (or 20 days in any case specified in clause (i) or (ii) above) prior to the applicable record or effective date hereinafter specified, a notice stating (x) the date on which a record is to be taken for the purpose of such dividend, distribution, rights or warrants,

or, if a record is not to be taken, the date as of which the holders of Common Stock of record to be entitled to such dividend, distribution, rights or warrants are to be determined, or (y) the date on which such reclassification, liquidation or winding up is expected to become effective, and the date as of which it is expected that holders of Common Stock of record shall be entitled to exchange their shares of Common Stock for securities, cash or other property deliverable upon such reclassification, consolidation, merger, sale, transfer, dissolution, liquidation or winding up.

(g) For the purposes of this paragraph (4), the term "Common Stock" shall mean (i) the class of stock designated as the Common Stock of the Corporation on the date of this Certificate of Designations, and (ii) any other class of common stock, including any class resulting from successive changes or reclassifications of such Common Stock consisting solely of changes in par value or from no par value to par value or from par value to no par value.

(h) No fractional share of Common Stock, or scrip representing a fractional share, shall be issuable upon the conversion of any Series A Preferred Stock. If a certificate or certificates representing more than one share of Series A Preferred Stock shall be surrendered for conversion at one time by the same holder, the number of full shares of Common Stock issuable upon conversion thereof shall be computed on the basis of the aggregate number of shares represented by certificates so surrendered. If any fractional interest in a share of Common Stock would be deliverable upon the conversion of any shares of Series A Preferred Stock, the Corporation shall pay, in lieu thereof, in cash the Conversion Price thereof as of the business day immediately preceding the date of such conversion.

(i) Such number of shares of Common Stock as may from time to time be required for such purpose shall be reserved for issuance upon conversion of outstanding shares of Series A Preferred Stock.

(j) If the Corporation shall at any time or from time to time effect a subdivision or stock split of the outstanding Common Stock, the Conversion Price of the Series A Preferred Stock then in effect immediately before that subdivision or stock split shall be proportionately decreased. If the Corporation shall at any time or from time to time combine the outstanding shares of Common Stock, the Conversion Price of the Series A Preferred Stock then in effect immediately before the combination shall be proportionately increased. Any adjustment under this paragraph shall become effective at the close of business on the date the subdivision, stock split or combination, as the case may be, becomes effective.

(k) In the event the Corporation at any time or from time to time shall make or issue, or fix a record date for the determination of holders of Common Stock entitled to receive,

a dividend or other distribution payable in additional shares of Common Stock, then and in each such event the Conversion Price of the Series A Preferred Stock then in effect shall be decreased as of the time of such issuance or, in the event such a record date shall have been fixed, as of the close of business on such record date, by multiplying the Conversion Price of the Series A Preferred Stock then in effect by a fraction:

(1) the denominator of which shall be the sum of the total number of shares of Common Stock issued and outstanding immediately prior to the time of such issuance or the close of business on such record date, plus the number of shares of Common Stock issuable in payment of such dividend or distribution, and

(2) the numerator of which shall be the total number of shares of Common Stock issued and outstanding immediately prior to the time of such issuance or the close of business on such record date;

provided, however, if such record date shall have been fixed and such dividend is not fully paid or if such distribution is not fully made on the date fixed therefor, the Conversion Price of Series A Preferred Stock shall be recomputed accordingly as of the close of business on such record date and thereafter the Conversion Price of Series A Preferred Stock shall be adjusted pursuant to this paragraph as of the time of actual payment or issuance of such dividends or distributions.

(l) In the event the Corporation at any time or from time to time shall make or issue, or fix a record date for the determination of holders of Common Stock entitled to receive, a dividend or other distribution payable in securities of the Corporation other than shares of Common Stock, then and in each such event provision shall be made so that the holders of Series A Preferred Stock shall receive upon conversion thereof in addition to the number of shares of Common Stock receivable thereupon, the amount of such other securities of the Corporation that they would have received had their Series A Preferred Stock been converted into Common Stock on the date, or the record date, of such event and had thereafter, during the period from the date of such event to and including the Conversion Date, retained such securities receivable by them as aforesaid during such period, all subject to further adjustment as provided herein during such period.

(m) If the Common Stock issuable upon the conversion of the Series A Preferred Stock shall be changed into the same or a different number of shares of any class or classes of stock, whether by capital reorganization, reclassification, exchange, substitution or otherwise, then and in each such event the holder of each such share of Series A Preferred Stock shall have the right thereafter to convert such share into the kind and amount of shares of stock and other securities and property receivable upon such reorganization, reclassification, exchange,

substitution or other change, by holders of the number of shares of Common Stock into which such shares of Series A Preferred Stock might have been converted immediately prior to such reorganization, reclassification, exchange, substitution or other change, all subject to further adjustment as provided herein.

(5) Liquidation Preference.

(a) In the event of any voluntary or involuntary liquidation, dissolution or winding up of the affairs of the Corporation, the holders of shares of Series A Preferred Stock then outstanding shall be entitled to be paid out of the assets of the Corporation available for distribution to its shareholders an amount in cash equal to $1.00 for each share outstanding, plus an amount in cash equal to all declared but unpaid dividends thereon to the date fixed for liquidation, dissolution or winding up before any payment shall be made or any assets distributed to the holders of any Junior Securities. If the assets of the Corporation, or the proceeds thereof, are not sufficient to pay in full the liquidation payments payable to the holders of outstanding shares of the Series A Preferred Stock and any Parity Securities, then the holders of all such shares shall share ratably in such distribution of assets, or the proceeds thereof, in accordance with the amount which would have been payable on such distribution if the amounts to which the holders of outstanding shares of Series A Preferred Stock and the holders of outstanding shares of such Parity Securities are entitled were paid in full. Except as provided in this paragraph (5) (a), holders of Series A Preferred Stock shall not be entitled to any distribution in the event of liquidation, dissolution or winding up of the affairs of the Corporation.

(b) For the purposes of this paragraph (5), neither the voluntary sale, conveyance, exchange or transfer (for cash, shares of stock, securities or other consideration) of all or substantially all the property or assets of the Corporation nor the consolidation or merger of the Corporation with or into one or more other corporations shall be deemed to be a liquidation, dissolution or winding up of the Corporation, voluntary or involuntary unless such voluntary sale, conveyance, exchange or transfer, or merger or consolidation, shall be in connection with a plan of liquidation, dissolution or winding up of the Corporation.

(6) Voting. In addition to any voting rights provided by law and to any voting rights of the holders of the Series A Preferred Stock, as or as part of a separate class or series, pursuant to this Certificate or any provision of the Certificate of Incorporation of the Corporation, the holder of each outstanding share of Series A Preferred Stock shall be entitled to vote on any matter voted on by holders of Common Stock, voting together as a single class with the holders of the Common Stock, and any other shares entitled to vote in the ordinary course. With respect to any such vote, each share of Series A Preferred Stock shall entitle the holder thereof to cast one vote.

(7) Reports. So long as any of the Series A Preferred Stock is outstanding, the Corporation will furnish the holders thereof with the quarterly and annual financial reports, if any, that the Corporation is required to file with the Securities and Exchange Commission pursuant to Section 13 or Section 15(d) of the Securities Exchange Act of 1934.

(8) General Provisions.

(a) The term "**person**" as used herein means any corporation, partnership, trust, organization, association, other entity or individual.

(b) The term "**outstanding**," when used with reference to shares of stock, shall mean issued shares, excluding shares held by the Corporation or any subsidiary of the Corporation.

(c) The headings of the paragraphs, subparagraphs, clauses and subclauses of this Certificate of Designations are for convenience of reference only and shall not define, limit or affect any of the provisions hereof.

IN WITNESS WHEREOF, FIBROGEN, Inc. has caused this Certificate of Designations to be signed and attested by the undersigned this 10th day of December, 1993.

FIBROGEN, INC.

By: /s/ Thomas B. Neff
Name:
Title: CEO FibroGen

ATTEST:

/s/ Jenny Larsson
Name:
Title:

CERTIFICATE OF DESIGNATIONS
OF
SERIES B CONVERTIBLE PREFERRED STOCK
OF
FIBROGEN, INC.

FIBROGEN, INC., a Delaware corporation (the **"Corporation"**), pursuant to the provisions of Section 151 of the General Corporation Law of the State of Delaware, does hereby make this Certificate of Designations and does hereby state and certify that, pursuant to the authority expressly vested in the Board of Directors of the Corporation by the Certificate of Incorporation of the Corporation, the Board of Directors has duly adopted the following resolutions:

RESOLVED, that, pursuant to Article FOURTH of the Certificate of Incorporation, which authorizes 20,000,000 shares of preferred stock, $.01 par value (**"Preferred Stock"**), the Board of Directors hereby fixes the powers, designations, preferences and relative, participating, optional and other rights, and the qualifications, limitations and restrictions, of a series of Preferred Stock.

RESOLVED, that each share of such series of Preferred Stock shall rank equally in all respects and shall be subject to the following provisions:

(1) Number and Designation. 7,692,307 shares of the Preferred Stock of the Corporation shall be designated as Series B Convertible Preferred Stock (**"Series B Preferred Stock"**).

(2) Rank. The Series B Preferred Stock shall, with respect to rights on liquidation, dissolution and winding up, rank prior to all classes of the Corporation's common stock, $.01 par value (**"Common Stock"**). The Series B Preferred Stock shall, with respect to rights on liquidation, dissolution and winding up, rank equally with the Series A Convertible Preferred Stock (**"Series A Preferred Stock"**). All equity securities of the Corporation to which the Series B Preferred Stock ranks prior (whether with respect to liquidation, dissolution, winding up or otherwise), including the Common Stock, are collectively referred to herein as the **"Junior Securities."** All equity securities of the Corporation with which the Series B Preferred Stock ranks on a parity (whether with respect to liquidation, dissolution, winding up or otherwise), including Series A Preferred Stock, are collectively referred to herein as the **"Parity Securities."** All equity securities of the Corporation to which the Series B Preferred Stock ranks junior (whether with respect to liquidation, dissolution, winding up or otherwise), are collectively referred to herein as the **"Senior Securities"**. The respective definitions of Junior Securities, Parity Securities and Senior Securities shall also include any rights, options or warrants exercisable for any of the Junior Securities, Parity

Securities and Senior Securities, as the case may be. The Series B Preferred Stock shall be subject to the creation of Junior Securities, Parity Securities and Senior Securities.

(3) Dividends. The holders of shares of Series B Preferred Stock shall be entitled to receive, when, as and if declared by the Board of Directors, out of funds legally available for the payment of dividends, to the extent as, on the same basis as, at the same rate as, and contemporaneously with, cash dividends when, as and if declared by the Board of Directors with respect to shares of any Common Stock or Parity Securities. Such dividends shall be paid to the holders of record at the close of business on the record date specified by the Board of Directors of the Corporation at the time such dividend is declared, provided, however, that such record date shall not be more than 60 days or less than 10 days prior to the applicable dividend payment date.

(4) Conversion.

(a) Each share of Series B Preferred Stock shall be convertible, at the option of the holder thereof except as otherwise provided in paragraph (4) (b) below, at any time after the date of issuance of such share, at the office of the Corporation or any transfer agent for such stock, into such number of fully paid and non-assessable shares (calculated as to each conversion to the nearest 1/100th of a share) of Common Stock as is determined by dividing $1.30 by the Conversion Price (as defined below) applicable to such share, determined as hereinafter provided, in effect on the date the certificate is surrendered for conversion. The price at which shares of Common Stock shall be deliverable upon conversion of shares of Series B Preferred Stock (the **"Conversion Price"**) shall initially be $1.30 per share of Common Stock. Such initial Conversion Price shall be adjusted as hereinafter provided.

(b) Notwithstanding anything to the contrary herein, each outstanding share of Series B Preferred stock shall automatically convert upon a public offering of Common Stock at a price of at least $2.00 per share if the total aggregate proceeds to the Corporation before underwriting commissions and expenses are at least $10,000,000.

(c) Before any holder of Series B Preferred Stock shall be entitled to receive a certificate or certificates for shares of Common Stock upon conversion, such holder shall surrender the certificate or certificates for the holder's shares of Series B Preferred Stock, duly endorsed, at the office of the Corporation or of any transfer agent for such stock, and, unless such conversion is automatic pursuant to clause (b) above, shall give written notice to the Corporation at such office that such holder elects to convert the same and shall state therein the name or names in which such holder wishes the certificate or certificates for shares of Common Stock to be issued. The Corporation shall, as soon as practicable thereafter, issue and

deliver at such office to such holder of Series B Preferred Stock, a certificate or certificates for the number of shares of Common Stock to which such holder shall be entitled as aforesaid. Such conversion shall be deemed to have been made (i) in the case such conversion is automatic pursuant to clause (b) above, upon the effectiveness of the registration statement relating to such offering, and (ii) in all other cases, immediately prior to the close of business on the date of surrender of the shares of Series B Preferred Stock to be converted (in either case, the **"Conversion Date"**), and the person or persons entitled to receive the shares of Common Stock issuable upon such conversion shall be treated for all purposes as the record holder or record holders of such shares of Common Stock on such date.

(d) All shares of Series B Preferred Stock which have been converted as herein provided shall no longer be deemed to be outstanding and all rights with respect to such shares, including the rights, if any, to receive notices and to vote, shall forthwith cease and terminate, except only the right of the holders thereof, subject to the provisions of clause (c) of this paragraph (4), to receive shares of Common Stock in exchange therefor.

(e) (i) For the purposes of this clause (e), the following definitions shall apply:

(A) "Options" shall mean rights, options or warrants to subscribe for, purchase or otherwise acquire either Additional Shares of Common Stock or Convertible Securities (as defined below);

(B) "Original Issue Date" shall mean the date on which a share of Series B Preferred Stock was first issued;

(C) "Convertible Securities" shall mean any evidences of indebtedness, shares (other than Common Stock) or other securities convertible into or exchangeable for Additional Shares of Common Stock; and

(D) "Additional Shares of Common Stock" shall mean all shares of Common Stock issued (or, pursuant to clause (e) (iii) hereof, deemed to be issued) by the Corporation after the Original Issue Date, other than shares of Common Stock issued or issuable:

(I) to officers, directors or employees of, or consultants to, the Corporation pursuant to stock option or stock purchase plans or agreements on terms approved by the Board of Directors of the Corporation;

(II) as a dividend or distribution on shares of the Series B Preferred Stock; or

(III) for which adjustment of the Conversion Price is made pursuant to clause (j) or (k) of this paragraph (4).

(ii) Any provision herein to the contrary notwithstanding, no adjustment in the Conversion Price shall be made in respect of the issuance of Additional Shares of Common Stock unless the consideration per share (determined pursuant to subclause (e) (v) hereof) for an Additional Share of Common Stock issued or deemed to be issued by the Corporation is less than the Conversion Price in effect on the date of, and immediately prior to, such issue.

(iii) In the event the Corporation at any time or from time to time after the Original Issue Date shall issue any Options or Convertible Securities or shall fix a record date for the determination of holders of any class of securities then entitled to receive any such Options or Convertible Securities, then the maximum number of shares (as set forth in the instrument relating thereto without regard to any provisions contained therein designed to protect against dilution) of Common Stock issuable upon the exercise of such Options or, in the case of Convertible Securities and Options therefor, the conversion or exchange of such Convertible Securities, shall be deemed to be Additional Shares of Common Stock issued as of the time of such issue or, in case such a record date shall have been fixed, as of the close of business on such record date; provided, that in any such case in which Additional Shares of Common Stock are deemed to be issued:

(1) no further adjustments in the Conversion Price shall be made upon the subsequent issue of Convertible Securities or shares of Common Stock upon the exercise of such Options or conversion or exchange of such Convertible Securities;

(2) if such Options or Convertible Securities by their terms provide, with the passage of time or otherwise, for any increase or decrease in the consideration payable to the Corporation, or decrease or increase in the number of shares of Common Stock issuable, upon the exercise, conversion or exchange thereof, the Conversion Price computed upon the original issue thereof (or upon the occurrence of a record date with respect thereto), and any subsequent adjustments based thereon, shall, upon any such increase or decrease becoming effective, be recomputed to reflect such increase or decrease insofar as it affects such Options or the rights of conversion or exchange under such Convertible Securities (provided, however, that no such adjustment of the Conversion Price shall affect Common Stock previously issued upon conversion of the Series B Preferred Stock);

(3) upon the expiration of any such Options or any rights of conversion or exchange under such Convertible Securities which shall not have been exercised, the

Conversion Price computed upon the original issue thereof (or upon the occurrence of a record date with respect thereto), and any subsequent adjustments based thereon, shall, upon such expiration, be recomputed as if:

(A) in the case of Convertible Securities or Options for Common stock the only Additional Shares of Common Stock issued were the shares of Common Stock, if any, actually issued upon the exercise of such Options or the conversion or exchange of such Convertible Securities and the consideration received therefor was the consideration actually received by the Corporation for the issue of all such Options, whether or not exercised, plus the consideration actually received by the Corporation upon such exercise, or for the issue of all such Convertible Securities which were actually converted or exchanged, plus the additional consideration, if any, actually received by the Corporation upon such conversion or exchange; and

(B) in the case of Options for Convertible Securities only the Convertible Securities, if any, actually issued upon the exercise thereof were issued at the time of issue of such Options, and the consideration received by the Corporation for the Additional Shares of Common Stock deemed to have been then issued was the consideration actually received by the Corporation for the issue of all such Options, whether or not exercised, plus the consideration deemed to have been received by the Corporation upon the issue of the Convertible Securities with respect to which such Options were actually exercised;

(4) no readjustment pursuant to clause (2) or (3) above shall have the effect of increasing the Conversion Price to an amount which exceeds the lower of (a) the Conversion Price on the original adjustment date (before adjustment) and (b) the Conversion Price that would have resulted from any issuance of Additional Shares of Common Stock between the original adjustment date and such readjustment date;

(5) in the case of any Options which expire by their terms not more than 30 days after the date of issue thereof, no adjustments of the Conversion Price shall be made until the expiration or exercise of all such Options, whereupon such adjustment shall be made in the same manner provided in clause (3) above.

(iv) In the event this Corporation, at any time after the Original Issue Date, shall issue Additional Shares of Common Stock (including Additional Shares of Common Stock deemed to be issued pursuant to subclause (e) (iii) hereof) without consideration or for a consideration per share less than the Conversion Price in effect on the date of and immediately prior to such issue, then and in such event, the Conversion Price shall be reduced, concurrently with such issue, to a price (calculated to the nearest cent) determined by multiplying the Conversion Price by a fraction, the numerator of which shall be the number of shares of Common Stock outstanding immediately

prior to such issue plus the number of shares of Common Stock which the aggregate consideration received by the Corporation for the total number of Additional Shares of Common Stock so issued would purchase at such Conversion Price in effect immediately prior to such issuance, and the denominator of which shall be the number of shares of Common Stock outstanding immediately prior to such issue plus the number of such Additional Shares of Common Stock so issued. For the purpose of the above calculation, the number of shares of Common Stock outstanding immediately prior to such issue shall be calculated as if (i) all outstanding shares of Preferred Stock and all other outstanding evidences of indebtedness, shares or other securities convertible into or exchangeable for Common Stock had been fully converted into or exchanged for shares of Common Stock immediately prior to such issuance, and (ii) all outstanding rights, options or warrants to subscribe for, purchase or otherwise acquire Common Stock (or to acquire evidences of indebtedness, shares or other securities convertible into or exchangeable for Common Stock) had been fully exercised (and had been fully converted and exchanged if, upon such exercise, evidences of indebtedness, shares or other securities convertible into or exchangeable for Common Stock would be issued) immediately prior to such issuance, but not including in such calculation any additional shares of Common Stock issuable with respect to shares of Preferred Stock, other evidences of indebtedness, shares or other securities convertible, into or exchangeable for Common Stock or rights, options or warrants to subscribe for, purchase or otherwise acquire Common Stock solely as a result of the adjustment of the respective Conversion Prices (or other conversion ratios or exercise prices) resulting from the issuance of Additional Shares of Common Stock causing such adjustment.

(v) For purposes of this clause (e), the consideration received by the Corporation for the issue of any Additional Shares of Common Stock shall be computed as follows;

(1) If such consideration consists of cash and property, such consideration shall:

(A) insofar an it consists of cash, be computed at the aggregate amount of cash received by the Corporation excluding amounts paid or payable for accrued interest or accrued dividends;

(B) insofar as it consists of property other than cash, be computed at the fair value thereof at the time of such issue, as determined in good faith by the Board of Directors; and

(C) in the event Additional Shares of Common Stock are issued together with other shares or securities or other assets of the Corporation for consideration which covers both, be the proportion of such consideration so received, computed as provided in clauses (A) and (B) above, as determined in good faith by the Board of Directors.

(2) If such consideration consists of Options and Convertible Securities, the consideration per share received by the Corporation for Additional Shares of Common Stock deemed to have been issued pursuant to subclause (e) (iii), relating to Options and Convertible Securities, shall be determined by dividing:

(A) the total amount, if any, received or receivable by the Corporation as consideration for the issue of such Options or Convertible Securities, plus the minimum aggregate amount of additional consideration (as set forth in the instruments relating thereto, without regard to any provision contained therein designed to protect against dilution) payable to the Corporation upon the exercise of such Options or the conversion or exchange of such Convertible Securities, or in the case of Options for Convertible Securities, the exercise of such Options for Convertible Securities and the conversion or exchange of such Convertible Securities, by

(B) the maximum number of shares of Common Stock (as set forth in the instruments relating thereto, without regard to any provision contained therein designed to protect against the dilution) issuable upon the exercise of such Options or conversion or exchange of such Convertible Securities.

(f) In case:

(i) the Corporation shall declare a dividend (or any other distribution) on Common Stock payable otherwise than in cash out of its retained earnings; or

(ii) the Corporation shall authorize the granting to the holders of Common Stock of rights or warrants to subscribe for or purchase any shares of capital stock of any class or of any other rights; or

(iii) of any reclassification of the Common Stock (other than a subdivision, split or combination of its outstanding shares of Common Stock), or of any consolidation or merger to which the Corporation is a party and for which approval of any stockholders of the Corporation is required, or of the sale or transfer of all or substantially all of the assets of the Corporation; or

(iv) of the voluntary or involuntary dissolution; liquidation or winding up of the Corporation;

then the Corporation shall cause to be mailed to each holder of shares of Series B Preferred Stock at its address as shown on the books of the Corporation, at least 30 days (or 20 days in any case specified in clause (i) or (ii) above) prior to the applicable record or effective date hereinafter specified, a notice stating (x) the date on which a record is to be taken for the purpose of such dividend, distribution, rights or warrants,

or, if a record is not to be taken, the date as of which the holders of Common Stock of record to be entitled to such dividend, distribution, rights or warrants are to be determined, or (y) the date on which such reclassification, liquidation or winding up is expected to become effective, and the date as of which it is expected that holders of Common Stock of record shall be entitled to exchange their shares of Common Stock for securities, cash or other property deliverable upon such reclassification, consolidation, merger, sale, transfer, dissolution, liquidation or winding up.

(g) For the purposes of this paragraph (4), the term "Common Stock" shall mean (i) the class of stock designated as the Common Stock of the Corporation on the date of this Certificate of Designations, and (ii) any other class of common stock, including any class resulting from successive changes or reclassifications of such Common Stock consisting solely of changes in par value or from no par value to par value or from par value to no par value.

(h) No fractional share of Common Stock, or scrip representing a fractional share, shall be issuable upon the conversion of any Series B Preferred Stock. If a certificate or certificates representing more than one share of Series B Preferred Stock shall be surrendered for conversion at one time by the same holder, the number of full shares of Common Stock issuable upon conversion thereof shall be computed on the basis of the aggregate number of shares represented by certificates so surrendered. If any fractional interest in a share of Common Stock would be deliverable upon the conversion of any shares of Series B Preferred Stock, the Corporation shall pay, in lieu thereof, in cash the Conversion Price thereof as of the business day immediately preceding the date of such conversion.

(i) Such number of shares of Common Stock as may from time to time be required for such purpose shall be reserved for issuance upon conversion of outstanding shares of Series B Preferred Stock.

(j) If the Corporation shall at any time or from time to time effect a subdivision or stock split of the outstanding Common Stock, the Conversion Price of the Series B Preferred Stock then in effect immediately before that subdivision or stock split shall be proportionately decreased. If the Corporation shall at any time or from time to time combine the outstanding shares of Common Stock, the Conversion Price of the Series B Preferred Stock then in effect immediately before the combination shall be proportionately increased. Any adjustment under this paragraph shall become effective at the close of business on the date the subdivision, stock split or combination, as the case may be, becomes effective.

(k) In the event the Corporation at any time or from time to time shall make or issue, or fix a record date for the determination of holders of Common Stock entitled to receive,

a dividend or other distribution payable in additional shares of Common Stock, then and in each such event the Conversion Price of the Series B Preferred Stock then in effect shall be decreased as of the time of such issuance or, in the event such a record date shall have been fixed, as of the close of business on such record date, by multiplying the Conversion Price of the Series B Preferred Stock then in effect by a fraction;

(1) the denominator of which shall be the sum of the total number of shares of Common Stock issued and outstanding immediately prior to the time of such issuance or the close of business on such record date, plus the number of shares of Common Stock issuable in payment of such dividend or distribution, and

(2) the numerator of which shall be the total number of shares of Common Stock issued and outstanding immediately prior to the time of such issuance or the close of business on such record date;

provided, however, if such record date shall have been fixed and such dividend is not fully paid or if such distribution is not fully made on the date fixed therefor, the Conversion Price of Series B Preferred Stock shall be recomputed accordingly as of the close of business on such record date and thereafter the Conversion Price of Series B Preferred Stock shall be adjusted pursuant to this paragraph as of the time of actual payment or issuance of such dividends or distributions.

(l) In the event the Corporation at any time or from time to time shall make or issue, or fix a record date for the determination of holders of Common Stock entitled to receive, a dividend or other distribution payable in securities of the Corporation other than shares of Common Stock, then and in each such event provision shall be made so that the holders of Series B Preferred Stock shall receive upon conversion thereof in addition to the number of shares of Common Stock receivable thereupon, the amount of such other securities of the Corporation that they would have received had their Series B Preferred Stock been converted into Common Stock on the date, or the record date, of such event and had thereafter, during the period from the date of such event to and including the Conversion Date, retained such securities receivable by them as aforesaid during such period, all subject to further adjustment as provided herein during such period.

(m) If the Common Stock issuable upon the conversion of the Series B Preferred Stock shall be changed into the same or a different number of shares of any class or classes of stock, whether by capital reorganization, reclassification, exchange, substitution or otherwise, then and in each such event the holder of each such share of Series B Preferred Stock shall have the right thereafter to convert such share into the kind and amount of shares of stock and other securities and property receivable upon such reorganization, reclassification, exchange,

substitution or other change, by holders of the number of shares of Common Stock into which such shares of Series B Preferred Stock might have been converted immediately prior to such reorganization, reclassification, exchange, substitution or other change, all subject to further adjustment as provided herein.

(5) Liquidation Preference.

(a) In the event of any voluntary or involuntary liquidation, dissolution or winding up of the affairs of the Corporation, the holders of shares of Series B Preferred Stock then outstanding shall be entitled to be paid out of the assets of the Corporation available for distribution to its shareholders an amount in cash equal to $1.30 for each share outstanding, plus an amount in cash equal to all declared but unpaid dividends thereon to the date fixed for liquidation, dissolution or winding up before any payment shall be made or any assets distributed to the holders of any Junior Securities. If the assets of the Corporation, or the proceeds thereof, are not sufficient to pay in full the liquidation payments payable to the holders of outstanding shares of the Series B Preferred Stock and any Parity Securities, then the holders of all such shares shall share ratably in such distribution of assets, or the proceeds thereof, in accordance with the amount which would have been payable on such distribution if the amounts to which the holders of outstanding shares of Series B Preferred Stock and the holders of outstanding shares of such Parity Securities are entitled were paid in full. Except as provided in this paragraph (5) (a), holders of Series B Preferred Stock shall not be entitled to any distribution in the event of liquidation, dissolution or winding up of the affairs of the Corporation.

(b) For the purposes of this paragraph (5), neither the voluntary sale, conveyance, exchange or transfer (for cash, shares of stock, securities or other consideration) of all or substantially all the property or assets of the Corporation nor the consolidation or merger of the Corporation with or into one or more other corporations shall be deemed to be a liquidation, dissolution or winding up of the Corporation, voluntary or involuntary unless such voluntary sale, conveyance, exchange or transfer, or merger or consolidation, shall be in connection with a plan of liquidation, dissolution or winding up of the Corporation.

(6) Voting. In addition to any voting rights provided by law and to any voting rights of the holders of the Series B Preferred Stock, as or as part of a separate class or series, pursuant to this Certificate or any provision of the Certificate of Incorporation of the Corporation, the holder of each outstanding share of Series B Preferred Stock shall be entitled to vote on any matter voted on by holders of Common Stock, voting together as a single class with the holders of the Common Stock, and any other shares entitled to vote in the ordinary course. With respect to any such vote, each share of Series B Preferred Stock shall entitle the holder thereof to cast one vote.

(7) Reports. So long as any of the Series B Preferred Stock is outstanding, the Corporation will furnish the holders thereof with the quarterly and annual financial reports, if any, that the Corporation is required to file with the Securities and Exchange Commission pursuant to Section 13 or Section 15(d) of the Securities Exchange Act of 1934.

(8) General Provisions.

(a) The term "**person**" as used herein means any corporation, partnership, trust, organization, association, other entity or individual.

(b) The term "**outstanding**," when used with reference to shares of stock, shall mean issued shares, excluding shares held by the Corporation or any subsidiary of the Corporation.

(c) The headings of the paragraphs, subparagraphs, clauses and subclauses of this Certificate of Designations are for convenience of reference only and shall not define, limit or affect any of the provisions hereof.

IN WITNESS WHEREOF, FIBROGEN, Inc. has caused this Certificate of Designations to be signed and attested by the undersigned this 7th day of November 1995.

FIBROGEN, INC.

By: /s/ Julian N. Stern
Julian N. Stern
Secretary

CERTIFICATE OF AMENDMENT OF
THE CERTIFICATE OF INCORPORATION OF
FIBROGEN, INC.,
a Delaware corporation

It is hereby certified that:

1. The name of the corporation (hereinafter called the "Corporation") is FIBROGEN, INC.

2. The certificate of incorporation of the Corporation is hereby amended by striking out the first paragraph of Article FOURTH thereof and by substituting in lieu of said paragraph the following new paragraph:

> "FOURTH. The total number of shares of all classes of capital stock which the corporation shall have the authority to issue is Eighty Five Million (85,000,000) shares, comprised of Fifty Million (50,000,000) shares of Common Stock with a par value of One Cent ($.01) per share (the "Common Stock") and Thirty Five Million (35,000,000) shares of Preferred Stock with a par value of One Cent ($.01) per share (the "Preferred Stock")."

3. The amendment of the certificate of incorporation herein certified has been duly adopted in accordance with the provisions of Sections 228 and 242 of the General Corporation Law of the State of Delaware. Prompt written notice of the adoption of the amendment herein certified has been given to those stockholders who have not consented in writing thereto, as provided in Section 228 of the General Corporation Law of the State of Delaware.

Executed effective the 18th day of April, 1996.

/s/ Julian N. Stern
Julian N. Stern, Secretary

AMENDED DESIGNATION
OF
SERIES B CONVERTIBLE PREFERRED STOCK
OF
FIBROGEN, INC.

FIBROGEN, INC., a Delaware corporation (the **"Corporation"**), pursuant to the provisions of Section 151 of the General Corporation Law of the State of Delaware, does hereby make this Certificate of Designations and does hereby state and certify that, pursuant to the authority expressly vested in the Board of Directors of the Corporation by the Certificate of Incorporation of the Corporation, the Board of Directors has duly adopted the following resolutions:

RESOLVED, that, pursuant to Article FOURTH of the Certificate of Incorporation, as amended, which authorizes 35,000,000 shares of preferred stock, $.01 par value (**"Preferred Stock"**), the Board of Directors hereby fixes the powers, designations, preferences and relative, participating, optional and other rights, and the qualifications, limitations and restrictions, of a series of Preferred Stock. No shares of the class or series of stock have been issued.

RESOLVED, that each share of such series of Preferred Stock shall rank equally in all respects and shall be subject to the following provisions:

(1) Number and Designation. 13,846,153 shares of the Preferred Stock of the Corporation shall be designated as Series B Convertible Preferred Stock ("Series B Preferred Stock").

(2) Rank. The Series B Preferred Stock shall, with respect to rights on liquidation, dissolution and winding up, rank prior to all classes of the Corporation's common stock, $.01 par value (**"Common Stock"**). The Series B Preferred Stock shall, with respect to rights on liquidation, dissolution and winding up, rank equally with the Series A Convertible Preferred Stock (**"Series A Preferred Stock"**). All equity securities of the Corporation to which the Series B Preferred Stock ranks prior (whether with respect to liquidation, dissolution, winding up or otherwise), including the Common Stock, are collectively referred to herein as the **"Junior Securities."** All equity securities of the Corporation with which the Series B Preferred Stock ranks on a parity (whether with respect to liquidation, dissolution, winding up or otherwise), including Series A Preferred Stock, are collectively referred to herein as the "**Parity Securities."** All equity securities of the Corporation to which the Series B Preferred Stock ranks junior (whether with respect to liquidation, dissolution, winding up or otherwise), are collectively referred to herein as the **"Senior Securities".** The respective definitions of Junior Securities, Parity Securities and Senior Securities shall also include any rights, options or

warrants exercisable for any of the Junior Securities, Parity Securities and Senior Securities, as the case may be. The Series B Preferred Stock shall be subject to the creation of Junior Securities, Parity Securities and Senior Securities.

(3) Dividends. The holders of shares of Series B Preferred Stock shall be entitled to receive, when, as and if declared by the Board of Directors, out of funds legally available for the payment of dividends, to the extent as, on the same basis as, at the same rate as, and contemporaneously with, cash dividends when, as and if declared by the Board of Directors with respect to shares of any Common Stock or Parity Securities. Such dividends shall be paid to the holders of record at the close of business on the record date specified by the Board of Directors of the Corporation at the time such dividend is declared, provided, however, that such record date shall not be more than 60 days or less than 10 days prior to the applicable dividend payment date.

(4) Conversion.

(a) Each share of Series B Preferred Stock shall be convertible, at the option of the holder thereof except as otherwise provided in paragraph (4) (b) below, at any time after the date of issuance of such share, at the office of the Corporation or any transfer agent for such stock, into such number of fully paid and non-assessable shares (calculated as to each conversion to the nearest 1/100th of a share) of Common Stock as is determined by dividing $1.30 by the Conversion Price (as defined below) applicable to such share, determined as hereinafter provided, in effect on the date the certificate is surrendered for conversion. The price at which shares of Common Stock shall be deliverable upon conversion of shares of Series B Preferred Stock (the “Conversion Price”) shall initially be $1.30 per share of Common Stock. Such initial Conversion Price shall be adjusted as hereinafter provided.

(b) Notwithstanding anything to the contrary herein, each outstanding share of Series B Preferred stock shall automatically convert upon a public offering of Common Stock at a price of at least $2.00 per share if the total aggregate proceeds to the Corporation before underwriting commissions and expenses are at least $10,000,000.

(c) Before any holder of Series B Preferred Stock shall be entitled to receive a certificate or certificates for shares of Common Stock upon conversion, such holder shall surrender the certificate or certificates for the holder’s shares of Series Preferred Stock, duly endorsed, at the office of the Corporation or of any transfer agent for such stock, and, unless such conversion is automatic pursuant to clause (b) above, shall give written notice to the Corporation at such office that such holder elects to convert the same and shall state therein the name or names in which such holder wishes the certificate or certificates for shares of Common Stock to be issued. The

Corporation shall, as soon as practicable thereafter, issue and deliver at such office to such holder of Series B Preferred Stock, a certificate or certificates for the number of shares of Common Stock to which such holder shall be entitled as aforesaid. Such conversion shall be deemed to have been made (i) in the case such conversion is automatic pursuant to clause (b) above, upon the effectiveness of the registration statement relating to such offering, and (ii) in all other cases, immediately prior to the close of business on the date of surrender of the shares of Series B Preferred Stock to be converted (in either case, the "Conversion Date"), and the person or persons entitled to receive the shares of Common Stock issuable upon such conversion shall be treated for all purposes as the record holder or record holders of such shares of Common Stock on such date.

(d) All shares of Series B Preferred Stock which have been converted as herein provided shall no longer be deemed to be outstanding and all rights with respect to such shares, including the rights, if any, to receive notices and to vote, shall forthwith cease and terminate, except only the right of the holders thereof, subject to the provisions of clause (c) of this paragraph (4), to receive shares of Common Stock in exchange therefor.

(e) (i) For the purposes of this clause (e), the following definitions shall apply:

(A) "Options" shall mean rights, options or warrants to subscribe for, purchase or otherwise acquire either Additional shares of Common Stock or Convertible Securities (as defined below);

(B) "Original Issue Date" shall mean the date on which a share of Series B Preferred Stock was first issued;

(C) "Convertible Securities" shall mean any evidences of indebtedness, shares (other than Common Stock) or other securities convertible into or exchangeable for Additional Shares of Common Stock; and

(D) "Additional Shares of Common Stock" shall mean all shares of common stock issued (or, pursuant to clause (e) (iii) hereof, deemed to be issued) by the Corporation after the Original Issue Date, other than shares of Common Stock issued or issuable:

(I) to officers, directors or employees of, or consultants to, the Corporation pursuant to stock option or stock purchase plans or agreements on terms approved by the Board of Directors of the Corporation;

(II) as a dividend or distribution on shares of the Series B Preferred Stock; or

(III) for which adjustment of the Conversion Price is made pursuant to clause (j) or (k) of this paragraph (4).

(ii) Any provision herein to the contrary notwithstanding, no adjustment in the Conversion Price shall be made in respect of the issuance of Additional Shares of Common Stock unless the consideration per share (determined pursuant to subclause (e) (v) hereof) for an Additional Share of Common Stock issued or deemed to be issued by the Corporation is less than the Conversion Price in effect on the date of, and immediately prior to, such issue,

(iii) In the event the Corporation at any time or from time to time after the Original Issue Date shall issue any Options or Convertible Securities or shall fix a record date for the determination of holders of any class of securities then entitled to receive any such Options or Convertible Securities, then the maximum number of shares (as set forth in the instrument relating thereto without regard to any provisions contained therein designed to protect against dilution) of Common Stock issuable upon the exercise of such Options or, in the case of Convertible Securities and Options therefor, the conversion or exchange of such Convertible Securities, shall be deemed to be Additional Shares of Common Stock issued as of the time of such issue or, in case such a record date shall have been fixed, as of the close of business on such record date; provided, that in any such case in which Additional Shares of Common Stock are deemed to be issued:

(1) no further adjustments in the Conversion Price shall be made upon the subsequent issue of Convertible Securities or shares of Common Stock upon the exercise of such Options or conversion or exchange of such Convertible Securities;

(2) if such Options or Convertible Securities by their terms provide, with the passage of time or otherwise, for any increase or decrease in the consideration payable to the Corporation, or decrease or increase in the number of shares of Common Stock issuable, upon the exercise, conversion or exchange thereof, the Conversion Price computed upon the original issue thereof (or upon the occurrence of a record date with respect thereto), and any subsequent adjustments based thereon, shall, upon any such increase or decrease becoming effective, be recomputed to reflect such increase or decrease insofar as it affects such Options or the rights of conversion or exchange under such Convertible Securities (provided, however, that no such adjustment of the Conversion Price shall affect Common Stock previously issued upon conversion of the Series B Preferred Stock);

(3) upon the expiration of any such Options or any rights of conversion or exchange under such Convertible Securities which shall not have been exercised, the

Conversion Price computed upon the original issue thereof (or upon the occurrence of a record date with respect thereto), and any subsequent adjustments based thereon, shall, upon such expiration, be recomputed as if:

(A) in the case of Convertible Securities or Options for Common Stock the only Additional Shares of Common Stock issued were the shares of Common Stock, if any, actually issued upon the exercise of such Options or the conversion or exchange of such Convertible Securities and the consideration received therefor was the consideration actually received by the Corporation for the issue of all such Options, whether or not exercised, plus the consideration actually received by the Corporation upon such exercise, or for the issue of all such Convertible Securities which were actually converted or exchanged, plus the additional consideration, if any, actually received by the Corporation upon such conversion or exchange; and

(B) in the case of Options for Convertible Securities only the Convertible Securities, if any, actually issued upon the exercise thereof were issued at the time of issue of such Options, and the consideration received by the Corporation for the Additional Shares of Common Stock deemed to have been then issued was the consideration actually received by the Corporation for the issue of all such Options, whether or not exercised, plus the consideration deemed to have been received by the Corporation upon the issue of the Convertible Securities with respect to which such Options were actually exercised;

(4) no readjustment pursuant to clause (2) or (3) above shall have the effect of increasing the Conversion Price to an amount which exceeds the lower of (a) the Conversion Price on the original adjustment date (before adjustment) and (b) the Conversion Price that would have resulted from any issuance of Additional Shares of Common Stock between the original adjustment date and such readjustment date;

(5) in the case of any Options which expire by their terms not more than 30 days after the date of issue thereof, no adjustments of the Conversion Price shall be made until the expiration or exercise of all such Options, whereupon such adjustment shall be made in the same manner provided in clause (3) above.

(iv) In the event this Corporation, at any time after the Original Issue Date, shall issue Additional Shares of Common Stock (including Additional Shares of Common stock deemed to be issued pursuant to subclause (e)(iii) hereof) without consideration or for a consideration per share less than the Conversion Price in effect on the date of and immediately prior to such issue, then and in such event, the Conversion Price shall be reduced, concurrently with such issue, to a price (calculated to the nearest cent) determined by multiplying the Conversion Price by a fraction, the numerator of which shall be the number of shares of Common Stock outstanding immediately

prior to such issue plus the number of shares of Common Stock which the aggregate consideration received by the Corporation for the total number of Additional Shares of Common Stock so issued would purchase at such Conversion Price in effect immediately prior to such issuance, and the denominator of which shall be the number of shares of common Stock outstanding immediately prior to such issue plus the number of such Additional Shares of Common Stock so issued. For the purpose of the above calculation, the number of shares of Common Stock outstanding immediately prior to such issue shall be calculated as if (i) all outstanding shares of Preferred Stock and all other outstanding evidences of indebtedness, shares or other securities convertible into or exchangeable for Common Stock had been fully converted into or exchanged for shares of Common Stock immediately prior to such issuance, and (ii) all outstanding rights, options or warrants to subscribe for, purchase or otherwise acquire Common Stock (or to acquire evidences of indebtedness, shares or other securities convertible into or exchangeable for Common Stock) had been fully exercised (and had been fully converted and exchanged if, upon such exercise, evidences of indebtedness, shares or other securities convertible into or exchangeable for Common Stock would be issued) immediately prior to such issuance, but not including in such calculation any additional shares of Common Stock issuable with respect to shares of Preferred Stock, other evidences of indebtedness, shares or other securities convertible into or exchangeable for Common Stock or rights, options or warrants to subscribe for, purchase or otherwise acquire Common Stock solely as a result of the adjustment of the respective Conversion Prices (or other conversion ratios or exercise prices) resulting from the issuance of Additional Shares of Common Stock causing such adjustment.

(v) For purposes of this clause (e), the consideration received by the Corporation for the issue of any Additional Shares of Common Stock shall be computed as follows;

(1) If such consideration consists of cash and property, such consideration shall:

(A) insofar an it consists of cash, be computed at the aggregate amount of cash received by the Corporation excluding amounts paid or payable for accrued interest or accrued dividends;

(B) insofar as it consists of property other than cash, be computed at the fair value thereof at the time of such issue, as determined in good faith by the Board of Directors; and

(C) in the event Additional Shares of Common Stock are issued together with other shares or securities or other assets of the corporation for consideration which covers both, be the proportion of such consideration so received, computed as provided in clauses (A) and (B) above, as determined in good faith by the Board of Directors.

(2) If such consideration consists of Options and Convertible Securities, the consideration per share received by the Corporation for Additional Shares of Common Stock deemed to have been issued pursuant to subclause (e)(iii), relating to Options and Convertible Securities, shall be determined by dividing:

(A) the total amount, if any, received or receivable by the Corporation as consideration for the issue of such Options or Convertible Securities, plus the minimum aggregate amount of additional consideration (as set forth in the instruments relating thereto, without regard to any provision contained therein designed to protect against dilution) payable to the Corporation upon the exercise of such Options or the conversion or exchange of such Convertible Securities, or in the case of Options for Convertible Securities, the exercise of such Options for Convertible Securities and the conversion or exchange of such Convertible Securities, by

(B) the maximum number of shares of Common Stock (as set forth in the instruments relating thereto, without regard to any provision contained therein designed to protect against the dilution) issuable upon the exercise of such Options or conversion or exchange of such Convertible Securities.

(f) In case:

(i) the Corporation shall declare a dividend (or any other distribution) on Common Stock payable otherwise than in cash out of its retained earnings; or

(ii) the Corporation shall authorize the granting to the holders of Common Stock of rights or warrants to subscribe for or purchase any shares of capital stock of any class or of any other rights; or

(iii) of any reclassification of the Common Stock (other than a subdivision, split or combination of its outstanding shares of Common Stock), or of any consolidation or merger to which the Corporation is a party and for which approval of any stockholders of the Corporation is required, or of the sale or transfer of all or substantially all of the assets of the Corporation; or

(iv) of the voluntary or involuntary dissolution, liquidation or winding up of the Corporation;

then the Corporation shall cause to be mailed to each holder of shares of Series B Preferred Stock at its address as shown on the books of the Corporation, at least 30 days (or 20 days in any case specified in clause (i) or (ii) above) prior to the applicable record or effective date hereinafter specified, a notice stating (x) the date on which a record is to be taken for the purpose of such dividend, distribution, rights or warrants,

or, if a record is not to be taken, the date as of which the holders of Common Stock of record to be entitled to such dividend, distribution, rights or warrants are to be determined, or (y) the date on which such reclassification, liquidation or winding up is expected to become effective, and the date as of which it is expected that holders of Common Stock of record shall be entitled to exchange their shares of Common Stock for securities, cash or other property deliverable upon such reclassification, consolidation, merger, sale, transfer, dissolution, liquidation or winding up.

(g) For the purposes of this paragraph (4), the term "Common Stock" shall mean (i) the class of stock designated as the Common Stock of the corporation on the date of this Certificate of Designations, and (ii) any other class of common stock, including any class resulting from successive changes or reclassifications of such Common Stock consisting solely of changes in par value or from no par value to par value or from par value to no par value.

(h) No fractional share of Common Stock, or scrip representing a fractional share, shall be issuable upon the conversion of any Series B Preferred Stock. If a certificate or certificates representing more than one share of series B Preferred Stock shall be surrendered for conversion at one time by the same holder, the number of full shares of Common Stock issuable upon conversion thereof shall be computed on the basis of the aggregate number of shares represented by certificates so surrendered. If any fractional interest in a share of Common Stock would be deliverable upon the conversion of any shares of Series B Preferred Stock, the Corporation shall pay, in lieu thereof, in cash the Conversion Price thereof as of the business day immediately preceding the date of such conversion.

(i) Such number of shares of Common Stock as may from time to time be required for such purpose shall be reserved for issuance upon conversion of outstanding shares of Series B Preferred Stock.

(j) if the Corporation shall at any time or from time to time effect a subdivision or stock split of the outstanding Common Stock, the Conversion Price of the Series B Preferred Stock then in effect immediately before that subdivision or stock split shall be-proportionately decreased. If the Corporation shall at any time or from time to time combine the outstanding shares of Common Stock, the conversion Price of the Series B Preferred Stock then in effect immediately before the Combination shall be proportionately increased. Any adjustment under this paragraph shall become effective at the close of business on the date the subdivision, stock split or combination, as the case may be, becomes effective.

(k) In the event the Corporation at any time or from time to time shall make or issue, or fix a record date for the determination of holders of Common Stock entitled to receive,

a dividend or other distribution payable in additional shares of Common Stock, then and in each such event the Conversion Price of the Series B Preferred Stock then in effect shall be decreased as of the time of such issuance or, in the event such a record date shall have been fixed, as of the close of business on such record date, by multiplying the Conversion Price of the Series B Preferred Stock then in effect by a fraction:

(1) the denominator of which shall be the sum of the total number of shares of Common Stock issued and outstanding immediately prior to the time of such issuance or the close of business on such record date, plus the number of shares of Common Stock issuable in payment of such dividend or distribution, and

(2) the numerator of which shall be the total number of shares of Common Stock issued and outstanding immediately prior to the time of such issuance or the close of business on such record date;

provided, however, if such record date shall have been fixed and such dividend is not fully paid or if such distribution is not fully made on the date fixed therefor, the Conversion Price of Series B Preferred Stock shall be recomputed accordingly as of the close of business on such record date and thereafter the Conversion Price of Series B Preferred Stock shall be adjusted pursuant to this paragraph as of the time of actual payment or issuance of such dividends or distributions.

(l) In the event the Corporation at any time or from time to time shall make or issue, or fix a record date for the determination of holders of Common Stock entitled to receive, a dividend or other distribution payable in securities of the Corporation other than shares of Common Stock, then and in each such event provision shall be made so that the holders of Series B Preferred Stock shall receive upon conversion thereof in addition to the number of shares of Common Stock receivable thereupon, the amount of such other securities of the Corporation that they would have received had their Series B Preferred Stock been converted into Common Stock on the date, or the record date, of such event and had thereafter, during the period from the date of such event to and including the Conversion Date, retained such securities receivable by them as aforesaid during such period, all subject to further adjustment as provided herein during such period.

(m) If the Common Stock issuable upon the conversion of the Series B Preferred Stock shall be changed into the same or a different number of shares of any class or classes of stock, whether by capital reorganization, reclassification, exchange, substitution or otherwise, then and in each such event the holder of each such share of Series B Preferred Stock shall have the right thereafter to convert such share into the kind and amount of shares of stock and other securities and property receivable upon such reorganization, reclassification, exchange,

substitution or other change, by holders of the number of shares of Common Stock into which such shares of Series B Preferred Stock might have been converted immediately prior to such reorganization, reclassification, exchange, substitution or other change, all subject to further adjustment as provided herein.

(5) Liquidation Preference.

(a) In the event of any voluntary or involuntary liquidation, dissolution or winding up of the affairs of the Corporation, the holders of shares of Series B Preferred Stock then outstanding shall be entitled to be paid out of the assets of the Corporation available for distribution to its shareholders an amount in cash equal to $1.30 for each share outstanding, plus an amount in cash equal to all declared but unpaid dividends thereon to the date fixed for liquidation, dissolution or winding up before any payment shall be made or any assets distributed to the holders of any Junior Securities. If the assets of the Corporation, or the proceeds thereof, are not sufficient to pay in full the liquidation payments payable to the holders of outstanding shares of the Series B Preferred Stock and any Parity Securities, then the holders of all such shares shall share ratably in such distribution of assets, or the proceeds thereof, in accordance with the amount which would have been payable on such distribution if the amounts to which the holders of outstanding shares of Series B Preferred Stock and the holders of outstanding shares of such Parity Securities are entitled were paid in full. Except as provided in this paragraph (5)(a), holders of Series B Preferred Stock shall not be entitled to any distribution in the event of liquidation, dissolution or winding up of the affairs of the Corporation.

(b) For the purposes of this paragraph (5), neither the voluntary sale, conveyance, exchange or transfer (for cash, shares of stock, securities or other consideration) of all or substantially all the property or assets of the Corporation nor the consolidation or merger of the Corporation with or into one or more other corporations shall be deemed to be a liquidation, dissolution or winding up of the Corporation, voluntary or involuntary unless such voluntary sale, conveyance, exchange or transfer, or merger or consolidation, shall be in connection with a plan of liquidation, dissolution or winding up of the Corporation.

(6) Voting. In addition to any voting rights provided by law and to any voting rights of the holders of the Series B Preferred Stock, as or as part of a separate class or series, pursuant to this Certificate or any provision of the Certificate of Incorporation of the Corporation, the holder of each outstanding share of Series B Preferred Stock shall be entitled to vote on any matter voted on by holders of Common Stock, voting together as a single class with the holders of the Common Stock, and any other shares entitled to vote in the ordinary course. With respect to any such vote, each share of Series B Preferred Stock shall entitle the holder thereof to cast one vote.

(7) Reports. So long as any of the Series B Preferred Stock is outstanding, the Corporation will furnish the holders thereof with the quarterly and annual financial reports, if any, that the Corporation is required to file with the Securities and Exchange Commission pursuant to Section 13 or Section 15(d) of the Securities Exchange Act of 1934.

(8) General Provisions.

(a) The term **"person"** as used herein means any corporation, partnership, trust, organization, association, other entity or individual.

(b) The term **"outstanding,"** when used with reference to shares of stock, shall mean issued shares, excluding shares held by the Corporation or any subsidiary of the Corporation.

(c) The headings of the paragraphs, subparagraphs, clauses and subclauses of this Certificate of Designations are for convenience of reference only and shall not define, limit or affect any of the provisions hereof.

IN WITNESS WHEREOF, FIBROGEN, Inc. has caused this Amended and Restated Certificate of Designations to be signed by the undersigned this 18th day of April, 1996.

FIBROGEN, INC.

/s/ Julian N. Stern

Julian N. Stern
Secretary

CERTIFICATE OF DESIGNATIONS
OF
SERIES C CONVERTIBLE PREFERRED STOCK
OF
FIBROGEN, INC.

FIBROGEN, INC., a Delaware corporation (the "**Corporation**"), pursuant to the provisions of Section 151 of the General Corporation Law of the State of Delaware, does hereby make this Certificate of Designations and does hereby state and certify that, pursuant to the authority expressly vested in the Board of Directors of the Corporation by the Certificate of Incorporation of the Corporation, the Board of Directors has duly adopted the following resolutions:

RESOLVED, that, pursuant to Article FOURTH of the Certificate of Incorporation, as amended, which authorizes 35,000,000 shares of preferred stock, $.01 par value ("**Preferred Stock**"), the Board of Directors hereby fixes the powers, designations, preferences and relative, participating, optional and other rights, and the qualifications, limitations and restrictions, of a series of Preferred Stock.

RESOLVED, that each share of Series C Preferred Stock shall rank equally in all respects and shall be subject to the following provisions:

(1) Number and Designation. 8,000,000 shares of the Preferred Stock of the Corporation shall be designated as Series C Convertible Preferred Stock ("**Series C Preferred Stock**").

(2) Rank. The Series C Preferred Stock shall, with respect to rights on liquidation, dissolution and winding up, rank prior to all classes of the Corporation's common stock, $.01 par value ("**Common Stock**"). The Series C Preferred Stock shall, with respect to rights on liquidation, dissolution and winding up, rank junior to the Series A Convertible Preferred Stock ("**Series A Preferred Stock**") and the Series B Convertible Preferred Stock ("**Series B Preferred Stock**") and pari passu with the Series D Convertible Preferred Stock. All equity securities of the Corporation to which the Series C Preferred Stock ranks prior (whether with respect to liquidation, dissolution, winding up or otherwise), including the Common Stock, are collectively referred to herein as the "**Junior Securities**." All equity securities of the Corporation with which the Series C Preferred Stock ranks on a parity (whether with respect to liquidation, dissolution, winding up or otherwise), are collectively referred to herein as the "**Parity Securities**." All equity securities of the Corporation to which the Series C Preferred Stock ranks junior (whether with respect to liquidation, dissolution, winding up or otherwise), are collectively referred to herein as the

"**Senior Securities**". The respective definitions of Junior Securities, Parity Securities and Senior Securities shall also include any rights, options or warrants exercisable for any of the Junior Securities, Parity Securities and Senior Securities, as the case may be. The Series C Preferred Stock shall be subject to the creation of Junior Securities, Parity Securities and Senior Securities.

(3) Dividends. The holders of shares of Series C Preferred Stock shall be entitled to receive, when, as and if declared by the Board of Directors, out of funds legally available for the payment of dividends, to the extent as, on the same basis as, at the same rate as, and contemporaneously with, cash dividends when, as and if declared by the Board of Directors with respect to shares of any Common Stock. Such dividends shall be paid to the holders of record at the close of business on the record date specified by the Board of Directors of the Corporation at the time such dividend is declared, provided, however, that such record date shall not be more than 60 days after or less than 10 days prior to the applicable dividend payment date.

(4) Conversion.

(a) Each share of Series C Preferred Stock shall be convertible, at the option of the holder thereof except as otherwise provided in paragraph (4) (b) below, at any time after the date of issuance of such share, at the office of the Corporation or any transfer agent for such stock, into such number of fully paid and non-assessable shares (calculated as to each conversion to the nearest 1/100th of a share) of Common Stock as is determined by dividing $1.60 by the Conversion Price (as defined below) applicable to such share, determined as hereinafter provided, in effect on the date the certificate is surrendered for conversion. The price at which shares of Common Stock shall be deliverable upon conversion of shares of Series C Preferred Stock (the "**Conversion Price**") shall initially be $1.60 per share of Common Stock. Such initial Conversion Price shall be adjusted as hereinafter provided.

(b) Notwithstanding anything to the contrary herein, each outstanding share of Series C Preferred Stock shall automatically convert upon a public offering of Common Stock at a price of at least $2.00 per share if the total aggregate proceeds to the Corporation before underwriting commissions and expenses are, at least $10,000,000.

(c) Before any holder of Series C Preferred Stock shall be entitled to receive a certificate or certificates for shares of Common Stock upon conversion, such holder shall surrender the certificate or certificates for the holder's shares of Series C Preferred Stock, duly endorsed, at the office of the Corporation or of any transfer agent for such stock, and, unless such conversion is automatic pursuant to clause (b) above, shall give written notice to the Corporation at such office that such

holder elects to convert the same and shall state therein the name or names in which such holder wishes the certificate or certificates for shares of Common Stock to be issued. The Corporation shall, as soon as practicable thereafter, issue and deliver at such office to such holder of Series C Preferred Stock, a certificate or certificates for the number of shares of Common Stock to which such holder shall be entitled as aforesaid. Such conversion shall be deemed to have been made (i) in the case such conversion is automatic pursuant to clause (b) above, upon the effectiveness of the registration statement relating to such offering, and (ii) in all other cases, immediately prior to the close of business on the date of surrender of the shares of Series C Preferred Stock to be converted (in either case, the "**Conversion Date**"), and the person or persons entitled to receive the shares of Common Stock issuable upon such conversion shall be treated for all purposes as the record holder or record holders of such shares of Common Stock on such date.

(d) All shares of Series C Preferred Stock which have been converted as herein provided shall no longer be deemed to be outstanding and all rights with respect to such shares, including the rights, if any, to receive notices and to vote, shall forthwith cease and terminate, except only the right of the holders thereof, subject to the provisions of clause (c) of this paragraph (4), to receive shares of Common Stock in exchange therefor.

(e) In case:

(i) the Corporation shall declare a dividend (or any other distribution) on Common Stock payable otherwise than in cash out of its retained earnings; or

(ii) the Corporation shall authorize the granting to the holders of Common Stock of rights or warrants to subscribe for or purchase any shares of capital stock of any class or of any other rights; or

(iii) of any reclassification of the Common Stock (other than a subdivision, split or combination of its outstanding shares of Common Stock), or of any consolidation or merger to which the Corporation is a party and for which approval of any stockholders of the Corporation is required, or of the sale or transfer of all or substantially all of the assets of the Corporation; or

(iv) of the voluntary or involuntary dissolution, liquidation or winding up of the Corporation; then the Corporation shall cause to be mailed to each holder of shares of Series C Preferred Stock at its address as shown on the books of the Corporation, at least 30 days (or 20 days in any case specified in clause (i) or (ii) above) prior to the applicable record or effective date hereinafter specified, a notice stating (x) the date on which a record is to be taken for the purpose of such dividend, distribution, rights or warrants,

or, if a record is not to be taken, the date as of which the holders of Common Stock of record to be entitled to such dividend, distribution, rights or warrants are to be determined, or (y) the date on which such reclassification, liquidation or winding up is expected to become effective, and the date as of which it is expected that holders of Common Stock of record shall be entitled to exchange their shares of Common Stock for securities, cash or other property deliverable upon such reclassification, consolidation, merger, sale, transfer, dissolution, liquidation or winding up.

(f) For the purposes of this paragraph (4), the term "Common Stock" shall mean (i) the class of stock designated as the Common Stock of the Corporation on the date of this Certificate of Designations, and (ii) any other class of common stock, including any class resulting from successive changes or reclassifications of such Common Stock consisting solely of changes in par value or from no par value to par value or from par value to no par value.

(g) No fractional share of Common Stock, or scrip representing a fractional share, shall be issuable upon the conversion of any Series C Preferred Stock. If a certificate or certificates representing more than one share of Series C Preferred Stock shall be surrendered for conversion at one time by the same holder, the number of full shares of Common Stock issuable upon conversion thereof shall be computed on the basis of the aggregate number of shares represented by certificates so surrendered. If any fractional interest in a share of Common Stock would be deliverable upon the conversion of any shares of Series C Preferred Stock, the Corporation shall pay, in lieu thereof, in cash the Conversion Price thereof as of the business day immediately preceding the date of such conversion.

(h) Such number of shares of Common Stock as may from time to time be required for such purpose shall be reserved for issuance upon conversion of outstanding shares of Series C Preferred Stock.

(i) If the Corporation shall at any time or from time to time effect a subdivision or stock split of the outstanding Common Stock, the Conversion Price of the Series C Preferred Stock then in effect immediately before that subdivision or stock split shall be proportionately decreased. If the Corporation shall at any time or from time to time combine the outstanding shares of Common Stock, the Conversion Price of the Series C Preferred Stock then in effect immediately before the combination shall be proportionately increased. Any adjustment under this paragraph shall become effective at the close of business on the date the subdivision, stock split or combination, as the case may be, becomes effective.

(j) In the event the Corporation at any time or from time to time shall make or issue, or fix a record date for the determination of holders of Common Stock entitled to receive,

a dividend or other distribution payable in additional shares of Common Stock, then and in each such event the Conversion Price of the Series C Preferred Stock then in effect shall be decreased as of the time of such issuance or, in the event such a record date shall have been fixed, as of the close of business on such record date, by multiplying the Conversion Price of the Series C Preferred Stock then in effect by a fraction:

(1) the denominator of which shall be the sum of the total number of shares of Common Stock issued and outstanding immediately prior to the time of such issuance or the close of business on such record date, plus the number of shares of Common Stock issuable in payment of such dividend or distribution, and

(2) the numerator of which shall be the total number of shares of Common Stock issued and outstanding immediately prior to the time of such issuance or the close of business on such record date;

provided, however, if such record date shall have been fixed and such dividend is not fully paid or if such distribution is not fully made on the date fixed therefor, the Conversion Price of Series C Preferred Stock shall be recomputed accordingly as of the close of business on such record date and thereafter the Conversion Price of Series C Preferred Stock shall be adjusted pursuant to this paragraph as of the time of actual payment or issuance of such dividends or distributions.

(k) In the event the Corporation at any time or from time to time shall make or issue, or fix a record date for the determination of holders of Common Stock entitled to receive, a dividend or other distribution payable in securities of the Corporation other than shares of Common Stock, then and in each such event provision shall be made so that the holders of Series C Preferred Stock shall receive upon conversion thereof in addition to the number of shares of Common Stock receivable thereupon, the amount of such other securities of the Corporation that they would have received had their Series C Preferred Stock been converted into Common Stock on the date, or the record date, of such event and had thereafter, during the period from the date of such event to and including the Conversion Date, retained such securities receivable by them as aforesaid during such period, all subject to further adjustment as provided herein during such period

(l) If the Common Stock issuable upon the conversion of the Series C Preferred Stock shall be changed into the same or a different number of shares of any class or classes of stock, whether by capital reorganization, reclassification, exchange, substitution or otherwise, then and in each such event the holder of each such share of Series C Preferred Stock shall have the right thereafter to convert such share into the kind and amount of shares of stock and other securities and property receivable upon such reorganization, reclassification, exchange,

substitution or other change, by holders of the number of shares of Common Stock into which such shares of Series C Preferred Stock might have been converted immediately prior to such reorganization, reclassification, exchange, substitution or other change, all subject to further adjustment as provided herein.

(5) Liquidation Preference.

(a) In the event of any voluntary or involuntary liquidation, dissolution or winding up of the affairs of the Corporation, the holders of shares of Series C Preferred Stock then outstanding shall be entitled to be paid out of the assets of the Corporation available for distribution to its shareholders an amount in cash equal to $1.60 for each share outstanding, plus an amount in cash equal to all declared but unpaid dividends thereon to the date fixed for liquidation, dissolution or winding up before any payment shall be made or any assets distributed to the holders of any Junior Securities. If the assets of the Corporation, or the proceeds thereof, are not sufficient to pay in full the liquidation payments payable to the holders of outstanding shares of the Series C Preferred Stock and any Parity Securities, then the holders of all such shares shall share ratably in such distribution of assets, or the proceeds thereof, in accordance with the amount which would have been payable on such distribution if the amounts to which the holders of outstanding shares of Series C Preferred Stock and the holders of outstanding shares of such Parity Securities are entitled were paid in full. Except as provided in this paragraph (5)(a), holders of Series C Preferred Stock shall not be entitled to any distribution in the event of liquidation, dissolution or winding up of the affairs of the Corporation.

(b) For the purposes of this paragraph (5), neither the voluntary sale, conveyance, exchange or transfer (for cash, shares of stock, securities or other consideration) of all or substantially all the property or assets of the Corporation nor the consolidation or merger of the corporation with or into one or more other corporations shall be deemed to be a liquidation, dissolution or winding up of the Corporation, voluntary or involuntary unless such voluntary sale, conveyance, exchange or transfer, or merger or consolidation, shall be in connection with a plan of liquidation, dissolution or winding up of the Corporation.

(6) Voting. In addition to any voting rights provided by law and to any voting rights of the holders of the Series C Preferred Stock, as or as part of a separate class or series, pursuant to this Certificate or any provision of the Certificate of Incorporation of the Corporation, the holder of each outstanding share of Series C Preferred Stock shall be entitled to vote on any matter voted on by holders of Common Stock, voting together as a single class with the holders of the Common Stock, and any other shares entitled to vote in the ordinary course. With respect to any such vote, each share of Series C Preferred Stock shall entitle the holder thereof to cast one vote.

(7) Reports. So long as any of the Series C Preferred Stock is outstanding, the Corporation will furnish the holders thereof with the quarterly and annual financial reports, if any, that the Corporation is required to file with the Securities and Exchange Commission pursuant to Section 13 or Section 15(d) of the Securities Exchange Act of 1934.

(8) General Provisions.

(a) The term "person" as used herein means any corporation, partnership, trust, organization, association, other entity or individual,

(b) The term "outstanding," when used with reference to shares of stock, shall mean issued shares, excluding shares held by the Corporation or any subsidiary of the Corporation.

(c) The headings of the paragraphs, subparagraphs, clauses and subclauses of this Certificate of Designations are for convenience of reference only and shall not define, limit or affect any of the provisions hereof.

IN WITNESS WHEREOF, FIBROGEN, Inc. has caused this Certificate of Designations to be signed by the undersigned this sixth day of June, 1997.

FIBROGEN, INC.

By: /s/ Julian N. Stern
Julian N. Stern, Secretary

CERTIFICATE OR DESIGNATIONS
OF
SERIES D REOPRO TRACKING PREFERRED STOCK
OF
FIBROGEN, INC.

FIBROGEN, INC., a Delaware corporation (the "**Corporation**"), pursuant to the provisions of Section 151 of the General Corporation Law of the State of Delaware, does hereby make this Certificate of Designations and does hereby state and certify that, pursuant to the authority expressly vested in the Board of Directors of the Corporation by the Certificate of Incorporation of the Corporation, the Board of Directors has duly adopted the following resolutions:

RESOLVED, that, pursuant to Article FOURTH of the Certificate of Incorporation, which authorizes 35,000,000 shares of preferred stock, $.01 par value ("**Preferred Stock**"), the Board of Directors hereby fixes the powers, designations, preferences and relative, participating, optional and other rights, and the qualifications, limitations and restrictions, of a series of Preferred Stock.

RESOLVED, that each share of Series D Preferred Stock shall rank equally in all respects and shall be subject to the following provisions:

(1) Number and Designation. 3,475 shares of the Preferred Stock of the Corporation shall be designated as Series D ReoPro Tracking Preferred Stock ("**Series D Preferred Stock**").

(2) Rank. The Series D Preferred Stock shall, with respect to rights on liquidation, dissolution and winding up, rank prior to all classes of the corporation's common stock, $.01 par value ("**Common Stock**"), and rank junior to the Series A and Series B Preferred Stock and pari passu with the Series C Preferred Stock, but only to the extent provided in Paragraph 5 hereof. All equity securities of the Corporation to which the Series D Preferred Stock ranks prior (whether with respect to liquidation, dissolution, winding up or otherwise), including the Common Stock, are collectively referred to herein as the "Junior Securities." The definition of Junior Securities shall also include any rights, options or warrants exercisable for any Junior Securities,

(3) Dividends. The holder of each share of Series D Preferred Stock shall be entitled to receive, as legally available for the payment of dividends, 1/3475 of the following amounts:

(i) 62.5% of the net proceeds received by the Corporation as a result of a cash tender offer for or exercise by Centocor, Inc., of its rights to purchase the limited partnership interests in Centocor Clinical Partners III, L.P. (**"CPIII"**), to the extent that such net proceeds received by the Corporation exceed the sum of (x) $1.60 multiplied by the number of shares of Series C Preferred Stock that the Corporation issues to the holders of the outstanding shares of stock of Antibody Technologies, Ltd., pursuant to a tender offer by the Corporation for all such outstanding shares or to Antibody Technologies, Ltd. for the entire remaining limited partnership interest in Pharmaceutical Partners II, of Antibody Technologies, Ltd., plus (y) any cash taxes that would be payable by the Corporation solely as the result of its receipt of such net proceeds as if they were the only net income received by the Corporation and there were no deductible expenses or other income tax deductions or offsets of the Corporation other than any costs of collecting such net proceeds, and plus (z) any costs of collecting such net proceeds;

(ii) 62.5% of the net proceeds received by the Corporation from any litigation or settlement of any litigation or threatened litigation brought by the limited partners of CPIII or by the Corporation based on its interest in the contingent payment rights held by Pharmaceutical Partners II, L.P. against Centocor, Inc. and/or Eli Lilly which are based on transactions in 1992 between Centocor, Inc. and Eli Lilly that involved CPIII and rights to commercialize ReoPro, which net proceeds shall be reduced by (x) any cash taxes payable by the Corporation solely as the result of its receipt of such net proceeds and (y) any costs of collecting such net proceeds; and

(iii) 49.9% of the net proceeds received by the Corporation as a successor limited partner in CPIII attributable to favorable adjustment of the royalty rates or net sales base or other consideration to which the CPIII limited partners become entitled as the result of the litigation or settlement of the litigation or threatened litigation described in (ii) above, reduced by (x) any cash taxes payable by the Corporation solely as the result of the receipt of such net proceeds and (y) any costs of collecting such net proceeds.

(iv) Such dividends shall be paid (x) so long as the Corporation has outstanding Series C Preferred Stock and there is not a public trading market for its Common Stock as the result of an initial public offering of such Common Stock, in the form of Series C Convertible Preferred Stock of the Corporation valued at $1.60 per share (which valuation shall be adjusted in the same manner as the Conversion Price of the Corporation's Series C Preferred Stock is adjusted) and (y) after such initial public offering of the Corporation's Common Stock, in the form of Common Stock of the Corporation valued at the average closing price of the Corporation's Common Stock on the principal market in which it is traded for the 20 trading days prior to the date of declaration of the dividend. Payment shall be made to the

holders of record at the close of business on the record date specified by the Board of Directors of the Corporation at the time such dividend is declared, provided, however, that such record date shall be the last day of each calendar quarter unless the Board of Directors, for good and sufficient reason shall determine a different reasonable record date that shall be not more than 60 days after or less than 10 days prior to the applicable dividend payment date.

(4) Conversion.

(a) Each share of Series D Preferred Stock shall automatically convert at any time after the date of issuance of such share, at the office of the Corporation or any transfer agent for such stock, into such number of fully paid and nonassessable shares (calculated as to each conversion to the nearest 1/100th of a share) of Series C Convertible Preferred Stock (or the number of shares of Common Stock into which each share of such series may have been automatically converted) as follows:

(i) If final decision in any litigation or settlement of any litigation or threatened litigation described in Paragraph 3(ii) above occurs prior to September 30, 1997, each share of Series D Preferred Stock shall automatically convert into that number of shares of Series C Convertible Preferred stock valued at $1.60 per share (which valuation shall be adjusted in the same manner as the Conversion Price of the Corporation's Series C Preferred Stock is adjusted) equal to 1/3475 of the present value of projected future distributions under Paragraph 3(i), (ii) and (iii) above, which present value of net proceeds (after the reductions specified therein) shall be determined as of January 1, 1997, using a 15% annual discount rate and otherwise determined by the same methodology used by representatives of the Corporation and the shareholders of Antibody Technologies, Ltd. in arriving at the offer to exchange 2,250,225 shares of the Corporation's Series C Preferred Stock for all of the outstanding shares of Antibody Technologies, Ltd., or the aforesaid limited partnership interest, without taking into consideration the inclusion of any shares of Series D Preferred Stock in the exchange for the contingent interest in net proceeds from final decision in or settlement of possible litigation or threatened litigation described in Paragraph 3(ii) above.

(ii) If final decision in any litigation or settlement of any litigation or threatened litigation described in Paragraph 3(ii) above occurs after September 30, 1997, each share of Series D Preferred Stock shall not automatically convert into shares of Series C Convertible Preferred Stock pursuant to paragraph 4(a)(i) above; nevertheless, the holders of a majority in number of the outstanding Series D Preferred Stock and the Corporation may agree to a substituted conversion formula and event or events that may trigger conversion, in which case such

agreement shall be binding on all holders of Series D Preferred Stock.

(b) Before any holder of Series D Preferred Stock shall be entitled to receive a certificate or certificates for shares of Common Stock upon conversion, such holder shall surrender the certificate or certificates for the holder's shares of Series D Preferred Stock, duly endorsed, at the office of the Corporation or of any transfer agent for such stock. The Corporation shall, as soon as practicable thereafter, issue and deliver at such office to such holder of Series D Preferred Stock, a certificate or certificates for the number of shares of Series C Convertible Preferred Stock to which such holder shall be entitled as aforesaid. Such conversion shall be deemed to have been made immediately prior to the close of business on the date of surrender of the shares of Series D Preferred Stock to be converted (in either case, the "**Conversion Date**"), and the person or persons entitled to receive the shares of Series C Convertible Preferred Stock issuable upon such conversion shall be treated for all purposes as the record holder or record holders of such shares of Series C Convertible Preferred Stock on such date.

(d) All shares of Series D Preferred Stock which have been converted as herein provided shall no longer be deemed to be outstanding and all rights with respect to such shares, including the rights, if any, to receive notices and to vote, shall forthwith cease and terminate, except only the right of the holders thereof, subject to the provisions of clause (c) of this paragraph (4), to receive shares of Series C Convertible Preferred Stock in exchange therefor.

(5) Liquidation Preference.

(a) In the event of any voluntary or involuntary liquidation, dissolution or winding up of the affairs of the Corporation, the holders of each share of Series D Preferred Stock then outstanding shall be entitled to receive one contractual contingent right to receive payments equivalent to the contingent dividend payments provided to be paid with respect to such share pursuant to Paragraph 3 ("Dividends") above as if no liquidation had occurred, plus an amount in cash equal to all declared but unpaid dividends thereon to the date fixed for liquidation, dissolution or winding up before any payment shall be made or any assets distributed to the holders of any Junior Securities. Except as provided in this paragraph (5)(a), holders of Series D Preferred Stock shall not be entitled to any distribution in the event of liquidation, dissolution or winding up of the affairs of the Corporation.

(b) For the purposes of this paragraph (5), neither the voluntary sale, conveyance, exchange or transfer (for cash, shares of stock, securities or other consideration) of all or substantially all the property or assets of the Corporation nor the consolidation or merger of the Corporation with or into one or more other corporations shall be deemed to be a

liquidation, dissolution or winding up of the Corporation, voluntary or involuntary unless such voluntary sale, conveyance, exchange or transfer, or merger or consolidation, shall be in connection with a plan of liquidation, dissolution or winding up of the Corporation.

(6) Voting. In addition to any voting rights provided by law and to any voting rights of the holders of the Series D Preferred Stock, as or as part of a separate class or series, pursuant to this Certificate or any provision of the Certificate of Incorporation of the Corporation, the holder of each outstanding share of Series D Preferred Stock shall be entitled to vote on any matter voted on by holders of Common Stock, voting together as a single class with the holders of the Common Stock, and any other shares entitled to vote in the ordinary course. With respect to any such vote, each share of Series D Preferred Stock shall entitle the holder thereof to cast one vote.

(7) General Provisions.

(a) The term "**person**" as used herein means any corporation, partnership, trust, organization, association, other entity or individual.

(b) The term "**outstanding**," when used with reference to shares of stock, shall mean issued shares, excluding shares held by the Corporation or any subsidiary of the Corporation.

(c) The headings of the paragraphs, subparagraphs, clauses and subclauses of this Certificate of Designations are for convenience of reference only and shall not define, limit or affect any of the provisions hereof.

IN WITNESS WHEREOF, FIBROGEN, Inc. has caused this Certificate of Designations to be signed and attested by the undersigned this sixth day of June, 1997.

FIBROGEN, INC.

By: /s/ Julian N. Stern
JULIAN N. STERN, Secretary

CERTIFICATE OF AMENDMENT OF
THE AMENDED DESIGNATION Of
SERIES B CONVERTIBLE PREFERRED STOCK OF
FIBROGEN, INC.,
a Delaware corporation

It is hereby certified that:

1. The name of the corporation (hereinafter called the "Corporation") is FIBROGEN, INC.

2. The Amended Designation of Series B Convertible Preferred Stock of the Corporation filed with the Delaware Secretary of State effective April 19, 1996 is hereby amended by striking out paragraph (1) thereor and by substituting in lieu or said paragraph the following new paragraph:

> "(1) Number and Designation. 14,100,000 shares of the Preferred Stock of the Corporation shall be designated as Series B Convertible Preferred Stock ("Series B Preferred Stock").

3. The amendment of the Amended Designation of Series B Convertible Preferred Stock herein certified has been duly adopted in accordance with the provisions of Sections 228 and 242 of the General Corporation Law of the state of Delaware. Prompt written notice of the adoption of the amendment herein certified has been given to those stockholders who have not consented in writing thereto, as provided in Section 228 of the General Corporation Law of the State of Delaware.

Executed effective the 26th day of July, 1997.

/s/ Julian N. Stern
Julian N. Stern, Secretary

Series B Preferred Stock shall be subject to the creation of Junior Securities, Parity Securities and Senior Securities.

(3) Dividends. The holders of shares of Series B Preferred Stock shall be entitled to receive, when, as and if declared by the Board of Directors, out of funds legally available for the payment of dividends, to the extent as, on the same basis as, at the same rate as, and contemporaneously with, cash dividends when, as and if declared by the Board of Directors with respect to shares of any Common Stock or Parity Securities. Such dividends shall be paid to the holders of record at the close of business on the record date specified by the Board of Directors of the Corporation at the time such dividend is declared, provided, however, that such record date shall not be more than 60 days or less than 10 days prior to the applicable dividend payment date.

(4) Conversion.

(a) Each share of Series B Preferred Stock shall be convertible, at the option of the holder thereof except as otherwise provided in paragraph (4) (b) below, at any time after the date of issuance of such share, at the office of the Corporation or any transfer agent for such stock, into such number of fully paid and non-assessable shares (calculated as to each conversion to the nearest 1/100th of a share) of Common Stock as is determined by dividing $1.30 by the Conversion Price (as defined below) applicable to such share, determined as hereinafter provided, in effect on the date the certificate is surrendered for conversion. The price at which shares of Common Stock shall be deliverable upon conversion of shares of Series B Preferred Stock (the **"Conversion Price"**) shall initially be $1.30 per share of Common Stock. Such initial Conversion Price shall be adjusted as hereinafter provided.

(b) Notwithstanding anything to the contrary herein, each outstanding share of Series B Preferred stock shall automatically convert upon a public offering of Common Stock at a price of at least $2.00 per share if the total aggregate proceeds to the Corporation before underwriting commissions and expenses are at least $10,000,000.

(c) Before any holder of Series B Preferred Stock shall be entitled to receive a certificate or certificates for shares of Common Stock upon conversion, such holder shall surrender the certificate or certificates for the holder's shares of Series B Preferred Stock, duly endorsed, at the office of the corporation or of any transfer agent for such stock, and, unless such conversion is automatic pursuant to clause (b) above, shall give written notice to the Corporation at such office that such holder elects to convert the same and shall state therein the name or names in which such holder wishes the certificate or certificates for shares of Common Stock to be issued. The Corporation shall, as soon as practicable thereafter, issue and deliver at such office to such holder of Series B Preferred

Stock, a certificate or certificates for the number of shares of Common stock to which such holder shall be entitled as aforesaid. Such conversion shall be deemed to have been made (i) in the case such conversion is automatic pursuant to clause (b) above, upon the effectiveness of the registration statement relating to such offering, and (ii) in all other cases, immediately prior to the close of business on the date of surrender of the shares of Series B Preferred Stock to be converted (in either case, the "Conversion Date"), and the person or persons entitled to receive the shares of Common Stock issuable upon such conversion shall be treated for all purposes as the record holder or record holders of such shares of Common Stock on such date.

(d) All shares of Series B Preferred Stock which have been converted as herein provided shall no longer be deemed to be outstanding and all rights with respect to such shares, including the rights, if any, to receive notices and to vote, shall forthwith cease and terminate, except only the right of the holders thereof, subject to the provisions of clause (c) of this paragraph (4), to receive shares of Common Stock in exchange therefor.

(e) (i) For the purposes of this clause (e), the following definitions shall apply:

(A) "Options" shall mean rights, options or warrants to subscribe for, purchase or otherwise acquire either Additional Shares of Common Stock or Convertible Securities (as defined below);

(B) "Original Issue Date" shall mean the date on which a share of Series B Preferred Stock was first issued;

(C) "Convertible Securities" shall mean any evidences of indebtedness, shares (other than Common Stock) or other securities convertible into or exchangeable for Additional Shares of Common Stock; and

(D) "Additional Shares of Common Stock" shall mean all shares of Common Stock issued (or, pursuant to clause (e) (iii) hereof, deemed to be issued) by the Corporation after the Original Issue Date, other than shares of Common Stock issued or issuable:

(I) to officers, directors or employees of, or consultants to, the Corporation pursuant to stock option or stock purchase plans or agreements on terms approved by the Board of Directors of the Corporation;

(II) as a dividend or distribution on shares of the Series B Preferred Stock; or

(III) for which adjustment of the Conversion Price is made pursuant to clause (j) or (k) of this paragraph (4).

(ii) Any provision herein to the contrary notwithstanding, no adjustment in the Conversion Price shall be made in respect of the issuance of Additional Shares of Common Stock unless the consideration per share (determined pursuant to subclause (e) (v) hereof) for an Additional Share of Common Stock issued or deemed to be issued by the corporation is less than the Conversion Price in effect on the date of, and immediately prior to, such issue.

(iii) In the event the Corporation at any time or from time to time after the Original Issue Date shall issue any Options or Convertible Securities or shall fix a record date for the determination of holders of any class of securities then entitled to receive any such Options or Convertible Securities, then the maximum number of shares (as set forth in the instrument relating thereto without regard to any provisions contained therein designed to protect against dilution) of Common Stock issuable upon the exercise of such Options or, in the case of Convertible Securities and Options therefor, the conversion or exchange of such Convertible Securities, shall be deemed to be Additional Shares of Common Stock issued as of the time of such issue or, in case such a record date shall have been fixed, as of the close of business on such record date; provided, that in any such case in which Additional Shares of Common Stock are deemed to be issued:

(1) no further adjustments in the Conversion Price shall be made upon the subsequent issue of Convertible Securities or shares of Common Stock upon the exercise of such options or conversion or exchange of such Convertible Securities;

(2) if such Options or Convertible Securities by their terms provide, with the passage of time or otherwise, for any increase or decrease in the consideration payable to the corporation, or decrease or increase in the number of shares of Common Stock issuable, upon the exercise, conversion or exchange thereof, the Conversion Price computed upon the original issue thereof (or upon the occurrence of a record date with respect thereto), and any subsequent adjustments based thereon, shall, upon any such increase or decrease becoming effective, be recomputed to reflect such increase or decrease insofar as it affects such Options or the rights of conversion or exchange under such Convertible securities (provided, however, that no such adjustment of the Conversion Price shall affect Common Stock previously issued upon conversion of the Series B Preferred Stock);

(3) upon the expiration of any such Options or any rights of conversion or exchange under such Convertible Securities which shall not have been exercised, the

Conversion Price computed upon the original issue thereof (or upon the occurrence of a record data with respect thereto), and any subsequent adjustments based thereon, shall, upon such expiration, be recomputed as if:

(A) in the case of Convertible Securities or Options for Common Stock the only Additional Shares of Common Stock issued were the shares of Common Stock, if any, actually issued upon the exercise of such Options or the conversion or exchange of such Convertible Securities and the consideration received therefor was the consideration actually received by the Corporation for the issue of all such Options, whether or not exercised, plus the consideration actually received by the Corporation upon such exercise, or for the issue of all such Convertible Securities which were actually converted or exchanged, plus the additional consideration, if any, actually received by the Corporation upon such conversion or exchange; and

(B) in the case of Options for Convertible Securities only the Convertible Securities, if any, actually issued upon the exercise thereof were issued at the time of issue of such Options, and the consideration received by the Corporation for the Additional Shares of Common Stock deemed to have been then issued was the consideration actually received by the Corporation for the issue of all such Options, whether or not exercised, plus the consideration deemed to have been received by the Corporation upon the issue of the Convertible Securities with respect to which such options were actually exercised;

(4) no readjustment pursuant to clause (2) or (3) above shall have the effect of increasing the Conversion Price to an amount which exceeds the lower of (a) the Conversion Price on the original adjustment date (before adjustment) and (b) the Conversion Price that would have resulted from any issuance of Additional Shares of Common Stock between the original adjustment date and such readjustment date;

(5) in the case of any Options which expire by their terms not more than 30 days after the date of issue thereof, no adjustments of the Conversion Price shall be made until the expiration or exercise of all such Options, whereupon such adjustment shall be made in the same manner provided in clause (3) above.

(iv) In the event this Corporation, at any time after the Original Issue Date, shall issue Additional Shares of Common Stock (including Additional Shares of Common Stock deemed to be issued pursuant to subclause (e) (iii) hereof) without consideration or for a consideration per share less than the Conversion Price in effect on the date of and immediately prior to such issue, then and in such event, the Conversion Price shall be reduced, concurrently with such issue, to a price (calculated to the nearest cent) determined by multiplying the Conversion Price by a fraction, the numerator of which shall be the number of shares of Common Stock outstanding immediately

prior to such issue plus the number of shares of Common Stock which the aggregate consideration received by the corporation for the total number of Additional Shares of Common Stock so issued would purchase at such Conversion Price in effect immediately prior to such issuance, and the denominator of which shall be the number of shares of Common Stock outstanding immediately prior to such issue plus the number of such Additional Shares of Common Stock so issued. For the purpose of the above calculation, the number of shares of Common Stock outstanding immediately prior to such issue shall be calculated as if (i) all outstanding shares of Preferred Stock and all other outstanding evidences of indebtedness, shares or other securities convertible into or exchangeable for Common Stock had been fully converted into or exchanged for shares of Common Stock immediately prior to such issuance, and (ii) all outstanding rights, options or warrants to subscribe for, purchase or otherwise acquire Common Stock (or to acquire evidences of indebtedness, shares or other Securities convertible into or exchangeable for Common Stock) had been fully exercised (and had been fully converted and exchanged if, upon such exercise, evidences of indebtedness, shares or other securities convertible into or exchangeable for Common Stock would be issued) immediately prior to such issuance, but not including in such calculation any additional shares of Common stock issuable with respect to shares of Preferred Stock, other evidences of indebtedness, shares or other securities convertible into or exchangeable for Common Stock or rights, options or warrants to subscribe for, purchase or otherwise acquire Common Stock solely as a result of the adjustment of the respective Conversion Prices (or other conversion ratios or exercise prices) resulting from the issuance of Additional Shares of Common Stock causing such adjustment.

(v) For purposes of this clause (e), the consideration received by the Corporation for the issue of any Additional Shares of Common Stock shall be computed as follows;

(1) If such consideration consists of cash and property, such consideration shall:

(A) insofar an it consists of cash, be computed at the aggregate amount of cash received by the Corporation excluding amounts paid or payable for accrued interest or accrued dividends;

(B) insofar as it consists of property other than cash, be computed at the fair value thereof at the time of such issue, as determined in good faith by the Board of Directors; and

(C) in the event Additional Shares of Common Stock are issued together with other shares or securities or other assets of the Corporation for consideration which covers both, be the proportion of such consideration so received, computed as provided in clauses (A) and (B) above, as determined in good faith by the Board of Directors.

(2) If such consideration consists of Options and Convertible Securities, the consideration per share received by the Corporation for Additional Shares of Common Stock deemed to have been issued pursuant to subclause (e) (iii), relating to Options and Convertible Securities, shall be determined by dividing:

(A) the total amount, if any, received or receivable by the Corporation as consideration for the issue of such Options or Convertible Securities, plus the minimum aggregate amount of additional consideration (as set forth in the instruments relating thereto, without regard to any provision contained therein designed to protect against dilution) payable to the Corporation upon the exercise of such Options or the conversion or exchange of such Convertible Securities, or in the case of Options for Convertible Securities, the exercise of such Options for Convertible Securities and the conversion or exchange of such Convertible Securities, by

(B) the maximum number of shares of Common Stock (as set forth in the instruments relating thereto, without regard to any provision contained therein designed to protect against the dilution) issuable upon the exercise of such Options or conversion or exchange of such Convertible Securities.

(f) In case:

(i) the Corporation shall declare a dividend (or any other distribution) on Common Stock payable otherwise than in cash out of its retained earnings; or

(ii) the Corporation shall authorize the granting to the holders of Common Stock of rights or warrants to subscribe for or purchase any shares of capital stock of any class or of any other rights; or

(iii) of any reclassification of the Common Stock (other than a subdivision, split or combination of its outstanding shares of Common Stock), or of any consolidation or merger to which the Corporation is a party and for which approval of any stockholders of the Corporation is required, or of the sale or transfer of all or substantially all of the assets of the Corporation; or

(iv) of the voluntary or involuntary dissolution, liquidation or winding up of the Corporation;

then the Corporation shall cause to be mailed to each holder of shares of Series B Preferred Stock at its address as shown on the books of the corporation, at least 30 days (or 20 days in any case specified in clause (i) or (ii) above) prior to the applicable record or effective date hereinafter specified, a notice stating (x) the date on which a record is to be taken for the purpose of such dividend, distribution, rights or warrants,

or, if a record is not to be taken, the date as of which the holders of Common Stock of record to be entitled to such dividend, distribution, rights or warrants are to be determined, or (y) the date on which such reclassification, liquidation or winding up is expected to become effective, and the date as of which it is expected that holders of Common Stock of record shall be entitled to exchange their shares of Common Stock for securities, cash or other property deliverable upon such reclassification, consolidation, merger, sale, transfer, dissolution, liquidation or winding up.

(g) For the purposes of this paragraph (4), the term "Common Stock" shall mean (i) the class of stock designated as the Common Stock of the Corporation on the date of this Certificate of Designations, and (ii) any other class of common stock, including any class resulting from successive changes or reclassifications of such Common Stock consisting solely of changes in par value or from no par value to par value or from par value to no par value.

(h) No fractional share of Common Stock, or scrip representing a fractional share, shall be issuable upon the conversion of any Series B Preferred Stock. If a certificate or certificates representing more than one share of Series B Preferred Stock shall be surrendered for conversion at one time by the same holder, the number of full shares of Common Stock issuable upon conversion thereof shall be computed on the basis of the aggregate number of shares represented by certificates so surrendered. If any fractional interest in a share of Common Stock would be deliverable upon the conversion of any shares of Series B Preferred Stock, the Corporation shall pay, in lieu thereof, in cash the Conversion Price thereof as of the business day immediately preceding the date of such conversion.

(i) Such number of shares of Common Stock as may from time to time be required for such purpose shall be reserved for issuance upon conversion of outstanding shares of Series B Preferred Stock.

(j) If the corporation shall at any time or from time to time effect a subdivision or stock split of the outstanding Common Stock, the Conversion Price of the Series B Preferred Stock then in effect immediately before that subdivision or stock split shall be proportionately decreased. If the Corporation shall at any time or from time to time combine the outstanding shares of Common Stock, the Conversion Price of the Series B Preferred Stock then in effect immediately before the combination shall be proportionately increased. Any adjustment under this paragraph shall become effective at the close of business on the date the subdivision, stock split or combination, as the case may be, becomes effective.

(k) In the event the corporation at any time or from time to time shall make or issue, or fix a record date for the determination of holders of Common Stock entitled to receive,

a dividend or other distribution payable in additional shares of Common Stock, then and in each such event the Conversion Price of the Series B Preferred Stock then in effect shall be decreased as of the time of such issuance or, in the event such a record date shall have been fixed, as of the close of business on such record date, by multiplying the Conversion Price of the Series B Preferred Stock then in effect by a fraction:

(1) the denominator of which shall be the sum of the total number of shares of Common Stock issued and outstanding immediately prior to the time of such issuance or the close of business on such record date, plus the number of shares of Common Stock issuable in payment of such dividend or distribution, and

(2) the numerator of which shall be the total number of shares of Common Stock issued and outstanding immediately prior to the time of such issuance or the close of business on such record date;

provided, however, if such record date shall have been fixed and such dividend is not fully paid or if such distribution is not fully made on the date fixed therefor, the Conversion Price of Series B Preferred Stock shall be recomputed accordingly as of the close of business on such record date and thereafter the Conversion Price of Series B Preferred Stock shall be adjusted pursuant to this paragraph as of the time of actual payment or issuance of such dividends or distributions.

(l) In the event the Corporation at any time or from time to time shall make or issue, or fix a record date for the determination of holders of Common Stock entitled to receive, a dividend or other distribution payable in securities of the Corporation other than shares of Common Stock, then and in each such event provision shall be made so that the holders of Series B Preferred Stack shall receive upon conversion thereof in addition to the number of shares of Common Stock receivable thereupon, the amount of such other securities of the Corporation that they would have received had their Series B Preferred Stock been converted into Common Stock on the date, or the record date, of such event and had thereafter, during the period from the date of such event to and including the Conversion Date, retained such securities receivable by them as aforesaid during such period, all subject to further adjustment as provided herein during such period.

(m) If the Common Stock issuable upon the conversion of the Series B Preferred Stock shall be changed into the same or a different number of shares of any class or classes of stock, whether by capital reorganization, reclassification, exchange, substitution or otherwise, then and in each such event the holder of each such share of Series B Preferred Stock shall have the right thereafter to convert such share into the kind and amount of shares of stock and other securities and property receivable upon such reorganization, reclassification, exchange,

substitution or other change, by holders of the number of shares of Common Stock into which such shares of Series B Preferred Stock might have been converted immediately prior to such reorganization, reclassification, exchange, substitution or other change, all subject to further adjustment as provided herein.

(5) Liquidation Preference.

(a) In the event of any voluntary or involuntary liquidation, dissolution or winding up of the affairs of the Corporation, the holders of shares of Series B Preferred Stock then outstanding shall be entitled to be paid out of the assets of the Corporation available for distribution to its shareholders an amount in cash equal to $1.30 for each share outstanding, plus an amount in cash equal to all declared but unpaid dividends thereon to the date fixed for liquidation, dissolution or winding up before any payment shall be made or any assets distributed to the holders of any Junior Securities. If the assets of the Corporation, or the proceeds thereof, are not sufficient to pay in full the liquidation payments payable to the holders of outstanding shares of the Series B Preferred Stock and any Parity Securities, then the holders of all such shares shall share ratably in such distribution of assets, or the proceeds thereof, in accordance with the amount which would have been payable on such distribution if the amounts to which the holders of outstanding shares of Series B Preferred Stock and the holders of outstanding shares of such Parity Securities are entitled were paid in full. Except as provided in this paragraph (5) (a), holders of Series B Preferred Stock shall not be entitled to any distribution in the event of liquidation, dissolution or winding up of the affairs of the Corporation.

(b) For the purposes of this paragraph (5), neither the voluntary sale, conveyance, exchange or transfer (for cash, shares of stock, securities or other consideration) of all or substantially all the property or assets of the Corporation nor the consolidation or merger of the Corporation with or into one or more other corporations shall be deemed to be a liquidation, dissolution or winding up of the Corporation, voluntary or involuntary unless such voluntary sale, conveyance, exchange or transfer, or merger or consolidation, shall be in connection with a plan of liquidation, dissolution or winding up of the corporation.

(6) Voting. In addition to any voting rights provided by law and to any voting rights of the holders of the Series B Preferred Stock, as or as part of a separate class or series, pursuant to this Certificate or any provision of the Certificate of Incorporation of the Corporation, the holder of each outstanding share of Series B Preferred Stock shall be entitled to vote on any matter voted on by holders of Common Stock, voting together as a single class with the holders of the Common stock, and any other shares entitled to vote in the ordinary course. With respect to any such vote, each share of Series B Preferred Stock shall entitle the holder thereof to cast one vote.

(7) Reports. So long as any of the Series B Preferred Stock is outstanding, the Corporation will furnish the holders thereof with the quarterly and annual financial reports, if any, that the Corporation is required to file with the Securities and Exchange Commission pursuant to Section 13 or section 15(d) of the Securities Exchange Act of 1934.

(8) General Provisions.

(a) The term "person" as used herein means any corporation, partnership, trust, organization, association, other entity or individual.

(b) The term "outstanding," when used with reference to shares of stock, shall mean issued shares, excluding shares held by the Corporation or any subsidiary of the Corporation.

(c) The headings of the paragraphs, subparagraphs, clauses and subclauses of this Certificate of Designations are for convenience of reference only and shall not define, limit or affect any of the provisions hereof.

IN WITNESS WHEREOF, FIBROGEN, Inc. has caused this Amended and Restated Certificate of Designations to be signed by the undersigned this 11th day of July, 1997.

FIBROGEN, INC.

By: /s/ Julian N. Stern
Julian N. Stern
Secretary

CERTIFICATE OF AMENDMENT OF
THE DESIGNATIONS OF
SERIES D REOPRO TRACKING
PREFERRED STOCK OF FIBROGEN, INC.
a Delaware Corporation

It is hereby certified that:

1. The name of this corporation (hereinafter called the "Corporation") is FIBROGEN, INC.

2. The Certificate of Designations of Series D ReoPro Tracking Preferred Stock of the Corporation effective June 9, 1997 is hereby amended by striking out clause (a) of paragraph 4 (Conversion) and by substituting in lieu of said paragraph the following new paragraph:

(a) Each share of Series D Preferred Stock shall hereby automatically convert into 328.5 fully-paid, nonassessable shares of Series C Preferred Stock; provided, however, that on or before December 31, 1997, if there is a final settlement of pending Delaware litigation involving the partnership interests in Centocor Clinical Partners III, L.P. ("CCPIII"), which is more favorable than the settlement proposed by CCP III, Centocor, Inc. and Paine Webber R&D Partners II, L.P., among others as set forth in the June 27, 1997 Notice of Settlement, then the number of shares of Series C Preferred Stock to be received upon conversion shall be equitably increased. No fractional share of Series C Preferred Stock, or scrip representing a fractional share, shall be issuable upon the Conversion of any Series D Preferred Stock. If a certificate or certificates representing more than one share of Series D Preferred Stock shall be surrendered for conversion at one time by the same holder, the number of full shares of Series C Preferred Stock issuable upon conversion thereof shall be computed on the basis of the aggregate number of shares represented by certificates so surrendered. If any fractional interest in a share of Series C Preferred Stock would be deliverable upon the conversion of any shares of Series D Preferred Stock, the Corporation shall pay, in lieu thereof, in cash such portion of the Conversion Price thereof represented by the fractional interest as of the business day immediately preceding the date of such conversion.

3. The Amendment of the Certificate of Designation of Series D ReoPro Tracking Preferred Stock herein certified has been duly adopted in accordance with the provisions of Sections 228 and 242 of the General Corporation Law of the State of Delaware.

Executed the 26th day of November, 1997.

/s/ Julian N. Stern
Julian N. Stern, Secretary

CERTIFICATE OF AMENDMENT OF
THE CERTIFICATE OF INCORPORATION OF
FIBROGEN, INC.,
a Delaware Corporation

It is hereby certified that:

1. The name of the corporation (hereinafter called the "Corporation") is FIBROGEN, INC.

2. The certification of incorporation of the Corporation is hereby amended by striking out the first paragraph of Article FOURTH thereof and by substituting in lieu of said paragraph the following new paragraph:

> "FOURTH. The total number of shares of all classes of capital stock which the corporation shall have the authority to issue is One Hundred Fifty Million (150,000,000) shares, comprised of One Hundred Million (100,000,000) shares of Common Stock with a par value of One Cent ($.01) per share (the "Common Stock") and Fifty Million (50,000,000) shares of Preferred Stock with a par value of One Cent ($.01) per share (the "Preferred Stock")."

3. The amendment of the certificate of incorporation herein certified has been duly adopted in accordance with the provisions of Sections 228 and 242 of the General Corporation Law of the State of Delaware.

Executed the 30th day of March, 1998.

/s/ Julian N. Stern
Julian N. Stern, Secretary

AMENDED CERTIFICATE OF DESIGNATION
OF
SERIES C CONVERTIBLE PREFERRED STOCK
OF
FIBROGEN, INC.

It is hereby certified that:

1. The name of the corporation (hereinafter called the "Corporation") is FIBROGEN, Inc.

2. The Certificate of Designation of Series C Convertible Preferred Stock of the Corporation filed with the Delaware Secretary of State effective June 9, 1997 is hereby amended by changing the name of Series C Convertible Preferred Stock to Royalty Acquisition Preferred Stock.

FIBROGEN, INC., a Delaware corporation (the **"Corporation"**), pursuant to the provisions ions of Section 151 of the General Corporation Law of the State of Delaware, does hereby make this Certificate of Designations and does hereby state and certify that, pursuant to the authority expressly vested in the Board of Directors of the Corporation by the Certificate of Incorporation of the Corporation, the Board of Directors has duly adopted the following resolutions:

RESOLVED, that, pursuant to Article FOURTH of the Certificate of Incorporation, as amended, which authorizes 50,000,000 shares of preferred stock, $.01 par value (**"Preferred Stock"**), the Board of Directors hereby fixes the powers, designations, preferences and relative, participating, optional and other rights, and the qualifications, limitations and restrictions, of a series of Preferred Stock.

RESOLVED, that each share of Royalty Acquisition Preferred Stock shall rank equally in all respects and shall be subject to the following provisions:

(1) Number and Designation. 8,000,000 shares of the Preferred Stock of the Corporation shall be designated as Royalty Acquisition Preferred Stock ("**Royalty Acquisition Preferred Stock**").

(2) Rank. The Royalty Acquisition Preferred Stock shall, with respect to rights on liquidation, dissolution and winding up, rank prior to all classes of the Corporation's common stock, $.01 par value ("**Common Stock**"). The Royalty Acquisition Preferred Stock shall, with respect to rights on liquidation, dissolution and winding up, rank junior to the Series A Convertible Preferred Stock ("**Series A Preferred Stock**") and the Series B Convertible Preferred Stock ("**Series B Preferred Stock**") and the Series C Convertible Preferred Stock ("**Series C Preferred Stock**"). All equity securities of the Corporation to which the Royalty Acquisition Preferred Stock ranks prior (whether with respect to liquidation,

dissolution, winding up or otherwise), including the Common Stock, are collectively referred to herein as the "**Junior Securities**." All equity securities of the Corporation with which the Royalty Acquisition Preferred Stock ranks on a parity (whether with respect to liquidation, dissolution, winding up or otherwise), are collectively referred to herein as the "**Parity Securities**." All equity securities of the Corporation to which the Royalty Acquisition Preferred Stock ranks junior (whether with respect to liquidation, dissolution, winding up or otherwise), are collectively referred to herein as the "**Senior Securities**". The respective definitions of Junior Securities, Parity Securities and Senior Securities shall also include any rights, options or warrants exercisable for any of the Junior Securities, Parity Securities and Senior Securities, as the case may be. The Royalty Acquisition Preferred Stock shall be subject to the creation of Junior Securities, Parity Securities and Senior Securities.

(3) Dividends. The holders of shares of Royalty Acquisition Preferred Stock shall be entitled to receive, when, as and if declared by the Board of Directors, out of funds legally available for the payment of dividends, to the extent as, on the same basis as, at the same rate as, and contemporaneously with, cash dividends when, as and if declared by the Board of Directors with respect to shares of any Common Stock. Such dividends shall be paid to the holders of record at the close of business on the record date specified by the Board of Directors of the Corporation at the time such dividend is declared, provided, however, that such record date shall not be more than 60 days after or less than 10 days prior to the applicable dividend payment date.

(4) Conversion.

(a) Each share of Royalty Acquisition Preferred Stock shall be convertible, at the option of the holder thereof except as otherwise provided in paragraph (4)(b) below, at any time after the date of issuance of such share, at the office of the Corporation or any transfer agent for such stock, into such number of fully paid and non-assessable shares (calculated as to each conversion to the nearest 1/100th of a share) of Common Stock as is determined by dividing $1.60 by the Conversion Price (as defined below) applicable to such share, determined as hereinafter provided, in effect on the date the certificate is surrendered for conversion. The price at which shares of Common Stock shall be deliverable upon conversion of shares of Royalty Acquisition Preferred Stock (the "**Conversion Price**") shall initially be $1.60 per share of Common Stock. Such initial Conversion Price shall be adjusted as hereinafter provided.

(b) Notwithstanding anything to the contrary herein, each outstanding share of Royalty Acquisition Preferred stock shall automatically convert upon a public offering of Common Stock at a price of at least $2.00 per share if the total aggregate proceeds to the Corporation before underwriting commissions and expenses are at least $10,000,000.

(c) Before any holder of Royalty Acquisition Preferred Stock shall be entitled to receive a certificate or certificates for shares of Common Stock upon conversion, such holder shall surrender the certificate or certificates for the holder's shares of Royalty Acquisition Preferred Stock, duly endorsed, at the office of the Corporation or of any transfer agent for such stock, and, unless such conversion is automatic pursuant to clause (b) above, shall give written notice to the Corporation at such office that such holder elects to convert the same and shall state therein the name or names in which such holder wishes the certificate or certificates for shares of Common Stock to be issued. The Corporation shall, as soon as practicable thereafter, issue and deliver at such office to such holder of Royalty Acquisition Preferred Stock, a certificate or certificates for the number of shares of Common Stock to which such holder shall be entitled as aforesaid. Such conversion shall be deemed to have been made (i) in the case such conversion is

automatic pursuant to clause (b) above, upon the effectiveness of the registration statement relating to such offering, and (ii) in all other cases, immediately prior to the close of business on the date of surrender of the shares of Royalty Acquisition Preferred Stock to be converted (in either case, the "**Conversion Date**"), and the person or persons entitled to receive the shares of Common Stock issuable upon such conversion shall be treated for all purposes as the record holder or record holders of such shares of Common Stock on such date.

(d) All shares of Royalty Acquisition Preferred Stock which have been converted as herein provided shall no longer be deemed to be outstanding and all rights with respect to such shares, including the rights, if any to receive notices and to vote, shall forthwith cease and terminate, except only the right of the holders thereof, subject to the provisions of clause (c) of this paragraph (4), to receive shares of Common Stock in exchange therefor.

(e) In case:

(i) the Corporation shall declare a dividend (or any other distribution) on Common Stock payable otherwise than in cash out of its retained earnings; or

(ii) the Corporation shall authorize the granting to the holders of Common Stock of rights or warrants to subscribe for or purchase any shares of capital stock of any class or of any other rights; or

(iii) of any reclassification of the Common Stock (other than a subdivision, split or combination of its outstanding shares of Common Stock), or of any consolidation or merger to which the Corporation is a party and for which approval of any stockholders of the Corporation is required, or of the sale or transfer of all or substantially all of the assets of the Corporation; or

(iv) of the voluntary or involuntary dissolution, liquidation or winding up of the Corporation; then the Corporation shall cause to be mailed to each holder of shares of Royalty Acquisition Preferred Stock at its address as shown on the books of the Corporation, at least 30 days (or 20 days in any case specified in clause (i) or (ii) above) prior to the applicable record or effective date hereinafter specified, a notice stating (x) the date on which a record is to be taken for the purpose of such dividend, distribution, rights or warrants, or, if a record is not to be taken, the date as of which the holders of Common Stock of record to be entitled to such dividend, distribution, rights or warrants are to be determined, or (y) the date on which such reclassification, liquidation or winding up is expected to become effective, and the date as of which it is expected that holders of Common Stock of record shall be entitled to exchange their shares of Common Stock for securities, cash or other property deliverable upon, such reclassification, consolidation, merger, sale, transfer, dissolution, liquidation or winding up.

(f) For the purposes of this paragraph (4), the term "Common Stock" shall mean (i) the class of stock designated as the Common Stock of the Corporation on the date of this Certificate of Designations, and (ii) any other class of common stock, including any class resulting from successive changes or reclassifications of such Common Stock consisting solely of changes in par value or from no par value to par value or from par value to no par value.

(g) No fractional share of Common Stock, or scrip representing a fractional share, shall be issuable upon the conversion of any Royalty Acquisition Preferred Stock. If a certificate or certificates representing more than one share of Royalty Acquisition Preferred Stock shall be surrendered for conversion at one time by the same holder, the number of full shares of Common Stock issuable upon conversion thereof shall be computed on the basis

of the aggregate number of shares represented by certificates so surrendered. If any fractional interest in a share of Common Stock would be deliverable upon the conversion of any shares of Royalty Acquisition Preferred Stock, the Corporation shall pay, in lieu thereof, in cash the Conversion Price thereof as of the business day immediately preceding the date of such conversion.

(h) Such number of shares of Common Stock as may from time to time be required for such purpose shall be reserved for issuance upon conversion of outstanding shares of Royalty Acquisition Preferred Stock.

(i) If the Corporation shall at any time or from time to time effect a subdivision or stock split of the outstanding Common Stock, the Conversion Price of the Royalty Acquisition Preferred Stock than in effect immediately before that subdivision or stock split shall be proportionately decreased If the Corporation shall at any time or film time to time combine the outstanding shares of Common Stock, the Conversion Price of the Royalty Acquisition Preferred Stock then in effect immediately before the combination shall be proportionately increased. Any adjustment under this paragraph shall become effective at the close of business on the date the subdivision, stock split or combination, as the case may be, becomes effective.

(j) In the event the Corporation at any time or from time to time shall make or issue, or fix a record date for the determination of holders of Common Stock entitled to receive, a dividend or other distribution payable in additional shares of Common Stock, then and in each such event the Conversion Price of the Royalty Acquisition Preferred Stock then in effect shall be decreased as of the time of such issuance or, in the event such a record date shall have been fixed, as of the close of business on such record date, by multiplying the Conversion Price of the Royalty Acquisition Preferred Stock then in effect by a fraction:

(1) the denominator of which shall be the sum of the total number of shares of Common Stock issued and outstanding immediately prior to the time of such issuance or the close of business on such record date, plus the number of shares of Common Stock issuable in payment of such dividend or distribution, and

(2) the numerator of which shall be the total number of shares of Common Stock issued and outstanding immediately prior to the time of such issuance or the close of business on such record date;

provided, however, if such record date shall have been fixed and such dividend is not fully paid or if such distribution is not fully made on the date fixed therefor, the Conversion Price of Royalty Acquisition Preferred Stock shall be recomputed accordingly as of the close of business on such record date and thereafter the Conversion Price of Royalty Acquisition Preferred Stock shall be adjusted pursuant to this paragraph as of the time of actual payment or issuance of such dividends or distributions.

(k) In the event the Corporation at any time or from time to time shall make or issue, or fix a record date for the determination of holders of Common Stock entitled to receive, a dividend or other distribution payable in securities of the Corporation other than shares of Common Stock, then and in each such event provision shall be made so that the holders of Royalty Acquisition Preferred Stock shall receive upon conversion thereof in addition to the number of shares of Common Stock receivable thereupon, the amount of such other securities of the Corporation that they would have received had their Royalty Acquisition Preferred Stock been converted into Common Stock on the date, or the record date, of such event and had thereafter, during the period from the date of such event to and including the Conversion Date,

retained such securities receivable by them as aforesaid during such period, all subject to further adjustment as provided herein during such period.

(l) If the Common Stock issuable upon the conversion of the Royalty Acquisition Preferred Stock shall be changed into the same or a different number of shares of any class or classes of stock, whether by capital reorganization, reclassification, exchange, substitution or otherwise, then and in each such event the holder of each such share of Royalty Acquisition Preferred Stock shall have the right thereafter to convert such share into the kind and amount of shares of stock and other securities and property receivable upon such reorganization, reclassification, exchange, substitution or other change, by holders of the number of shares of Common Stock into which such shares of Royalty Acquisition Preferred Stock might have been converted immediately prior to such reorganization, reclassification, exchange, substitution or other change, all subject to further adjustment as provided herein.

(5) Liquidation, Preference.

(a) In the event of any voluntary or involuntary liquidation, dissolution or winding up of the affairs of the Corporation, the holders of shares of Royalty Acquisition Preferred Stock then outstanding shall be entitled to be paid out of the assets of the Corporation available for distribution to its shareholders an amount in cash equal to $1.60 for each share outstanding, plus an amount in cash equal to all declared but unpaid dividends thereon to the date fixed for liquidation, dissolution or winding up before any payment shall be made or any assets distributed to the holders of any Junior Securities. If the assets of the Corporation, or the proceeds thereof, are not sufficient to pay in full the liquidation payments payable to the holders of outstanding shares of the Royalty Acquisition Preferred Stock and any Parity Securities, then the holders of all such shares shall share ratably in such distribution of asses, or the proceeds thereof, in accordance with the amount which would have been payable on such distribution if the amounts to which the holders of outstanding shares of Royalty Acquisition Preferred Stock and the holders of outstanding shares of such Parity Securities are entitled were paid in full. Except as provided in this paragraph (5)(a), holders of Royalty Acquisition Preferred Stock shall not be entitled to any distribution in the event of liquidation, dissolution or winding up of the affairs of the Corporation.

(b) For the purposes of this paragraph (5), neither the voluntary sale, conveyance, exchange or transfer (for cash, shares of stock, securities or other consideration) of all or substantially all the property or assets of the Corporation nor the consolidation or merger of the Corporation with or into one or more other corporations shall be deemed to be a liquidation, dissolution or winding up of the Corporation, voluntary or involuntary unless such voluntary sale, conveyance, exchange or transfer, or merger or consolidation, shall be in connection with a plan of liquidation, dissolution or winding up of the Corporation.

(6) Voting. In addition to any voting rights provided by law and to any voting rights of the holders of the Royalty Acquisition Preferred Stock, as or as part of a separate class or series, pursuant to this Certificate or any provision of the Certificate of Incorporation of the Corporation, the holder of each outstanding share of Royalty Acquisition Preferred Stock shall be entitled to vote on any matter voted on by holders of Common Stock, voting together as a single class with the holders of the Common Stock, and any other shares entitled to vote in the ordinary course. With respect to any such vote, each share of Royalty Acquisition Preferred Stock shall entitle the holder thereof to cast one vote.

(7) Reports. So long as any of the Royalty Acquisition Preferred Stock is outstanding, the Corporation will furnish the holders thereof with the quarterly and annual

financial reports, if any, that the Corporation is required to file with the Securities and Exchange Commission pursuant to Section 13 or Section 15(d) of the Securities Exchange Act of 1934.

(8) General Provisions.

(a) The term "person" as used herein means any corporation, partnership, trust, organization, association, other entity or individual.

(b) The term "outstanding," when used with reference to shares of stock, shall mean issued shares, excluding shares held by the Corporation or any subsidiary of the Corporation.

(c) The headings of the paragraphs, subparagraphs, clauses and subclauses of this Certificate of Designations are for convenience of reference only and shall not define, limit or affect any of the provisions hereof"

WITNESS WHEREOF, FIBROGEN, Inc. has caused this Amended Certificate of Designations to be signed by the undersigned this 30th day of March, 1998.

FIBROGEN, INC.

By: /s/ Julian N. Stern
Julian N. Stern, Secretary

CERTIFICATE OF DESIGNATIONS
OF
SERIES C CONVERTIBLE PREFERRED STOCK
OF
FIBROGEN, INC.

FIBROGEN, INC., a Delaware corporation (the "**Corporation**"), pursuant to the provisions of Section 151 of the General Corporation Law of the State of Delaware, does hereby make this Certificate of Designations and does hereby state and certify that, pursuant to the authority expressly vested in the Board of Directors of the Corporation by the Certificate of Incorporation of the Corporation, the Board of Directors has duly adopted the following resolutions:

RESOLVED, that, pursuant to Article FOURTH of the Certificate of Incorporation, which authorizes 50,000,000 shares of preferred stock, $.01 par value ("**Preferred Stock**"), the Board of Directors hereby fixes the powers, designations-, preferences and relative, participating, optional and other rights, and the qualifications, limitations and restrictions, of a series of Preferred Stock.

RESOLVED, that each share of such series of Preferred Stock shall rank equally in all respects and shall be subject to the following provisions:

(1) Number and Designation. 5,000,000 shares of the Preferred Stock of the Corporation shall be designated as Series C Convertible Preferred Stock ("**Series C Preferred Stock**").

(2) Rank. The Series C Preferred Stock shall, with respect to rights on liquidation, dissolution and winding up, rank prior to all classes of the Corporation's common stock, $.01 par value ("**Common Stock**") and the Royalty Acquisition Preferred Stock. The Series C Preferred Stock shall, with respect to rights on liquidation, dissolution and winding up, rank equally with the Series A Convertible Preferred Stock ("**Series A Preferred Stock**") and the Series B Convertible Preferred Stock ("**Series B Preferred Stock**"). All equity securities of the Corporation to which the Series C Preferred Stock ranks prior (whether with respect to liquidation, dissolution, winding up or otherwise), including the Common Stock, are collectively referred to herein as the "**Junior Securities**." All equity securities of the Corporation with which the Series C Preferred Stock ranks on a parity (whether with respect to liquidation, dissolution, winding up or otherwise), including Series A Preferred Stock and the Series B Convertible Preferred Stock, are collectively referred to herein as the "**Parity Securities**." All equity securities of the Corporation to which the Series C Preferred Stock ranks junior (whether with respect to liquidation, dissolution, winding up or otherwise), are collectively referred to herein as the "**Senior Securities**". The respective definitions of Junior Securities, Parity Securities and Senior Securities shall also include any rights, options or warrants exercisable for any of the Junior Securities, Parity Securities and Senior Securities, as the case may be. The Series C Preferred Stock shall be subject to the creation of Junior Securities, Parity Securities and Senior Securities.

(3) Dividends. The holders of shares of Series C Preferred Stock shall be entitled to receive, when, as and if declared by the Board of Directors, out of funds legally available for the payment of dividends, to the extent as, on the same basis as, at the same rate as,

and contemporaneously with, cash dividends when, as and if declared by the Board of Directors with respect to shares of any Common Stock, the Royalty Acquisition Preferred Stock, or Parity Securities. Such dividends shall be paid to the holders of record at the close of business on the record date specified by the Board of Directors of the Corporation at the time such dividend is declared, provided, however, that such record date shall not be more than 60 days or less than 10 days prior to the applicable dividend payment date.

(4) Conversion.

(a) Each share of Series C Preferred Stock shall be convertible, at the option of the holder thereof except as otherwise provided in paragraph (4)(b) below, at any time after the date of issuance of such share, at the office of the Corporation or any transfer agent for such stock, into such number of fully paid and non-assessable shares (calculated as to each conversion to the nearest 1/100th of a share) of Common Stock as is determined by dividing $2.00 by the Conversion Price (as defined below) applicable to such share, determined as hereinafter provided, in effect on the date the certificate is surrendered for conversion. The price at which shares of Common Stock shall be deliverable upon conversion of shares of Series C Preferred Stock (the "**Conversion Price**") shall initially be $2.00 per share of Common Stock. Such initial Conversion Price shall be adjusted as hereinafter provided.

(b) Notwithstanding anything to the contrary herein, each outstanding share of Series C Preferred stock shall automatically convert upon a public offering of Common Stock at a price of at least $2.75 per share if the total aggregate proceeds to the Corporation before underwriting commissions and expenses are at least $10,000,000.

(c) Before any holder of Series C Preferred Stock shall be entitled to receive a certificate or certificates for shares of Common Stock upon conversion, such holder shall surrender the certificate or certificates for the holder's shares of Series C Preferred Stock, duly endorsed, at the office of the Corporation or of any transfer agent for such stock, and, unless such conversion is automatic pursuant to clause (b) above, shall give written notice to the Corporation at such office that such holder elects to convert the same and shall state therein the name or names in which such holder wishes the certificate or certificates for shares of Common Stock to be issued. The Corporation shall, as soon as practicable thereafter, issue and deliver at such office to such holder of Series C Preferred Stock, a certificate or certificates for the number of shares of Common Stock to which such holder shall be entitled as aforesaid. Such conversion shall be deemed to have been made (i) in the case such conversion is automatic pursuant to clause (b) above, upon the effectiveness of the registration statement relating to such offering, and (ii) in all other cases, immediately prior to the close of business on the date of surrender of the shares of Series C Preferred Stock to be converted (in either case, the "**Conversion Date**"), and the person or persons entitled to receive the shares of Common Stock issuable upon such conversion shall be treated for all purposes as the record holder or record holders of such shares of Common Stock on such date.

(d) All shares of Series C Preferred Stock which have been converted as herein provided shall no longer be deemed to be outstanding and all rights with respect to such shares, including the rights, if any, to receive notices and to vote, shall forthwith cease and terminate, except only the right of the holders thereof, subject to the provisions of clause (c) of this paragraph (4), to receive shares of Common Stock in exchange therefor.

(e) (i) For the purposes of this clause (e), the following definitions shall apply:

(A) “Options” shall mean rights, options or warrants to subscribe for, purchase or otherwise acquire either Additional Shares of Common Stock or Convertible Securities (as defined below);

(B) “Original Issue Date” shall mean the date on which a share of Series C Preferred Stock was first issued;

(C) “Convertible Securities” shall mean any evidences of indebtedness, shares (other than Common Stock) or other securities convertible into or exchangeable for Additional Shares of Common Stock; and

(D) “Additional Shares of Common Stock” shall mean all shares of Common Stock issued (or, pursuant to clause (e)(iii) hereof, deemed to be issued) by the Corporation after the Original Issue Date, other than shares of Common Stock issued or issuable:

(I) to officers, directors or employees of; or consultants to, the Corporation pursuant to stock option or stock purchase plans or agreements on terms approved by the Board of Directors of the Corporation;

(II) as a dividend or distribution on shares of the Series C Preferred Stock; or

(III) for which adjustment of the Conversion Price is made pursuant to clause (j) or (k) of this paragraph (4).

(ii) Any provision herein to the contrary notwithstanding, no adjustment in the Conversion Price shall be made in respect of the issuance of Additional Shares of Common Stock unless the consideration per share (determined pursuant to subclause (e)(v) hereof) for an Additional Share of Common Stock issued or deemed to be issued by the Corporation is less than the Conversion Price in effect on the date of, and immediately prior to, such issue.

(iii) In the event the Corporation at any time or from time to time after the Original Issue Date shall issue any Options or Convertible Securities or shall fix a record date for the determination of holders of any class of securities then entitled to receive any such Options or Convertible Securities, then the maximum number of shares (as set forth in the instrument relating thereto without regard to any provisions contained therein designed to protect against dilution) of Common Stock issuable upon the exercise of such Options or, in the case Of Convertible Securities and Options therefor, the conversion or exchange of such Convertible Securities, shall be deemed to be Additional Shares of Common Stock issued as of the time of such issue or, in case such a record date shall have been fixed, as of the close of business on such record date; provided, that in any such case in which Additional Shares of Common Stock are deemed to be issued:

(1) no further adjustments in the Conversion Price shall be made upon the subsequent issue of Convertible Securities or shares of Common Stock upon the exercise of such Options or conversion or exchange of such Convertible Securities;

(2) if such Options or Convertible Securities by their terms provides with the passage of time or otherwise, for any increase or decrease in the consideration payable to the Corporation, or decrease or increase in the number of shares of

Common Stock issuable, upon the exercise, conversion or exchange thereof, the Conversion Price computed upon the original issue thereof (or upon the occurrence of a record date with respect thereto), and any subsequent adjustments based thereon, shall, upon any such increase or decrease becoming effective, be recomputed to reflect such increase or decrease insofar as it affects such Options or the rights of conversion or exchange under such Convertible Securities (provided, however, that no such adjustment of the Conversion Price shall affect Common Stock previously issued upon conversion of the Series C Preferred Stock);

(3) upon the expiration of any such Options or any rights of conversion or exchange under such Convertible Securities which shall not have been exercised, the Conversion Price computed upon the original issue thereof (or upon the occurrence of a record date with respect thereto), and any subsequent adjustments based thereon, shall, upon such expiration, be recomputed as if

(A) in the case of Convertible Securities or Options for Common Stock the only Additional Shares of Common Stock issued were the shares of Common Stock, if any, actually issued upon this exercise of such Options or the conversion or exchange of such Convertible Securities and the consideration received therefor was the consideration actually received by the Corporation for the issue of all such Options, whether or not exercised, plus the consideration actually received by the Corporation upon such exercise, or for the issue of all such Convertible Securities which were actually converted or exchanged, plus the additional consideration, if any, actually received by the Corporation upon such conversion or exchange; and

(B) in the case of Options for Convertible Securities only the Convertible Securities, if any, actually issued upon the exercise thereof were issued at the time of issue of such Options, and the consideration received by the Corporation for the Additional Shares of Common Stock deemed to have been then issued was the consideration actually received by the Corporation for the issue of all such Options, whether or not exercised, plus the consideration deemed to have been received by the Corporation upon the issue of the Convertible Securities with respect to which such Options were actually exercised;

(4) no readjustment pursuant to clause (2) or (3) above shall have the effect of increasing the Conversion Price to an amount which exceeds the lower of (a) the Conversion Price on the original adjustment date (before adjustment) and (b) the Conversion Price that would have resulted from any issuance of Additional Shares of Common Stock between the original adjustment date and such readjustment date;

(5) in the case of any Options which expire by their terms not more than 30 days after the date of issue thereof, no adjustments of the Conversion Price shall be made until the expiration or exercise of all such Options, whereupon such adjustment shall be made in the same manner provided in clause (3) above.

(iv) In the event this Corporation, at any time after the Original Issue Date, shall issue Additional Shares of Common Stock (including Additional Shares of Common Stock deemed to be issued pursuant to subclause (e)(iii) hereof) without consideration or for a consideration per share less than the Conversion Price in effect on the date of and immediately prior to such issue, then and in such event, the Conversion Price shall be reduced, concurrently with such issue, to a price (calculated to the nearest cent) determined by multiplying the Conversion Price by a fraction, the numerator of which shall be the number of shares of Common Stock outstanding immediately prior to such issue plus the number of shares of Common Stock which the aggregate consideration received by the Corporation for the total

number of Additional Shares of Common Stock so issued would purchase at such Conversion Price in effect immediately prior to such issuance, and the denominator of which shall be the number of shares of Common Stock outstanding immediately prior to such issue plus the number of such Additional Shares of Common Stock so issued. For the purpose of the above calculation, the number of shares of Common Stock outstanding immediately prior to such issue shall be calculated as if (i) all outstanding shares of Preferred Stock and all other outstanding evidences of indebtedness, shares or other securities convertible into or exchangeable for Common Stock had been fully converted into or exchanged for shares of Common Stock immediately prior to such issuance, and (ii) all outstanding rights, options or warrants to subscribe for, purchase or otherwise acquire Common Stock (or to acquire evidences of indebtedness, shares or other securities convertible into or exchangeable for Common Stock) had been fully exercised (and had been fully converted and exchanged if, upon such exercise, evidences of indebtedness, shares or other securities convertible into or exchangeable for Common Stock would be issued) immediately prior to such issuance, but not including in such calculation any additional shares of Common Stock issuable with respect to shares of Preferred Stock, other evidences of indebtedness, shares or other securities convertible into or exchangeable for Common Stock or rights, options or warrants to subscribe for, purchase or otherwise acquire Common Stock solely as a result of the adjustment of the respective Conversion Prices (or other conversion ratios or exercise prices) resulting from the issuance of Additional Shares of Common Stock causing such adjustment.

(v) For purposes of this clause (e), the consideration received by the Corporation for the issue of any Additional Shares of Common Stock shall be computed as follows;

(I) If such consideration consists of cash and property, such consideration shall:

(A) insofar an it consists of cash, be computed at the aggregate amount of cash received by the Corporation excluding amounts paid or payable for accrued interest or accrued dividends;

(B) insofar as it consists of property other than cash, be computed at the fair value thereof at the time of such issue, as determined in good faith by the Board of Directors; and

(C) in the event Additional Shares of Common Stock are issued together with other shares or securities or other assets of the Corporation for consideration which covers both, be the proportion of such consideration so received, computed as provided in clauses (A) and (B) above, as determined in good faith by the Board of Directors.

(2) If such consideration consists of Options and Convertible Securities, the consideration per share received by the Corporation for Additional Shares of Common Stock deemed to have been issued pursuant to subclause (e)(iii), relating to Options and Convertible Securities, shall be determined by dividing:

(A) the total amount, if any, received or receivable by the Corporation as consideration for the issue of such Options or Convertible Securities, plus the minimum aggregate amount of additional consideration (as set forth in the instruments relating thereto, without regard to any provision contained therein designed to protect against dilution) payable to the Corporation upon the exercise of such Options or the conversion or exchange of such Convertible Securities, or in the case of Options for Convertible

Securities, the exercise of such Options for Convertible Securities and the conversion or exchange of such Convertible Securities, by

(B) the maximum number of shares of Common Stock (as set forth in the instruments relating thereto, without regard to any provision contained therein designed to protect against the dilution) issuable upon the exercise of such Options or conversion or exchange of such Convertible Securities.

(f) In case:

(i) the Corporation shall declare a dividend (or any other distribution) on Common Stock payable otherwise than in cash out of its retained earnings; or

(ii) the Corporation shall authorize the granting to the holders of Common Stock of rights or warrants to subscribe for or purchase any shares of capital stock of any class or of any other rights; or

(iii) of any reclassification of the Common Stock (other than a subdivision, split or combination of its outstanding shares of Common Stock), or of any consolidation or merger to which the Corporation is a party and for which approval of any stockholders of the Corporation is required, or of the sale or transfer of all or substantially all of the assets of the Corporation; or

(iv) of the voluntary or involuntary dissolution, liquidation or winding up of the Corporation;

then the Corporation shall cause to be mailed to each holder of shares of Series C Preferred Stock at its address as shown on the books of the Corporation, at least 30 days (or 20 days in any case specified in clause (i) or (ii) above) prior to the applicable record or effective date hereinafter specified, a notice stating (x) the date on which a record is to be taken for the purpose of such dividend, distribution, rights or warrants, or, if a record is not to be taken, the date as of which the holders of Common Stock of record to be entitled to such dividend, distribution, rights or warrants are to be determined, or (y) the date on which such reclassification, liquidation or winding up is expected to become effective, and the date as of which it is expected that holders of Common Stock of record shall be entitled to exchange their shares of Common Stock for securities, cash or other property deliverable upon such reclassification, consolidation, merger, sale, transfer, dissolution, liquidation or winding up.

(g) For the purposes of this paragraph (4), the term “Common Stock” shall mean (i) the class of stock designated as the Common Stock of the Corporation on the date of this Certificate of Designations, and (ii) any other class of common stock, including any class resulting from successive changes or reclassifications of such Common Stock consisting solely of changes in par value or from no par value to par value or from par value to no par value.

(h) No fractional share of Common Stock, or scrip representing a fractional share, shall be issuable upon the conversion of any Series C Preferred Stock. If a certificate or certificates representing more than one share of Series C Preferred Stock shall be surrendered for conversion at one time by the same holder, the number of full shares of Common Stock issuable upon conversion thereof shall be computed on the basis of the aggregate number of shares represented by certificates so surrendered. If any fractional interest in a share of Common Stock would be deliverable upon the conversion of any shares of Series C Preferred Stock, the Corporation shall pay, in lieu thereof, in cash the Conversion Price thereof as of the

business day immediately preceding the date of such conversion.

(i) Such number of shares of Common Stock as may from time to time be required for such purpose shall be reserved for issuance upon conversion of outstanding shares of Series C Preferred Stock.

(j) If the Corporation shall at any time or from time to time effect a subdivision or stock split of the outstanding Common Stock, the Conversion Price of the Series C Preferred Stock then in effect immediately before that subdivision or stock split shall be proportionately decreased. If the Corporation shall at any time or from time to time combine the outstanding shares of Common Stock, the Conversion Price of the Series C Preferred Stock then in effect immediately before the combination shall be proportionately increased. Any adjustment under this paragraph shall become effective at the close of business on the date the subdivision, stock split or combination, as the case may be, becomes effective.

(k) In the event the Corporation at any time or from time to time shall make or issue, or fix a record date for the determination of holders of Common Stock entitled to receive, a dividend or other distribution payable in additional shares of Common Stock, then and in each such event the Conversion Price of the Series C Preferred Stock then in effect shall be decreased as of the time of such issuance or, in the event such a record date shall have been fixed, as of the close of business on such record date, by multiplying the Conversion Price of the Series C Preferred Stock then in effect by a fraction:

(1) the denominator of which shall be the sum of the total number of shares of Common Stock issued and outstanding immediately prior to the time of such issuance or the close of business on such record date, plus the number of shares of Common Stock issuable in payment of such dividend or distribution, and

(2) the numerator of which shall be the total number of shares of Common Stock issued and outstanding immediately prior to the time of such issuance or the close of business on such record date;

provided, however, if such record date shall have been fixed and such dividend is not fully paid or if such distribution is not fully made on the date fixed therefor, the Conversion Price of Series C Preferred Stock shall be recomputed accordingly as of the close of business on such record date and thereafter the Conversion Price of Series C Preferred Stock shall be adjusted pursuant to this paragraph as of the time of actual payment or issuance of such dividends or distributions.

(l) In the event the Corporation at any time or from time to time shall make or issue, or fix a record date for the determination of holders of Common Stock entitled to receive, a dividend or other distribution payable in securities of the Corporation other than shares of Common Stock, then and in each such event provision shall be made so that the holders of Series C Preferred Stock shall receive upon conversion thereof in addition to the number of shares of Common Stock receivable thereupon, the amount of such other securities of the Corporation that they would have received had their Series C Preferred Stock been converted into Common Stock on the date, or the record date, of such event and had thereafter, during the period from the date of such event to and including the Conversion Date, retained such securities receivable by them as aforesaid during such period, all subject to further adjustment as provided herein during such period.

(m) If the Common Stock issuable upon the conversion of the Series C

Preferred Stock shall be changed into the same or a different number of shares of any class or classes of stock, whether by capital reorganization, reclassification, exchange, substitution or otherwise, then and in each such event the holder of each such share of Series C Preferred Stock shall have the right thereafter to convert such share into the kind and amount of shares of stock and other securities and property receivable upon such reorganization, reclassification, exchange, substitution or other change, by holders of the number of shares of Common Stock into which such shares of Series C Preferred Stock might have been converted immediately prior to such reorganization, reclassification, exchange, substitution or other change, all subject to further adjustment as provided herein.

(5) Liquidation Preference.

(a) In the event of any voluntary or involuntary liquidation, dissolution or winding up of the affairs of the Corporation, the holders of shares of Series C Preferred Stock then outstanding shall be entitled to be paid out of the assets of the Corporation available for distribution to its shareholders an amount in cash equal to $2.00 for each share outstanding, plus an amount in cash equal to all declared but unpaid dividends thereon to the date fixed for liquidation, dissolution or winding up before any payment shall be made or any assets distributed to the holders of any Junior Securities. If the assets of the Corporation, or the proceeds thereof, are not sufficient to pay in full the liquidation payments payable to the holders of outstanding shares of the Series C Preferred Stock and any Parity Securities, then the holders of all such shares shall share ratably in such distribution of assets, or the proceeds thereof, in accordance with the amount which would have been payable on such distribution if the amounts to which the holders of outstanding shares of Series C Preferred Stock and the holders of outstanding shares of such Parity Securities are entitled were paid in M. Except as provided in this paragraph (5)(a), holders of Series C Preferred Stock shall not be entitled to any distribution in the event of liquidation, dissolution or winding up of the affairs of the Corporation.

(b) For the purposes of this paragraph (5), neither the voluntary sale, conveyance, exchange or transfer (for cask shares of stock, securities or other consideration) of all or substantially all the property or assets of the Corporation nor the consolidation or merger of the Corporation with or into one or more other corporations shall be deemed to be a liquidation, dissolution or winding up of the Corporation, voluntary or involuntary unless such voluntary sale, conveyance, exchange or transfer, or merger or consolidation, shall be in connection with a plan of liquidation, dissolution or winding up of the Corporation.

(6) Voting. In addition to any voting rights provided by law and to any voting rights of the holders of the Series C Preferred Stock, as or as part of a separate class or series, pursuant to this Certificate or any provision of the Certificate of Incorporation of the Corporation, the holder of each outstanding share of Series C Preferred Stock shall be entitled to vote on any matter voted on by holders of Common Stock, voting together as a single class with the holders of the Common Stock, and any other shares entitled to vote in the ordinary course. With respect to any such vote, each share of Series C Preferred Stock shall entitle the holder thereof to cast one vote.

(7) Reports. So long as any of the Series C Preferred Stock is outstanding, the Corporation will furnish the holders thereof with the quarterly and annual financial reports, if any, that the Corporation is required to file with the Securities and Exchange Commission pursuant to Section 13 or Section 15(d) of the Securities Exchange Act of 1934.

(8) General Provisions.

(a) The term "**person**" as used herein means any corporation, partnership, trust, organization, association, other entity or individual.

(b) The term "**outstanding**," when used with reference to shares of stock, shall mean issued shares, excluding shares held by the Corporation or any subsidiary of the Corporation.

(c) The headings of the paragraphs, subparagraphs, clauses and subclauses of this Certificate of Designations are for convenience of reference only and shall not define, limit or affect any of the provisions hereof.

IN WITNESS WHEREOF, FIBROGEN, Inc. has caused this Certificate of Designations to be signed and attested by the undersigned this 30th day of March, 1998.

FIBROGEN, INC.

By: /s/ Julian N. Stern
JULIAN N. STERN, Secretary

CERTIFICATE OF DESIGNATIONS. OF
SERIES D CONVERTIBLE PREFERRED STOCK
OF
FIBROGEN, INC.

FIBROGEN, INC., a Delaware corporation (the "**Corporation**"), pursuant to the provisions of Section 151 of the General Corporation Law of the State of Delaware, does hereby make this Certificate of Designations and does hereby state and certify that, pursuant to the authority expressly vested in the Board of Directors of the Corporation by the Certificate of Incorporation of the Corporation, the Board of Directors has duly adopted the following resolutions:

RESOLVED, that, pursuant to Article FOURTH of the Certificate of Incorporation, which authorizes 50,000,000 shares of preferred stock, $.01 par value ("**Preferred Stock**"), the Board of Directors hereby fixes the powers, designations, preferences and relative, participating, optional and other rights, and the qualifications, limitations and restrictions, of a series of Preferred Stock.

RESOLVED, that each share of such series of Preferred Stock shall rank equally in all respects and shall be subject to the following provisions:

(1) Number and Designation. 909,091 shares of the Preferred Stock of the Corporation shall be designated as Series D Convertible Preferred Stock ("**Series D Preferred Stock**").

(2) Rank. The Series D Preferred Stock shall, with respect to rights on liquidation, dissolution and winding up, rank prior to all classes of the Corporation's common stock, $.01 par value ("**Common Stock**") and the Royalty Acquisition Preferred Stock. The Series D Preferred Stock shall, with respect to rights on liquidation, dissolution and winding up, rank equally with the Series A Convertible Preferred Stock ("**Series A Preferred Stock**"), the Series B Convertible Preferred Stock ("**Series B Preferred Stock**") and the Series C Convertible Preferred Stock ("**Series C Preferred Stock**"), All equity securities of the Corporation to which the Series D Preferred Stock ranks prior (whether with respect to liquidation, dissolution, winding tip or otherwise), including the Common Stock, are collectively referred to herein as the "**Junior Securities**." All equity securities of the Corporation with which the Series D Preferred Stock ranks on a parity (whether with respect to liquidation, dissolution, winding up or otherwise), including Series A Preferred Stock, the Series B Convertible Preferred Stock and the Series C Preferred Stock, are collectively referred to herein as the "Parity Securities." All equity securities of the Corporation to which the Series D Preferred Stock ranks junior (whether with respect to liquidation, dissolution, winding up or

otherwise), are collectively referred to herein as the "**Senior Securities**". The respective definitions of Junior Securities, Parity Securities and Senior Securities shall also include any rights, options or warrants exercisable for any of the Junior Securities, Parity Securities and Senior Securities, as the case may be. The Series D Preferred Stock shall be subject to the creation of Junior Securities, Parity Securities and Senior Securities.

(3) Dividends. The holders of shares of Series D Preferred Stock shall be entitled to receive, when, as and if declared by the Board of Directors, out of funds legally available for the payment of dividends, to the extent as, on the same basis as, at the same rate as, and contemporaneously with, cash dividends when, as and if declared by the Board of Directors with respect to shares of any Common Stock, the Royalty Acquisition Preferred Stock, or Parity Securities. Such dividends shall be paid to the holders of record at the close of business on the record date specified by the Board of Directors of the Corporation at the time such dividend is declared, provided, however, that such record date shall not be more than 60 days or less than 10 days prior to the applicable dividend payment date.

(4) Conversion.

(a) Each share of Series D Preferred Stock shall be convertible, at the option of the holder thereof except as otherwise provided in paragraph (4) (b) below, at any time after the date of issuance of such share, at the office of the Corporation or any transfer agent for such stock, into such number of fully paid and non assessable shares (calculated as to each conversion to the nearest 1/100th of a share) of Common Stock as is determined by dividing $5.50 by the Conversion Price (as defined below) applicable to such share, determined as hereinafter provided, in effect on the date the certificate is surrendered for conversion. The price at which shares of Common Stock shall be deliverable upon conversion of shares of Series D Preferred Stock (the "**Conversion Price**") shall initially be $5.50 per share of Common Stock. Such initial Conversion Price shall be adjusted as hereinafter provided.

(b) Notwithstanding anything to the contrary herein, each outstanding share of Series D Preferred stock shall automatically convert upon a public offering of Common Stock if the total aggregate proceeds to the Corporation before underwriting commissions and expenses are at least $10,000,000.

(c) Before any holder of Series D Preferred Stock shall be entitled to receive a certificate or certificates for shares of Common Stock upon conversion, such holder shall surrender the certificate or certificates for the holder's shares of Series D Preferred Stock, duly endorsed, at the office of the Corporation or of any transfer agent for such stock, and, unless such conversion is automatic pursuant to clause (h) above, shall give written notice to the Corporation at such office that such holder elects to convert the same and shall state therein the name or names in which such

holder wishes the certificate or certificates for shares of Common Stock to be issued. The Corporation shall, as soon as practicable thereafter, issue and deliver at such office to such holder of Series D Preferred Stock, a certificate or certificates for the number of shares of Common Stock to which such holder shall be entitled as aforesaid. Such conversion shall be deemed to have been made (i) in the case such conversion is automatic pursuant to clause (b) above, upon the effectiveness of the registration statement relating to such offering, and (ii) in all other cases, immediately prior to the close of business on the date of surrender of the shares of Series D Preferred Stock to be converted (in either case, the "**Conversion Date**"), and the person or persons entitled to receive the shares of Common Stock issuable upon such conversion shall be treated for all purposes as the record holder or record holders of such shares of Common Stock on such date.

(d) All shares of Series D Preferred Stock which have been converted as herein provided shall no longer be deemed to be outstanding and all rights with respect to such shares, including the rights, if any, to receive notices and to vote, shall forthwith cease and terminate, except only the right of the holders thereof, subject to the provisions of clause (c) of this paragraph (4), to receive shares of Common Stock in exchange therefor.

(e) In case:

(i) the Corporation shall declare a dividend (or any other distribution) on Common Stock payable otherwise than in cash out of its retained earnings; or

(ii) the Corporation shall authorize the granting to the holders of Common Stock of rights or warrants to subscribe for or purchase any shares of capital stock of any class or of any other rights; or

(iii) of any reclassification of the Common Stock (other than a subdivision, split or combination of its outstanding shares of Common Stock), or of any consolidation or merger to which the Corporation is a party and for which approval of any stockholders of the Corporation is required, or of the sale or transfer of all or substantially all of the assets of the Corporation; or

(iv) of the voluntary or involuntary dissolution, liquidation or winding up of the Corporation;

then the Corporation shall cause to be mailed to each holder of shares of Series D Preferred Stock at its address as shown on the books of the Corporation, at least 30 days (or 20 days in any case specified in clause (1) or (ii) above) prior to the applicable record or effective date hereinafter specified, a notice stating (x) the date on which a record is to

be taken for the purpose of such dividend, distribution, rights or warrants, or, if a record is not to be taken, the date as of which the holders of Common Stock of record to be entitled to such dividend, distribution, rights or warrants are to be determined, or (y) the date on which such reclassification, liquidation or winding up is expected to become effective, and the date as of which it is expected that holders of Common Stock of record shall be entitled to exchange their shares of Common Stock for securities, cash or other property deliverable upon such reclassification, consolidation, merger, sale, transfer, dissolution, liquidation or winding up.

(f) For the purposes of this paragraph (4), the term "Common Stock" shall mean (i) the class of stock designated as the Common Stock of the Corporation on the date of this Certificate of Designations, and (ii) any other class of common stock, including any class resulting from successive changes or reclassifications of such Common Stock consisting solely of changes in par value or from no par value to par value or from par value to no par value.

(g) No fractional share of Common Stock, or scrip representing a fractional share, shall be issuable upon the conversion of any Series D Preferred Stock. If a certificate or certificates representing more than one share of Series D Preferred Stock shall be surrendered for conversion at one time by the same holder, the number of full shares of Common Stock issuable upon conversion thereof shall be computed on the basis of the aggregate number of shares represented by certificates so surrendered. If any fractional interest in a share of Common Stock would be deliverable upon the conversion of any shares of Series D Preferred Stock, the Corporation shall pay, in lieu thereof; in cash the Conversion Price thereof as of the business day immediately preceding the date of such conversion.

(h) Such number of shares of Common Stock as may from time to time be required for such purpose shall be reserved for issuance upon conversion of outstanding shares of Series D Preferred Stock.

(i) If the Corporation shall at any time or from time to time effect a subdivision or stock split of the outstanding Common Stock, the Conversion Price of the Series D Preferred Stock then in effect immediately before that subdivision or stock split shall be proportionately decreased. If the Corporation shall at any time or from time to time combine the outstanding shares of Common Stock, the Conversion Price of the Series D Preferred Stock then in effect immediately before the combination shall be proportionately increased. Any adjustment under this paragraph shall become effective at the close of business on the date the subdivision, stock split or combination, as the case may be, becomes effective.

(j) In the event the Corporation at any time or from time to time shall make or issue, or fix a record date for the determination of holders of Common

Stock entitled to receive, a dividend or other distribution payable in additional shares of Common Stock, then and in each such event the Conversion Price of the Series D Preferred Stock then in effect shall be decreased as of the time of such issuance or, in the event such a record date shall have been fixed, as of the close of business on such record date, by multiplying the Conversion Price of the Series D Preferred Stock then in effect by a fraction:

(1) the denominator of which shall be the sum of the total number of shares of Common Stock issued and outstanding immediately prior to the time of such issuance or the close of business on such record date, plus the number of shares of Common Stock issuable in payment of such dividend or distribution, and

(2) the numerator of which shall be the total number of shares of Common Stock issued and outstanding immediately prior to the time of such issuance or the close of business on such record date;

provided, however, if such record date shall have been fixed and such dividend is not fully paid or if such distribution is not fully made on the date fixed therefor, the Conversion Price of Series D Preferred Stock shall be recomputed accordingly as of the close of business on such record date and thereafter the Conversion Price of Series D Preferred Stock shall be adjusted pursuant to this paragraph as of the time of actual payment or issuance of such dividends or distributions.

(k) In the event the Corporation at any time or from time to time shall make or issue, or fix a record date for the determination of holders of Common Stock entitled to receive, a dividend or other distribution payable in securities of the Corporation other than shares of Common Stock, then and in each such event provision shall be made so that the holders of Series D Preferred Stock shall receive upon conversion thereof in addition to the number of shares of Common Stock receivable thereupon, the amount of such other securities of the Corporation that they would have received had their Series D Preferred Stock been converted into Common Stock on the date, or the record date, of such event and had thereafter, during the period from the date of such event to and including the Conversion Date, retained such securities receivable by them as aforesaid during such period, all subject to further adjustment as provided herein during such period.

(l) If the Common Stock issuable upon the conversion of the Series D Preferred Stock shall be changed into the same or a different number of shares of any class or classes of stock, whether by capital reorganization, reclassification, exchange, substitution or otherwise, then and in each such event the holder of each such share of Series D Preferred Stock shall have the right thereafter to convert such share into the kind and amount of shares of stock and other securities and property receivable upon such reorganization, reclassification, exchange, substitution or other change, by holders of

the number of shares of Common Stock into which such shares of Series D Preferred Stock might have been converted immediately prior to such reorganization, reclassification, exchange, substitution or other change, all subject to further adjustment as provided herein.

(5) Liquidation Preference.

(a) In the event of any voluntary or involuntary liquidation, dissolution or winding up of the affairs of the Corporation, the holders of shares of Series D Preferred Stock then outstanding shall be entitled to be paid out of the assets of the Corporation available for distribution to its shareholders an amount in cash equal to $5.50 for each share outstanding, plus an amount in cash equal to all declared but unpaid dividends thereon to the date fixed for liquidation, dissolution or winding up before any payment shall be made or any assets distributed to the holders of any Junior Securities. If the assets of the Corporation, or the proceeds thereof, are not sufficient to pay in full the liquidation payments payable to the holders of outstanding shares of the Series D Preferred Stock and any Parity Securities, then the holders of all such shares shall share ratably in such distribution of assets, or the proceeds thereof, in accordance with the amount which would have been payable on such distribution if the amounts to which the holders of outstanding shares of Series D Preferred Stock and the holders of outstanding shares of such Parity Securities are entitled were paid in full. Except as provided in this paragraph (5)(a), holders of Series D Preferred Stock shall not be entitled to any distribution in the event of liquidation, dissolution or winding up of the affairs of the Corporation.

(b) For the purposes of this paragraph (5), neither the voluntary sale, conveyance, exchange or transfer (for cash, shares of stock, securities or other consideration) of all or substantially all the property or assets of the Corporation nor the consolidation or merger of the Corporation with or into one or more other corporations shall be deemed to be a liquidation, dissolution or winding up of the Corporation, voluntary or involuntary unless such voluntary sale, conveyance, exchange or transfer, or merger or consolidation, shall be in connection with a plan of liquidation, dissolution or winding up of the Corporation.

(6) Voting. In addition to any voting rights provided by law and to any voting rights of the holders of the Series D Preferred Stock, as or as part of a separate class or series, pursuant to this Certificate or any provision of the Certificate of Incorporation of the Corporation, the holder of each outstanding share of Series D Preferred Stock shall be entitled to vote on any matter voted on by holders of Common Stock, voting together as a single class with the holders of the Common Stock, and any other shares entitled to vote in the ordinary course. With respect to any such vote, each share of Series D Preferred Stock shall entitle the holder thereof to cast one vote.

(7) Reports. So long as any of the Series D Preferred Stock is outstanding, the Corporation will furnish the holders thereof with the quarterly and annual financial reports, if any, that the Corporation is required to file with the Securities and Exchange Commission pursuant to Section 13 or Section 15(d) of the Securities Exchange Act of 1934.

(8) General Provisions.

(a) The term "**person**" as used herein means any corporation, partnership, trust, organization, association, other entity or individual.

(b) The term "**outstanding**," when used with reference to shares of stock, shall mean issued shares, excluding shares held by the Corporation or any subsidiary of the Corporation.

(c) The headings of the paragraphs, subparagraphs, clauses and subclauses of this Certificate of Designations are for convenience of reference only and shall not define, limit or affect any of the provisions hereof.

IN WITNESS WHEREOF, FIBROGEN, Inc. has caused this Certificate of Designations to be signed and attested by the undersigned this 30th day of March, 1999.

FIBROGEN, INC.

By: /s/ Julian N. Stern
JULIAN N. STERN, Secretary

CERTIFICATE OF DESIGNATION OF POWERS,
PREFERENCES AND RIGHTS OF THE SERIES E PREFERRED STOCK
OF
FIBROGEN, INC.

ADOPTED IN ACCORDANCE WITH THE PROVISIONS OF
SECTION 151 OF THE
DELAWARE GENERAL CORPORATION LAW

FIBROGEN, INC., a Delaware corporation (the "Corporation"), pursuant to Section 151 of the General Corporation Law of the State of Delaware, certifies that:

FIRST: The Board of Directors of the Corporation has duly adopted the resolutions attached hereto as Appendix I providing for the issuance of an additional series of its Preferred Stock to be designated "Series E Preferred Stock" and to consist of 12,917,595 shares.

SECOND: The Certificate of Designation of powers, preferences and rights of the Series A Preferred Stock was filed with the Secretary of the State of Delaware on December 14, 1993; the Certificate of Designation of powers, preferences and rights of the Series B Preferred Stock was filed with the Secretary of the State of Delaware on November 8, 1995 and amended on April 19, 1996 and October 17, 1997; the Certificate of Designation of powers, preferences and rights of the Series C Preferred Stock was filed with the Secretary of the State of Delaware on March 30, 1998; the Certificate of Designation of powers, preferences and rights of the Series D Preferred Stock was filed with the Secretary of the State of Delaware on March 31, 1999; and the Certificate of Designation of powers, preferences and rights of the Royalty Acquisition Preferred Stock was filed with the Secretary of the State of Delaware on June 9, 1997 and amended on March 30, 1998.

THIRD: The Certificate of Designation of the Series E Preferred Stock attached hereto as Appendix I has been duly adopted in accordance with the provisions of Section 151 of the General Corporation Law of the State of Delaware by the directors of the Corporation.

IN WITNESS WHEREOF, the Corporation has caused this Certificate to be signed by Thomas B. Neff, its President, and Julian Stern, its Secretary, this 12th day of May, 2000.

/s/ Thomas B. Neff
President

ATTEST:

/s/ Julian Stern
Secretary

APPENDIX I

WHEREAS, the Certificate of Incorporation, as amended (the "Restated Certificate") of this Corporation provides for a class of its authorized shares known as preferred stock, comprising 50,000,000 shares, issuable from time to time in one or more series;

WHEREAS, the Board of Directors is authorized to fix or alter the dividend rights, dividend rate, conversion rights, voting rights, rights and terms of redemption (including any sinking fund provisions), redemption price or prices and liquidation preferences of any wholly unissued series of preferred stock, and the number of shares constituting any such series and the designation thereof, or all or any of them;

WHEREAS, the Board of Directors, pursuant to its authority as aforesaid, has previously fixed the powers, preferences and rights of a series of preferred stock designated the "Series A Preferred Stock," consisting of 7,390,000 shares; and

WHEREAS, the Board of Directors, pursuant to its authority as aforesaid, has previously fixed the powers, preferences and rights of a series of preferred stock designated the "Series B Preferred Stock," consisting of 14,100,000 shares;

WHEREAS, the Board of Directors, pursuant to its authority as aforesaid, has previously fixed the powers, preferences and rights of a series of preferred stock designated the "Series C Preferred Stock," consisting of 5,000,000 shares;

WHEREAS, the Board of Directors, pursuant to its authority as aforesaid, has previously fixed the powers, preferences and rights of a series of preferred stock designated the "Series D Preferred Stock," consisting of 909,901 shares;

WHEREAS, the Board of Directors, pursuant to its authority as aforesaid, has previously fixed the powers, preferences and rights of a series of preferred stock designated the "Royalty Acquisition Preferred Stock," consisting of 8,000,000 shares; and

WHEREAS, it is now the desire of the Board of Directors, pursuant to its authority as aforesaid, to fix the powers, preferences and rights of a series of preferred stock designated the "Series E Preferred Stock";

NOW, THEREFORE, BE IT RESOLVED that the Board of Directors does hereby provide for the issuance of an additional series of preferred stock of the Corporation, consisting of 12,917,595 shares designated as "Series E Preferred Stock," and does hereby fix and determine the powers, preferences and rights relating to said Series E Preferred Stock as hereinafter set forth.

The powers, preferences and rights granted to the Series E Preferred (as defined below or the holders thereof are as follows:

1. Designation. The series of Preferred Stock shall be designated the "Series E Preferred Stock" ("Series E Preferred") and shall consist of 12,917,595 shares. The "Series A Preferred Stock" ("Series A Preferred"), the "Series B Preferred Stock" ("Series B Preferred"), the Series C Preferred Stock ("Series C Preferred"), the "Series D Preferred Stock" ("Series D Preferred"), the Royalty Acquisition Preferred Stock ("Royalty Acquisition Preferred") and the Series E Preferred and any other series of Preferred Stock authorized by the Board of Directors of this Corporation are hereinafter referred to as "Preferred Stock" or "Preferred."

2. Dividend Rate and Rights.

(a) Dividends. Holders of the Series E Preferred, in preference to the holders of Common Stock or any other stock of the Corporation ("Junior Stock"), shall be entitled to receive, when and as declared by the Board of Directors, but only out of funds that are legally available therefor, noncumulative cash dividends at the rate of eight percent (8%) of the "Original Issue Price" per annum on each outstanding share of Series E Preferred (as adjusted for any stock dividends, combinations, splits, reclassifications, recapitalizations and the like with respect to such shares). The Original Issue Price of the Series E Preferred shall be Four Dollars and Forty Nine Cents ($4.49) per share (which amount shall be subject to adjustment whenever there shall occur a stock split, combination, reclassification or other similar event involving the Series E Preferred).

(b) Conversion of Dividends. In the event of the conversion of any shares of Series E Preferred pursuant to Section 5 hereof, all declared and unpaid dividends on such shares of Series E Preferred will be canceled and no dividends will be payable in respect of such shares of Series E Preferred, but instead the amount of declared but unpaid dividends on such shares of Series E Preferred will be taken into account in determining the number of shares of Common Stock into which such shares of Series E Preferred are convertible, as provided in Section 5 hereof.

(c) Dividends in Kind. In the event the Corporation shall make or issue, or shall fix a record date for the determination of holders of Junior Stock entitled to receive, a dividend or other distribution with respect to the Junior Stock payable in (i) securities other than shares of Common Stock of the Corporation or (ii) assets, then and in each such event the holders of Series E Preferred shall receive, at the same time such distribution is made with respect to Junior Stock, the number of securities or such other assets of the Corporation which they would have received had their Series E Preferred been converted into Common Stock immediately prior to the record date for determining holders of Junior Stock entitled to receive such distribution.

3. Liquidation, Dissolution or Winding Up.

(a) Treatment at Liquidation, Dissolution or Winding Up.

(1) In the event of any liquidation, dissolution, merger (where a change of control occurs), sale of all or substantially all of the assets of the Corporation, or winding up of the Corporation, whether voluntary or involuntary, (any of such events referred to herein as a "Liquidity Event") before any distribution may be made with respect to the Junior Stock, holders of each share of Series E Preferred shall be entitled to be paid out of the assets of the Corporation available for distribution to holders of the Corporation's capital stock of all classes, whether such assets are capital, surplus, or capital earnings, an amount equal to the Original Issue Price (which amount shall be subject to equitable adjustment whenever there shall occur a stock dividend, combination, split, reclassification, recapitalization or other similar event involving the Series E Preferred) plus all declared and unpaid dividends thereon (collectively, the "Liquidation Amount"). If the assets of the Corporation available for distribution to its stockholders shall be insufficient to pay the holders of shares of Series E Preferred the full amount of the Liquidation Amount to which they shall be entitled, the holders of shares of Series E Preferred shall share ratably in any distribution of assets according to the amounts which would be payable with respect to the Series E Preferred held by them upon such distribution if all amounts payable on or with respect to said shares were paid in full

(2) Following any Reorganization described in Section 3(b) below, and upon completion of the distribution required by Section 3(a)(1) above, the remaining assets of the Corporation available for distribution to stockholders shall be distributed pursuant to Section 3(a)(3) below. In all other Liquidity Events, upon completion of the distribution required by Section 3(a)(1) above the remaining assets of the Corporation available for distribution to stockholders shall be distributed to the holders of the Preferred Stock (other than the Series E Preferred), in accordance with the respective Certificates of Designation of Powers, Preferences and Rights of such series of Preferred Stock, or the Certificate of Incorporation, as amended, as applicable.

(3) Upon completion of the distribution required by Section 3(a)(1) above, and Section 3(a)(2) above if applicable, the remaining assets of the Corporation available for distribution shall be distributed to the holders of Common Stock and Preferred Stock (other than the Series E Preferred) on an as converted to Common Stock basis, until each of such holders receives with respect to each Common Stock share equivalent up to, but not more than, the amount paid to with respect to each share of Series E

Preferred pursuant to Section 3(a)(1) above. If the assets of the Corporation are not adequate to pay the amounts set forth in this Section 3(a)(3), the assets shall be distributed ratably amongst the holders of capital stock entitled to such distribution, on an as-converted to common stock basis.

(4) Upon completion of the distribution required by Sections 3(a)(1), (2) and (3) above, the remaining assets of the Corporation available for distribution to stockholders shall be distributed to the holders of the Preferred Stock and the holders of the Common Stock on a pro-rata basis assuming that each share of Preferred Stock has been converted into Common Stock.

(b) Treatment of Reorganizations. Any Reorganization (as such term is defined in Section 5(f)), shall be regarded as a liquidation, dissolution or winding up of the affairs of the Corporation within the meaning of this Section 3; provided, however, that each holder of Series E Preferred shall have the right to elect the benefits of the provisions of Section 5(f) hereof, if applicable, in lieu of receiving payment of amounts payable upon liquidation, dissolution or winding up of the Corporation pursuant to this Section 3.

(c) Distributions in Cash. The Liquidation Amount shall in all events be paid in cash; provided, however, that if the Liquidation Amount is payable in connection with a Reorganization, then each holder of the Series E Preferred may, at its election, receive payment of the Liquidation Amount in the same form of consideration as is payable with respect to the Junior Stock. Wherever a distribution provided for in this Section 3 is payable in property other than cash, the value of such distribution shall be the fair market value of such property as determined in good faith by the Corporation's Board of Directors.

4. Voting Power. Except as otherwise expressly provided in Section 7 hereof, or as required by law, each holder of Series E Preferred shall be entitled to vote on all matters and shall be entitled to that number of votes equal to the largest number of whole shares of Common Stock into which such holder's shares of Series E Preferred could be converted, pursuant to the provisions of Section 5 hereof, at the record date for the determination of stockholders entitled to vote on such matter or, if no such record date is established, at the date such vote is taken or any written consent of stockholder is solicited. Except as otherwise expressly provided herein or as required by law, the holders of shares of Series E Preferred and Common Stock shall vote together as a single class on all matters. Fractional votes shall not, however, be permitted and any fractional voting rights (after aggregating all shares into which shares of Series E Preferred held by each holder could be converted) shall be rounded to the nearest whole number (with one-half being rounded upward).

5. Conversion into Common Stock. The holders of the Series E Preferred shall have the following rights with respect to the conversion of the Series E Preferred into shares of Common Stock (the "Conversion Rights"):

(a) General. Subject to and in compliance with the provisions of this Section 5, any share of the Series E Preferred may, at the option of the holder, be converted at any time into fully-paid and non-assessable shares of Common Stock of the Corporation. The number of shares of Common Stock to which a holder of Series E Preferred shall be entitled upon conversion shall be the product obtained by multiplying the Applicable Conversion Rate (determined as provided in Section 5(b)) by the number of shares of Series E Preferred being converted.

(b) Applicable Conversion Rate. The conversion rate in effect at any time (the "Applicable Conversion Rate") shall be the quotient obtained by dividing the Original Issue Price by the Applicable Conversion Value, calculated as provided in Section 5(c).

(c) Applicable Conversion Value. The Applicable Conversion Value shall be the Original Issue Price, except that such amount be adjusted from time to time in accordance with Section 5(d).

(d) Adjustments to Applicable Conversion Values.

(1) Conversion Events.

(A) Upon Sale of Common Stock. If the Corporation shall, while there are any shares of Series E Preferred outstanding, issue or sell (or in accordance with Section 5(d)(1)(B) below is deemed to have issued or sold) shares of its Common Stock without consideration or at a price per share less than the Applicable Conversion Value in effect immediately prior to such issuance or sale, then in each such case such Applicable Conversion Value for the Series E Preferred, upon each such issuance or sale, except as hereinafter provided, shall be lowered so as to be equal to an amount determined by multiplying the Applicable Conversion Values by a fraction;

(i) the numerator of which shall be (a) the number of shares of Common Stock outstanding immediately prior to the issuance of such additional shares of Common Stock, plus (b) the number of shares of Common Stock which the net aggregate consideration, if any, received or to be received by the Corporation (in accordance with the Net Consideration Per Share in the case of warrants, options or any other rights with respect to convertible or exchangeable securities) for the total number of such additional shares of Common Stock so issued would purchase at the Applicable

Conversion Value in effect immediately prior to such issuance, and

(ii) the denominator of which shall be (a) the number of shares of Common Stock outstanding immediately prior to the issuance of such additional shares of Common Stock plus (b) the number of such additional shares of Common Stock so issued;

provided that for the purpose of clause (i) and (ii) of this Subsection 5(d)(1)(A), all shares of Common Stock issuable upon conversion of the outstanding shares of Preferred Stock and all shares of Common Stock issuable upon exercise of outstanding options, warrants and other convertible securities shall be deemed to be outstanding.

(B) Upon Issuance of Warranties, Options and Rights to Common Stock.

(i) For the purpose of this Section 5(d)(1), the issuance of any warrants, options, subscriptions, or purchase rights with respect to shares of Common Stock and the issuance of any securities convertible into or exchangeable for shares of Common Stock (or the issuance of any warrants, options or any rights with respect to such convertible or exchangeable securities) shall be deemed an issuance of such Common Stock at such time if the Net Consideration Per Share (as hereinafter determined) which may be received by the Corporation for such Common Stock shall be less than the Applicable Conversion Value at the time of such issuance. Any obligation, agreement, or undertaking to issue warrants, options, subscriptions, or purchase rights at any time in the future shall be deemed to be an issuance at the time such obligation, agreement or undertaking is made or arises. No adjustment of the Applicable Conversion Value shall be made under this Section 5(d)(1) upon the issuance of any shares of Common Stock which are issued pursuant to the exercise of any warrants, options, subscriptions, or purchase rights or pursuant to the exercise of any conversion or exchange rights in any convertible securities if any adjustment shall previously have been made or deemed not required hereunder, upon the issuance of any such warrants, options, or subscription or purchase rights or upon the issuance of any convertible securities (or upon the

issuance of any warrants, options or any rights therefor) as above provided.

(ii) Should the Net Consideration Per Share of any such warrants, options, subscriptions, or purchase rights or convertible securities be decreased from time to time (other than as a result of a stock split, stock dividend or other similar event), then, upon the effectiveness of each such change, the Applicable Conversion Value shall be adjusted to such Applicable Conversion Value as would have obtained (1) had the adjustments made upon the issuance of such warrants, options, rights, or convertible securities been made upon the basis of the decreased Net Consideration per share of such securities, and (2) had adjustments made to the Applicable Conversion Value since the date of issuance of such securities been made to the Applicable Conversion Value as adjusted pursuant to (1) above. Any adjustment of the Applicable Conversion Value with respect to this Section 5(d)(1)(B) which relates to warrants, options, subscriptions, purchase rights or convertible securities with respect to shares of Common Stock shall be disregarded if, as, when and to the extent such warranties, options, subscriptions, purchase rights or convertible securities expire or are cancelled without being exercised or converted, so that the Applicable Conversion Value effective immediately upon such cancellation or expiration shall be equal to the Applicable Conversion Value in effect at the time of the issuance of the expired or cancelled warrants, options, subscriptions, purchase rights, or convertible securities with such additional adjustments as would have been made to all Applicable Conversion Value had the expired or cancelled warrants, options, subscriptions, purchase rights or convertible securities not been issued.

For purposes of this paragraph, the “Net Consideration Per Share” which may be received by the Corporation shall be determined as follows:

(a) The “Net Consideration Per Share” shall mean the amount equal to the total amount of consideration, if any, received by the Corporation for the issuance of such warrants, options, subscriptions, or other purchase rights or convertible or exchangeable securities, plus the minimum amount of consideration, if any, payable to the Corporation

upon exercise or conversion thereof, divided by the aggregate number of shares of Common Stock that would be issued if all such warrants, options, subscriptions, or other purchase rights or convertible or exchangeable securities were exercised, exchanged, or converted.

(b) The "Net Consideration Per Share" which may be received by the Corporation shall be determined in each instance as of the date of issuance of warrants, options, subscriptions, or other purchase rights or convertible or exchangeable securities without giving effect to any possible future upward price adjustments or rate adjustments which may be applicable with respect to such warrants, options, subscriptions, or other purchase rights or convertible exchangeable securities.

(C) Stock Dividends. In the event the Corporation shall make or issue a dividend or other distribution payable in Common Stock or securities of the Corporation convertible into or otherwise exchangeable for the Common Stock of the Corporation, then such Common Stock or other securities issued in payment of such dividend shall be deemed to have been issued without consideration (except for dividends payable in shares of Common Stock payable pro rata to holders of Series E Preferred and to holders of any other class of stock).

(D) Consideration Other than Cash. For purposes of this Section 5(d)(1), if a part or all of the consideration received by the Corporation in connection with the issuance of shares of the Common Stock or the issuance of any of the securities described in this Section 5(d) consists of property other than cash, such consideration shall be deemed to have a fair market value as is reasonably determined in good faith by the Board of Directors of the Corporation.

(E) Exceptions. This Section 5(d)(1) shall not apply under any of the circumstances which would constitute an Extraordinary Common Stock Event (as hereinafter defined in Section 5(d)(2)). Further, the provisions of this Section 5(d) shall not apply to (i) shares issued upon conversion of Preferred Stock, (ii) Common Stock and/or bona fide options (and the shares issuable upon exercise thereof) issued to employees, directors and consultants of the Corporation pursuant to written stock option or stock purchase plans or arrangements that have been approved by the stockholders of the Corporation (within one year of the date of adoption), or (iii)

shares issued in connection with the exercise of convertible securities, warrants or options or other contractual obligations in connection with the rollup of Skin Sciences, Inc. into the Corporation, outstanding as of the date of the first sale of Series E Preferred.

(2) Upon Extraordinary Common Stock Event. Upon the happening of an Extraordinary Common Stock Event (as hereinafter defined), the Applicable Conversion Value for the Series E Preferred shall, simultaneously with the happening of such Extraordinary Common Stock Event, be adjusted by multiplying the then effective Applicable Conversion Value with respect to the Series E Preferred by a fraction, the numerator of which shall be the number of shares of Common Stock outstanding immediately prior to such Extraordinary Common Stock Event and the denominator of which shall be the number of shares of Common Stock outstanding immediately after such Extraordinary Common Stock Event, and the product so obtained shall thereafter be the Applicable Conversion Value. The Applicable Conversion Value for the Series E Preferred shall be readjusted in the same manner upon the happening of any successive Extraordinary Common Stock Event or Events.

"Extraordinary Common Stock Event" shall mean (i) the issue of additional shares of Common Stock as a dividend or other distribution on outstanding Common Stock or on any class or series of preferred stock, unless made pro rata to holders of Series E Preferred, (ii) a subdivision of outstanding shares of Common Stock into a greater number of shares of Common Stock, or (iii) a combination of outstanding shares of the Common Stock into a smaller number of shares of Common Stock.

(e) Capital Reorganization or Reclassification. If the Common Stock issuable upon the conversion of the Series E Preferred shall be changed into the same or different number of shares of any class or classes of stock, whether by capital reorganization, reclassification or otherwise (other than a subdivision or combination of shares or stock dividend or distribution provided for elsewhere in this Section 5 or by a Reorganization), then and in each such event, the holder of each share of Series E Preferred shall have the right thereafter to convert such share into the kind and amount of shares of stock and other securities and property receivable upon such capital reorganization, reclassification or other change by holders of the number of shares of Common Stock into which such shares of Series E Preferred might have been converted immediately prior to such capital reorganization, reclassification or other change.

(f) Capital Reorganization, Merger or Sale of Assets. If at any time or from time to time there shall be a capital reorganization of the Common Stock (other than a subdivision, combination, reclassification or exchange of shares provided for elsewhere in this Section 5) or a merger or consolidation of the Corporation with or into another corporation or other entity or person (other than the merger of a wholly or majority owned subsidiary into the Corporation), or any other corporate reorganization, in which the stockholders of the Corporation immediately prior to such consolidation, merger or reorganization, own less than fifty percent (50%) of the Corporation's voting power immediately after such consolidation, merger or reorganization, or the sale of all or substantially all of the Corporation's properties and assets to any other person, or the sale of a majority of the voting securities of the Corporation in one transaction or a series of related transactions (any of which events is herein referred to as a "Reorganization") then as a part of such Reorganization, provision shall be made so that the holders of the Series E Preferred shall thereafter be entitled to receive upon conversion of the Series E Preferred, the number of shares of stock or other securities or property of the Corporation, or of the successor corporation resulting from such Reorganization, to which such holder would have been entitled if such holder had converted its shares of Series E Preferred immediately prior to such Reorganization. In any such case, appropriate adjustment shall be made in the application of the provisions of this Section 5 with respect to the rights of the holders of the Series E Preferred after the Reorganization, to the end that the provisions of this Section 5 (including adjustment of the Applicable Conversion Value then in effect and the number of shares issuable upon conversion of the Series E Preferred) shall be applicable after that event in as nearly equivalent a manner as may be practicable.

Upon the occurrence of a Reorganization, under circumstances which make the preceding paragraph applicable, each holder of Series E Preferred shall have the option of electing treatment for his shares of Series E Preferred under either this Section 5(f) or Section 3 hereof, notice of which election shall be submitted in writing to the Corporation at its principal offices no later than ten (10) business days before the effective date of such event.

(g) Certificate as to Adjustments; Notice by Corporation. In each case of an adjustment or readjustment of the Applicable Conversion Rate, the Corporation at its expense will furnish each holder of Preferred Stock with a certificate, executed by the president and chief financial officer (or in the absence of a person designated as the chief financial officer, by the treasurer) showing such adjustment or readjustment, and stating in detail the facts upon which such adjustment or readjustment is based.

(h) Exercise of Conversion Privilege. To exercise its conversion privilege, a holder of Series E Preferred shall surrender the certificate or certificates representing the shares being converted to the Corporation at its principal office, and shall give written notice to the Corporation at that office that such holder elects to convert

such shares. Such notice shall also state the name or names (with address or addresses) in which the certificate or certificates for shares of Common Stock issuable upon such conversion shall be issued. The certificate or certificates for shares of Series E Preferred surrendered for conversion shall be accompanied by proper assignment thereof to the Corporation or in blank. The date when such written notice is received by the Corporation, together with the certificate or certificates representing the shares of Series E Preferred being converted, shall be the "Conversion Date." As promptly as practicable after the Conversion Date, the Corporation shall issue and shall deliver to the holder of the shares of Series E Preferred being converted, or on its written order, such certificate or certificates as it may request for the number of whole shares of Common Stock issuable upon conversion of such shares of Series E Preferred in accordance with the provisions of this Section 5, and cash, as provided in Section 5(i), in respect of any fraction of a share of Common Stock issuable upon such conversion. Such conversion shall be deemed to have been effected immediately prior to the close of business on the Conversion Date, and at such time the rights of the holder as holder of the converted shares of Series E Preferred shall cease and the person or persons in whose name or names any certificate or certificates for shares of Common Stock shall be issuable upon such conversion shall be deemed to have become the holder or holders of record of the shares of Common Stock represented thereby. The Corporation shall pay any taxes payable with respect to the issuance of Common Stock upon conversion of the Series E Preferred, other than any taxes payable with respect to income by the holders thereof.

(i) Cash in Lieu of Fractional Shares. The Corporation may, if it so elects, issue fractional shares of Common Stock or script representing fractional shares upon the conversion of shares of Series E Preferred. If the Corporation does not elect to issue fractional shares, the Corporation shall pay to the holder of the shares of Series E Preferred which were converted a cash adjustment in respect of such fractional shares in an amount equal to the same fraction of the market price per share of the Common Stock (as determined in a reasonable manner prescribed by the Board of Directors) at the close of business on the Conversion Date. The determination as to whether or not any fractional shares are issuable shall be based upon the total number of shares of Series E Preferred being converted at any one time by any holder thereof, not upon each share of Series E Preferred being converted.

(j) Partial Conversion. In the event some but not all of the shares of Series E Preferred represented by a certificate or certificates surrendered by a holder are converted, the Corporation shall execute and deliver to or on the order of the holder, at the expense of the Corporation, a new certificate representing the number of shares of Series E Preferred which were not converted.

(k) Reservation of Common Stock. The Corporation shall at all times reserve and keep available out of its authorized by unissued shares of Common Stock, solely

for the purpose of effecting the conversion of the shares of the Series E Preferred, such number of its shares of Common Stock shall from time to time be sufficient to effect the conversion of all outstanding shares of the Series E Preferred, and if at any time the number of authorized but unissued shares of Common Stock shall not be sufficient to effect the conversion of all then outstanding shares of the Series E Preferred, the Corporation shall take such corporate action as may be necessary to increase its authorized but unissued shares of Common Stock to such number of shares as shall be sufficient for such purpose.

(l) Minimum Adjustment. Any provision of this Section 5 to the contrary notwithstanding, no adjustment in the Applicable Conversion Value shall be made if the amount of such adjustment would be less than 1% of the Applicable Conversion Value then in effect, but any such amount shall be carried forward and an adjustment with respect thereto shall be made at the time of and together with any subsequent adjustment which, together with all amounts so carried forward, aggregate 1% or more of the Applicable Conversion Value then in effect.

(m) Mandatory Conversion. Each share of Series E Preferred shall automatically be converted into shares of Common Stock, based on the then-effective Applicable Conversion Rate, as applicable, (A) at any time upon the affirmative election of the holders of at least fifty percent (50%) of the outstanding shares of the Series E Preferred voting as a single class, or (B) immediately upon (1) the closing of a Qualified Public Offering (as herein after defined). For purposes hereof, the term "Qualified Public Offering" shall mean an underwritten public offering pursuant to an effective registration statement under the Securities Act of 1933, as amended (the "Act"), covering the offer and sale of the Corporation's securities in which (i) the per share price is at least one hundred twenty five percent (125%) of the Original Issue Price (as adjusted for stock splits, etc.) and (ii) the gross cash proceeds to the Corporation (before underwriting discounts, commissions and fees) are at least Forty Million Dollars ($40,000,000) and (2) listing of the shares of Common Stock of the Corporation on the New York Stock Exchange, American Stock Exchange, NASDAQ National Market or NASDAQ Small Cap Market. Holders of shares subject to conversion shall deliver to the Corporation at its principal office (or such other office or agency as the Corporation may designate by notice in writing) during its usual business hours, the certificate or certificates for shares of Series E Preferred being converted, and the Corporation shall issue and deliver to such holders certificates for the number of shares of Common Stock to which such holders are entitled. Until such time as holders of shares of Series E Preferred shall surrender those certificates therefor as provided above, such certificates shall be deemed to represent the shares of Common Stock to which the holders shall be entitled upon the surrender thereof.

6. No Reissuance of Preferred Stock. No share of Series E Preferred acquired by the Corporation by reason of redemption, purchase, conversion or otherwise shall be reissued, and all such shares shall be cancelled, retired and eliminated from the shares which the Corporation shall

be authorized to issue. The Corporation may from time to time take such appropriate corporate action as may be necessary to reduce the authorized number of shares of the Series E Preferred accordingly.

7. Restrictions and Limitations. Except as expressly provided herein or as required by law, so long as any shares of Series E Preferred remain outstanding, the Corporation shall not, without the approval by vote or written consent by the holders of at least a majority of the then outstanding shares of Series E Preferred, voting as a separate class:

(a) authorize or issue, or increase or decrease the authorized number of, (other than by redemption or conversion) any shares of Common Stock or Preferred Stock or shares of any new class or series of stock or any other securities convertible into equity securities of the Corporation ranking on a parity with or senior to the Series E Preferred in rights of redemption, liquidation preference, voting or dividends or any increase in the authorized or designated number of any such new class or series; provided, that the Corporation may, without such affirmative vote of holders of the Series E Preferred, (1) at any time, authorize, issued and sell up to 4,008,909 shares of Series E Preferred to stockholders of record of the Company and its subsidiaries as of the date of the first sale of Series E Preferred and to Life Sciences venture fund of Japan and such other investors as approved by at least a majority of the then outstanding shares of Series E Preferred, and (2) at any time after the first anniversary of the date of the first sale of Series E Preferred, (i) authorize, issue and sell up to 3,000,000 shares (in addition to the shares of Series E Preferred set forth in clause (1) above) of Series E Preferred or, in the alternative, (ii) establish, issue and sell shares of capital stock of equal priority to that of the Series E Preferred with an aggregate purchase price of up to $20,000,000;

(b) redeem or repurchase any capital stock or pay dividends or other distributions with respect to capital stock of the Corporation (except for acquisitions of Common Stock by the Corporation pursuant to agreements which permit the Corporation to repurchase such shares upon termination of services to the Corporation or in exercise of the Corporation's right of first refusal upon a proposed transfer);

(c) take any action or agreement by the Corporation or its stockholders regarding a Reorganization in which the consideration paid or proposed to be paid to the Corporation or the holders of capital stock of the Corporation implies a price or value per share of the Series E Preferred less than the Liquidation Amount;

(d) take any action or knowingly fail to take any action that would result in or effectuate the liquidation, dissolution or winding up of the Corporation; or

(e) effectuate any amendment, alteration, or repeal of any provision of the Certificate of Incorporation, as amended, or the Bylaws of the Company that alters or

changes the voting powers, preferences, or other special rights or privileges, qualifications, limitations, or restrictions of the Series E Preferred.

8. No Dilution or Impairment. Without the consent of the holders of the then outstanding Series E Preferred, as required under Section 7, the Corporation shall not amend its Certificate of Incorporation or participate in any reorganization, transfer of assets, consolidation, merger, dissolution, issue or sale of securities or take any other voluntary action, for the purpose of avoiding or seeking to avoid the observance or performance of any of the terms to be observed or performed hereunder by the Corporation, but shall at all times in good faith assist in carrying out all such action as may be reasonably necessary or appropriate in order to protect the conversion rights of the holders of the Series E Preferred against dilution or other impairment.

9. Notices of Record Date. In the event of

(a) any taking by the Corporation of a record of the holders of any class of securities for the purpose of determining the holders thereof who are entitled to receive any dividend or other distribution, or any right to subscribe for, purchase or otherwise acquire any shares of stock of any class or any other securities or property, or to receive any other right, or

(b) any capital reorganization of the Corporation, any reclassification or recapitalization of the capital stock of the Corporation, any merger of the Corporation, or any transfer of all or substantially all of the assets of the Corporation to any other corporation, or any other entity or person, or

(c) any voluntary or involuntary dissolution, liquidation or winding up of the Corporation,

then and in each such event the Corporation shall mail or cause to be mailed to each holder of Series E Preferred a notice specifying (i) the date on which any such record is to be taken for the purpose of such dividend, distribution or right and a description of such dividend, distribution, or right, (ii) the date on which any such reorganization, reclassification, recapitalization, transfer, merger, dissolution, liquidation or winding up is expected to become effective and (iii) the time, if any, that is to be fixed, as to when the holders of record of Common Stock (or other securities) shall be entitled to exchange their shares of Common Stock (or other securities) shall be entitled to exchange their shares of Common Stock (or other securities) for securities or other property deliverable upon such reorganization, reclassification, recapitalization, transfer, merger, dissolution, liquidation or winding up. Such notice shall be mailed at least ten (10) business days prior to the date specified in such notice on which such action is to be taken.

CERTIFICATE OF OWNERSHIP AND MERGER

MERGING

FIBROPHAR.MA, INC.

INTO

FIBROGEN, INC

*** * * * * * ***

FibroGen, Inc., a corporation organized and existing under the laws of Delaware,

DOES HEREBY CERTIFY:

FIRST: That this corporation was incorporated on the 29th day of September, 1993, pursuant to the General Corporation Law of the State of Delaware.

SECOND: That this corporation owns all of the outstanding shares (of each class) of the stock of FibroPharma, Inc., a corporation incorporated on the 10th day of February, 1995, pursuant to the Corporations Code of the State of California.

THIRD: That this corporation, by the following resolutions of its Board of Directors, duly adopted at a meeting held on the 16th day of August, 2001, determined to and did merge into itself said FibroPharma, Inc.:

RESOLVED, that FibroGen, Inc. merge, and it hereby does merge into itself FibroPharma, Inc. and assumes all of its obligations; and

FURTHER RESOLVED, that the merger shall be effective upon the date of filing with the Secretary of State of Delaware;

FURTHER RESOLVED, that the proper officer of this corporation be and he or she is hereby directed to make and execute a Certificate of Ownership and Merger setting forth a copy of the resolutions to merge said FibroPharma, Inc. and assume its liabilities and obligations, and the date of adoption thereof, and to cause the same to be filed with the Secretary of State and to do all acts and things whatsoever, whether within or without the State of Delaware, which may be in anywise necessary or proper to effect said merger.

IN WITNESS WHEREOF, said FibroGen, Inc. has caused this Certificate to be signed by Thomas B. Neff, its President and Chief Executive Officer, this 11th day of February, 2002.

FIBROGEN, INC.

By /s/ Thomas Neff
President and Chief Executive Officer

CERTIFICATE OF AMENDMENT OF THE
CERTIFICATE OF DESIGNATION OF POWERS, PREFERENCES AND PRIVILEGES
OF
SERIES E PREFERRED STOCK
OF
FIBROGEN, INC.

It is hereby certified that:

1. The name of the corporation (hereinafter called the "Corporation") is FIBROGEN, Inc.

2. The Certificate of Designation of Powers, Preferences and Privileges of Series E Preferred Stock of the Corporation filed with the Delaware Secretary of State effective May 16, 2000 is hereby amended by striking out clause (a) of Section 7 of Appendix 1 and substituting in lieu of said paragraph the following paragraph:

(a) authorize or issue, or increase or decrease the authorized number, (other than by redemption or conversion) of any shares of Common Stock or Preferred Stock or shares of any new class or series of stock or any other securities convertible into equity securities of the Corporation ranking on a parity with or senior to the Series E Preferred in rights of redemption, liquidation preference, voting or dividends or any increase in the authorized or designated number of any such new class or series; provided, that the Corporation may, without such affirmative vote of holders of the Series E Preferred, (1) at any time, authorize, issue and sell up to 4,008,909 shares of Series E Preferred to stockholders of record of the Company and its subsidiaries as of the date of the first sale of Series E Preferred and to Life Sciences venture fund of Japan and such other investors as approved by at least a majority of the then outstanding shares of Series E Preferred, and (2) at any time after the first anniversary of the date of the first sale of Series E Preferred, (i) authorize, issue and sell up to 3,000,000 shares (in addition to the shares of Series E Preferred set forth in clause (1) above) of Series E Preferred or, in the alternative, (ii) establish, issue and sell shares of capital stock of equal or lesser priority to that of the Series E Preferred with an aggregate purchase price of up to $20,000,000;

3. The Amendment of the Certificate of Designation of Powers, Preferences and Privileges of Series E Preferred Stock herein has been duly adopted in accordance with the provisions of Section 228 and 242 of the Delaware General Corporation Law.

Executed this 24th day of June, 2002.

/s/ Julian N. Stern
Julian N. Stern, Secretary

CERTIFICATE OF AMENDMENT OF THE
CERTIFICATE OF DESIGNATIONS
OF
SERIES D CONVERTIBLE PREFERRED STOCK
OF
FIBROGEN, INC.

It is hereby certified that:

1. The name of the corporation (hereinafter called the "Corporation") is FibroGen, Inc.

2. The Certificate of Designations of Series D Convertible Preferred Stock of the Corporation filed with the Delaware Secretary of State effective March 31, 1999 is hereby amended by substituting in lieu of Section 1 the following new Section 1:

"(1) Number and Designation. 2,090,910 shares of the Preferred Stock of the Corporation shall be designated as Series D Convertible Preferred Stock ("**Series D Preferred Stock**")."

3. The Amendment of the Certificate of Designations of Series D Convertible Preferred Stock herein has been duly adopted in accordance with the provisions of Section 228 and 242 of the Delaware General Corporation Law.

Executed this 26th day of July, 2002.

/s/ Julian N. Stern
Julian N. Stern, Secretary

CERTIFICATE OF AMENDMENT OF THE
CERTIFICATE OF DESIGNATIONS
OF
SERIES D CONVERTIBLE PREFERRED STOCK
OF
FIBROGEN, INC.

It is hereby certified that:

1. The name of the corporation (hereinafter called the "Corporation") is FibroGen, Inc.

2. The Certificate of Designations of Series D Convertible Preferred Stock of the Corporation filed with the Delaware Secretary of State effective March 31, 1999 and amended on July 26, 2002 is hereby amended by substituting in lieu of Section 1 the following new Section 1:

"(1) Number and Designation. 2,272,729 shares of the Preferred Stock of the Corporation shall be designated as Series D Convertible Preferred Stock ("**Series D Preferred Stock**")."

3. The Amendment of the Certificate of Designations of Series D Convertible Preferred Stock herein has been duly adopted in accordance with the provisions of Section 228 and 242 of the Delaware General Corporation Law.

Executed this 27th day of December, 2002.

/s/ Grace U. Shin
Grace U. Shin, Assistant Corporate Secretary, Vice President, Legal Affairs and Corporate Counsel

CERTIFICATE OF AMENDMENT OF THE
CERTIFICATE OF INCORPORATION
OF
FIBROGEN, INC.

It is hereby certified that:

1. The name of the corporation (hereinafter called the "Corporation") is FibroGen, Inc.

2. The certificate of incorporation of the Corporation is hereby amended by striking out the first paragraph of Article Fourth and substituting in lieu of said paragraph the following new paragraph:

"FOURTH. The total number of shares of all classes of capital stock which the corporation shall have the authority to issue is Two Hundred Thirty Million (230,000,000) shares, comprised of One Hundred Fifty Million (150,000,000) shares of Common Stock with a par value of One Cent ($.01) per share (the "Common Stock") and Eighty Million (80,000,000) shares of Preferred Stock with a par value of One Cent ($.01) per share (the "Preferred Stock")."

3. The Amendment of the certificate of incorporation herein has been duly adopted in accordance with the provisions of Section 228 and 242 of the Delaware General Corporation Law.

Executed this 3rd day of March, 2003.

/s/ Grace U. Shin

Grace U. Shin, Vice President, Legal Affairs and Corporate Counsel

CERTIFICATE OF AMENDMENT OF THE
CERTIFICATE OF DESIGNATION OF POWERS, PREFERENCES AND PRIVILEGES
OF
SERIES E PREFERRED STOCK
OF
FEBROGEN, INC.

It is hereby certified that:

1. The name of the corporation (hereinafter called the "Corporation") is FIBROGEN, Inc.

2. The Certificate of Designation of Powers, Preferences and Privileges of Series E Preferred Stock of the Corporation filed with the Delaware Secretary of State effective May 16, 2000 and amended on June 27, 2002 is hereby amended by striking out clause (a) of Section 7 of Appendix 1 and substituting in lieu of said paragraph the following paragraph:

(a) authorize or issue, or increase or decrease the authorized number of, (other than by redemption or conversion) any shares of capital stock or any other securities convertible into equity securities of the Corporation, in each case ranking (i) on a parity with or senior to the Series E Preferred in rights of liquidation preference, voting or dividends or (ii) senior to the Series E Preferred in redemption rights; provided, that the Corporation may, without such affirmative vote of holders of the Series E Preferred, (1) at any time, authorize, issued and sell up to 4,008,909 shares of Series E Preferred to stockholders of record of the Company and its subsidiaries as of the date of the first sale of Series E Preferred and to Life Sciences venture fund of Japan and (2) at any time after the first anniversary of the date of the first sale of Series E Preferred, (i) authorize, issue and sell up to 3,000,000 shares (in addition to the shares of Series E Preferred set forth in clause (1) above) of Series E Preferred or, in the alternative, (ii) establish, issue and sell shares of capital stock of equal priority to that of the Series E Preferred with an aggregate purchase price of up to $20,000,000;

3. The Amendment of the Certificate of Designation of Powers, Preferences and Privileges of Series E Preferred Stock herein has been duly adopted in accordance with the provisions of Section 228 and 242 of the Delaware General Corporation Law.

Executed this 19th day of February, 2004.

/s/ Julian N. Stern, Secretary
Julian N. Stern, Secretary

CERTIFICATE OF AMENDMENT OF THE
CERTIFICATE OF DESIGNATIONS
OF
SERIES D CONVERTIBLE PREFERRED STOCK
OF
FIBROGEN, INC.

It is hereby certified that:

1. The name of the corporation (hereinafter called the "Corporation") is FibroGen, Inc.

2. The Certificate of Designations of Series D Convertible Preferred Stock of the Corporation filed with the Delaware Secretary of State effective March 31, 1999 and amended on July 26, 2002 and December 27, 2002 is hereby amended by substituting in lieu of Section 1 the following new Section 1:

"(1) Number and Designation. 6,818,183 shares of the Preferred Stock of the Corporation shall be designated as Series D Convertible Preferred Stock ("**Series D Preferred Stock**")."

3. The Amendment of the Certificate of Designations of Series D Convertible Preferred Stock herein has been duly adopted in accordance with the provisions of Section 228 and 242 of the Delaware General Corporation Law.

Executed this 19th day of February, 2004.

/s/ Julian N. Stern, Secretary
Julian N. Stern, Secretary

CERTIFICATE OF DESIGNATION OF POWERS,
PREFERENCES AND RIGHTS OF THE SERIES F PREFERRED STOCK
OF
FIBROGEN, INC.

ADOPTED IN ACCORDANCE WITH THE PROVISIONS OF
SECTION 151 OF THE
DELAWARE GENERAL CORPORATION LAW

FIBROGEN, INC., a Delaware corporation (the "Corporation"), pursuant to Section 151 of the General Corporation Law of the State of Delaware, certifies that:

FIRST: The Board of Directors of the Corporation has duly adopted the resolutions attached hereto as Appendix I providing for the issuance of an additional series of its Preferred Stock to be designated "Series F Preferred Stock" and to consist of 23,380,874 shares.

SECOND: The Certificate of Designation of powers, preferences and rights of the Series A Preferred Stock was filed with the Secretary of the State of Delaware on December 14, 1993; the Certificate of Designation of powers, preferences and rights of the Series B Preferred Stock was filed with the Secretary of the State of Delaware on November 8, 1995 and amended on April 19, 1996 and October 17, 1997; the Certificate of Designation of powers, preferences and rights of the Series C Preferred Stock was filed with the Secretary of the State of Delaware on March 30, 1998; the Certificate of Designation of powers, preferences and rights of the Series D Preferred Stock was filed with the Secretary of the State of Delaware on March 31, 1999 and amended on July 26, 2002, December 27, 2002, and February 19, 2004; the Certificate of Designation of powers, preferences and rights of the Series E Preferred Stock ("the Series E Certificate of Designation") was filed with the Secretary of the State of Delaware on May 12, 2000 and amended on June 27, 2002 and February 19, 2004; and the Certificate of Designation of powers, preferences and rights of the Royalty Acquisition Preferred Stock was filed with the Secretary of the State of Delaware on June 9, 1997 and amended on March 30, 1998.

THIRD: The Certificate of Designation of the Series F Preferred Stock attached hereto as Appendix I has been duly adopted in accordance with the provisions of Section 151 of the General Corporation Law of the State of Delaware by the directors of the Corporation.

IN WITNESS WHEREOF, the Corporation has caused this Certificate to be signed by Thomas B. Neff, its President, and Grace U. Shin, its Assistant Secretary, this 27th day of December 2004.

/s/ Thomas B. Neff
President

ATTEST:

/s/ Grace U. Shin
Assistant Secretary

APPENDIX I

WHEREAS, the Certificate of Incorporation, as amended (the "Restated Certificate") of this Corporation provides for a class of its authorized shares known as preferred stock, comprising 80,000,000 shares, issuable from time to time in one or more series;

WHEREAS, the Board of Directors is authorized to fix or alter the dividend rights, dividend rate, conversion rights, voting rights, rights and terms of redemption (including any sinking fund provisions), redemption price or prices and liquidation preferences of any wholly unissued series of preferred stock, and the number of shares constituting any such series and the designation thereof, or all or any of them;

WHEREAS, the Board of Directors, pursuant to its authority as aforesaid, has previously fixed the powers, preferences and rights of a series of preferred stock designated the "Series A Preferred Stock," consisting of 7,390,000 shares;

WHEREAS, the Board of Directors, pursuant to its authority as aforesaid, has previously fixed the powers, preferences and rights of a series of preferred stock designated the "Series B Preferred Stock," consisting of 14,100,000 shares;

WHEREAS, the Board of Directors, pursuant to its authority as aforesaid, has previously fixed the powers, preferences and rights of a series of preferred stock designated the "Series C Preferred Stock," consisting of 5,000,000 shares;

WHEREAS, the Board of Directors, pursuant to its authority as aforesaid, has previously fixed the powers, preferences and rights of a series of preferred stock designated the "Series D Preferred Stock," consisting of 6,818,183 shares;

WHEREAS, the Board of Directors, pursuant to its authority as aforesaid, has previously fixed the powers, preferences and rights of a series of preferred stock designated the "Series E Preferred Stock," consisting of 12,917,595 shares;

WHEREAS, the Board of Directors, pursuant to its authority as aforesaid, has previously fixed the powers, preferences and rights of a series of preferred stock designated the "Royalty Acquisition Preferred Stock," consisting of 8,000,000 shares; and

WHEREAS, it is now the desire of the Board of Directors, pursuant to its authority as aforesaid, to fix the powers, preferences and rights of a series of preferred stock designated the "Series F Preferred Stock";

NOW, THEREFORE, BE IT RESOLVED that the Board of Directors does hereby provide for the issuance of an additional series of preferred stock of the Corporation, consisting of 23,380,874 shares designated as "Series F Preferred Stock," and does hereby fix and determine the powers, preferences and rights relating to said Series F Preferred Stock as hereinafter set forth.

The powers, preferences and rights granted to the Series F Preferred (as defined below) or the holders thereof are as follows:

1. Designation. The series of Preferred Stock shall be designated the "Series F Preferred Stock" ("Series F Preferred") and shall consist of 23,380,874 shares. The "Series A Preferred Stock" ("Series A Preferred"), the "Series B Preferred Stock" ("Series B Preferred"), the Series C Preferred Stock ("Series C Preferred"), the "Series D Preferred Stock" ("Series D Preferred"), the Series E Preferred Stock ("the Series E Preferred"), the Royalty Acquisition Preferred Stock ("Royalty Acquisition Preferred") and the Series F Preferred and any other series of Preferred Stock authorized by the Board of Directors of this Corporation are hereinafter referred to as "Preferred Stock" or "Preferred."

2. Dividend Rate and Rights.

(a) Dividends. Holders of the Series F Preferred, pari passu with the Series E Preferred and in preference to the holders of Series A Preferred A, Series B Preferred, Series C Preferred, Series D Preferred, Common Stock or any other stock of the Corporation ("Junior Stock"), shall be entitled to receive, when and as declared by the Board of Directors, but only out of funds that are legally available therefor, noncumulative cash dividends at the rate of eight percent (8%) of the "Original Issue Price" per annum on each outstanding share of Series F Preferred (as adjusted for any stock dividends, combinations, splits, reclassifications, recapitalizations and the like with respect to such shares). The Original Issue Price of the Series F Preferred shall be Four Dollars and Fifty-Five Cents ($4.55) per share (which amount shall be subject to adjustment whenever there shall occur a stock split, combination, reclassification or other similar event involving the Series F Preferred).

(b) Conversion of Dividends. In the event of the conversion of any shares of Series F Preferred pursuant to Section 5 hereof, all declared and unpaid dividends on such shares of Series F Preferred will be canceled and no dividends will be payable in respect of such shares of Series F Preferred, but instead the amount of declared but unpaid dividends on such shares of Series F Preferred will be taken into account in determining the number of shares of Common Stock into which such shares of Series F Preferred are convertible, as provided in Section 5 hereof.

(c) Dividends in Kind. In the event the Corporation shall make or issue, or shall fix a record date for the determination of holders of Junior Stock entitled to receive, a dividend or other distribution with respect to the Junior Stock payable in (i) securities other than shares of Common Stock of the Corporation or (ii) assets, then and in each such event the holders of Series F Preferred, pari passu with the holders of Series E Preferred, shall receive, at the same time such distribution is made with respect to Junior Stock, the number of securities or such other assets of the Corporation which they would have received had their Series F Preferred been converted into Common Stock immediately prior to the record date for determining holders of Junior Stock entitled to receive such distribution.

3. Liquidation, Dissolution or Winding Up.

(a) Treatment at Liquidation, Dissolution or Winding Up.

(1) In the event of any liquidation, dissolution, merger (where a change of control occurs), sale of all or substantially all of the assets of the Corporation, or winding up of the Corporation, whether voluntary or involuntary, (any of such events referred to herein as a "Liquidity Event") before any distribution may be made with respect to the Junior Stock, holders of each share of Series F Preferred and holders of each share of Series E Preferred shall be entitled to be paid out of the assets of the Corporation available for distribution to holders of the Corporation's capital stock of all classes, whether such assets are capital, surplus, or capital earnings, an amount equal to the product of the number of shares held by such holder and the Original Issue Price of each such series (which amount shall be subject to equitable adjustment whenever there shall occur a stock dividend, combination, split, reclassification, recapitalization or other similar event involving the Series E Preferred and Series E Preferred) plus all declared and unpaid dividends thereon (collectively, the "Liquidation Amount"). If the assets of the Corporation available for distribution to its stockholders shall be insufficient to pay the holders of shares of Series F Preferred and holders of shares of Series E Preferred the full amount of the Liquidation Amount to which they shall be entitled, the holders of shares of Series F Preferred and holders of shares of Series E Preferred shall share ratably on a pro rata basis calculated upon the Original Issue Price of each such share of Series F Preferred or Series E Preferred (as defined in the "the Series E Certificate of Designation") in any distribution of assets according to the amounts which would be payable with respect to the Series F Preferred and holders of shares of Series E Preferred held by them upon such distribution if all amounts payable on or with respect to said shares were paid in full.

(2) Following any Reorganization described in Section 3(b) below, and upon completion of the distribution required by Section 3(a)(1) above, the remaining assets of the Corporation available for distribution to stockholders shall be distributed pursuant to Section 3(a)(3) below. In all other Liquidity Events, upon completion of the distribution required by Section 3(a)(1) above, the remaining assets of the Corporation available for distribution to stockholders shall be distributed to the holders of the Preferred Stock (other than the Series F Preferred and the Series E Preferred), in accordance with the respective Certificates of Designation of Powers, Preferences and Rights of such series of Preferred Stock, or the Certificate of Incorporation, as amended, as applicable.

(3) Upon completion of the distribution required by Section 3(a)(1) above, and Section 3(a)(2) above if applicable, the remaining assets of the

Corporation available for distribution shall be distributed to the holders of Common Stock and Preferred Stock (other than the Series E Preferred and the Series F Preferred) on an as converted to Common Stock basis, until each of such holders receives with respect to each Common Stock share equivalent up to, but not more than, the amount paid to with respect to each share of Series F Preferred pursuant to Section 3(a)(1) above. If the assets of the Corporation are not adequate to pay the amounts set forth in this Section 3(a)(3), the assets shall be distributed ratably amongst the holders of capital stock entitled to such distribution, on an as-converted to common stock basis.

(4) Upon completion of the distribution required by Sections 3(a)(1), (2) and (3) above, the remaining assets of the Corporation available for distribution to stockholders shall be distributed to the holders of the Preferred Stock and the holders of the Common Stock on a pro-rata basis assuming that each share of Preferred Stock has been converted into Common Stock.

(b) Treatment of Reorganizations. Any Reorganization (as such term is defined in Section 5(0), shall be regarded as a liquidation, dissolution or winding up of the affairs of the Corporation within the meaning of this Section 3; provided, however, that each holder of Series F Preferred shall have the right to elect the benefits of the provisions of Section 5(0 hereof, if applicable, in lieu of receiving payment of amounts payable upon liquidation, dissolution or winding up of the Corporation pursuant to this Section 3.

(c) Distributions in Cash. The Liquidation Amount shall in all events be paid in cash; provided, however, that if the Liquidation Amount is payable in connection with a Reorganization, then each holder of the Series F Preferred may, at its election, receive payment of the Liquidation Amount in the same form of consideration as is payable with respect to the Junior Stock. Wherever a distribution provided for in this Section 3 is payable in property other than cash, the value of such distribution shall be the fair market value of such property as determined in good faith by the Corporation's Board of Directors.

4. Voting Power. Except as otherwise expressly provided in Section 7 hereof, or as required by law, each holder of Series F Preferred shall be entitled to vote on all matters and shall be entitled to that number of votes equal to the largest number of whole shares of Common Stock into which such holder's shares of Series F Preferred could be converted, pursuant to the provisions of Section 5 hereof, at the record date for the determination of stockholders entitled to vote on such matter or, if no such record date is established, at the date such vote is taken or any written consent of stockholder is solicited. Except as otherwise expressly provided herein or as required by law, the holders of shares of Series F Preferred and Common Stock shall vote together as a single class on all matters. Fractional votes shall not, however, be permitted and any fractional voting rights (after aggregating all shares into which shares of Series F Preferred held

by each holder could be converted) shall be rounded to the nearest whole number (with one-half being rounded upward).

5. Conversion into Common Stock. The holders of the Series F Preferred shall have the following rights with respect to the conversion of the Series F Preferred into shares of Common Stock (the "Conversion Rights"):

(a) General. Subject to and in compliance with the provisions of this Section 5, any share of the Series F Preferred may, at the option of the holder, be converted at any time into fully paid and non-assessable shares of Common Stock of the Corporation. The number of shares of Common Stock to which a holder of Series F Preferred shall be entitled upon conversion shall be the product obtained by multiplying the Applicable Conversion Rate (determined as provided in Section 5(b)) by the number of shares of Series F Preferred being converted.

(b) Applicable Conversion Rate. The conversion rate in effect at any time (the "Applicable Conversion Rate") shall be the quotient obtained by dividing the Original Issue Price by the Applicable Conversion Value, calculated as provided in Section 5(c).

(c) Applicable Conversion Value. The Applicable Conversion Value shall be the Original Issue Price, except that such amount shall be adjusted from time to time in accordance with Section 5(d).

(d) Adjustments to Applicable Conversion Values.

(1) Conversion Events.

(A) Upon Sale of Common Stock. If the Corporation shall, while there are any shares of Series F Preferred outstanding, issue or sell (or in accordance with Section 5(d)(1)(B) below is deemed to have issued or sold) shares of its Common Stock without consideration or at a price per share less than the Applicable Conversion Value in effect immediately prior to such issuance or sale, then in each such case such Applicable Conversion Value for the Series F Preferred, upon each such issuance or sale, except as hereinafter provided, shall be lowered so as to be equal to an amount determined by multiplying the Applicable Conversion Values by a fraction;

(i) the numerator of which shall be (a) the number of shares of Common Stock outstanding immediately prior to the issuance of such additional shares of Common Stock, plus (b) the number of shares of Common Stock which the net aggregate consideration, if any, received or to be received by the Corporation (in accordance with the Net Consideration Per Share in the case of warrants, options or

any other rights with respect to convertible or exchangeable securities) for the total number of such additional shares of Common Stock so issued would purchase at the Applicable Conversion Value in effect immediately prior to such issuance, and

(ii) the denominator of which shall be (a) the number of shares of Common Stock outstanding immediately prior to the issuance of such additional shares of Common Stock plus (b) the number of such additional shares of Common Stock so issued;

provided that for the purpose of clause (i) and (ii) of this Subsection 5(d)(1)(A), all shares of Common Stock issuable upon conversion of the outstanding shares of Preferred Stock and all shares of Common Stock issuable upon exercise of outstanding options, warrants and other convertible securities shall be deemed to be outstanding.

(B) Upon Issuance of Warrants, Options and Rights to Common Stock.

(i) For the purpose of this Section 5(d)(1), the issuance of any warrants, options, subscriptions, or purchase rights with respect to shares of Common Stock and the issuance of any securities convertible into or exchangeable for shares of Common Stock (or the issuance of any warrants, options or any rights with respect to such convertible or exchangeable securities) shall be deemed an issuance of such Common Stock at such time if the Net Consideration Per Share (as hereinafter determined) which may be received by the Corporation for such Common Stock shall be less than the Applicable Conversion Value at the time of such issuance. Any obligation, agreement, or undertaking to issue warrants, options, subscriptions, or purchase rights at any time in the future shall be deemed to be an issuance at the time such obligation, agreement or undertaking is made or arises. No adjustment of the Applicable Conversion Value shall be made under this Section 5(d)(I) upon the issuance of any shares of Common Stock which are issued pursuant to the exercise of any warrants, options, subscriptions, or purchase rights or pursuant to the exercise of any conversion or exchange rights in any convertible securities if any adjustment shall previously have been made or deemed not required hereunder, upon the issuance of any such warrants, options, or subscription or purchase rights or upon the issuance of any convertible securities (or upon the

issuance of any warrants, options or any rights therefor) as above provided.

(ii) Should the Net Consideration Per Share of any such warrants, options, subscriptions, or purchase rights or convertible securities be decreased from time to time (other than as a result of a stock split, stock dividend or other similar event), then, upon the effectiveness of each such change, the Applicable Conversion Value shall be adjusted to such Applicable Conversion Value as would have obtained (1) had the adjustments made upon the issuance of such warrants, options, rights, or convertible securities been made upon the basis of the decreased Net Consideration per share of such securities, and (2) had adjustments made to the Applicable Conversion Value since the date of issuance of such securities been made to the Applicable Conversion Value as adjusted pursuant to (1) above. Any adjustment of the Applicable Conversion Value with respect to this Section 5(d)(1)(B) which relates to warrants, options, subscriptions, purchase rights or convertible securities with respect to shares of Common Stock shall be disregarded if, as, when and to the extent such warranties, options, subscriptions, purchase rights or convertible securities expire or are cancelled without being exercised or converted, so that the Applicable Conversion Value effective immediately upon such cancellation or expiration shall be equal to the Applicable Conversion Value in effect at the time of the issuance of the expired or cancelled warrants, options, subscriptions, purchase rights, or convertible securities with such additional adjustments as would have been made to all Applicable Conversion Value had the expired or cancelled warrants, options, subscriptions, purchase rights or convertible securities not been issued.

For purposes of this paragraph, the “Net Consideration Per Share” which may be received by the Corporation shall be determined as follows:

(a) The “Net Consideration Per Share” shall mean the amount equal to the total amount of consideration, if any, received by the Corporation for the issuance of such warrants, options, subscriptions, or other purchase rights or convertible or exchangeable securities, plus the minimum amount of consideration, if any, payable to the Corporation upon exercise or conversion thereof, divided by the

aggregate number of shares of Common Stock that would be issued if all such warrants, options, subscriptions, or other purchase rights or convertible or exchangeable securities were exercised, exchanged, or converted.

(b) The "Net Consideration Per Share" which may be received by the Corporation shall be determined in each instance as of the date of issuance of warrants, options, subscriptions, or other purchase rights or convertible or exchangeable securities without giving effect to any possible future upward price adjustments or rate adjustments which may be applicable with respect to such warrants, options, subscriptions, or other purchase rights or convertible exchangeable securities.

(C) Stock Dividends. In the event the Corporation shall make or issue a dividend or other distribution payable in Common Stock or securities of the Corporation convertible into or otherwise exchangeable for the Common Stock of the Corporation, then such Common Stock or other securities issued in payment of such dividend shall be deemed to have been issued without consideration (except for dividends payable in shares of Common Stock payable pro rata to holders of Series F Preferred and to holders of any other class of stock).

(D) Consideration Other than Cash. For purposes of this Section 5(d)(1), if a part or all of the consideration received by the Corporation in connection with the issuance of shares of the Common Stock or the issuance of any of the securities described in this Section 5(d) consists of property other than cash, such consideration shall be deemed to have a fair market value as is reasonably determined in good faith by the Board of Directors of the Corporation.

(E) Exceptions. This Section 5(d)(1) shall not apply under any of the circumstances that would constitute an Extraordinary Common Stock Event (as hereinafter defined in Section 5(d)(2)). Further, the provisions of this Section 5(d) shall not apply to (i) shares issued upon conversion of Preferred Stock, (ii) Common Stock and/or bona fide options (and the shares issuable upon exercise thereof) issued to employees, directors and consultants of the Corporation pursuant to written stock option or stock purchase plans or arrangements that have been approved by the stockholders of the Corporation (within one year of the date of adoption), or (iii) shares issued in connection with the exercise of convertible securities, warrants or options or other contractual obligations in

connection with the rollup of Skin Sciences, Inc. into the Corporation, outstanding as of the date of the first sale of Series F Preferred.

(2) Upon Extraordinary Common Stock Event. Upon the happening of an Extraordinary Common Stock Event (as hereinafter defined), the Applicable Conversion Value for the Series F Preferred shall, simultaneously with the happening of such Extraordinary Common Stock Event, be adjusted by multiplying the then effective Applicable Conversion Value with respect to the Series F Preferred by a fraction, the numerator of which shall be the number of shares of Common Stock outstanding immediately prior to such Extraordinary Common Stock Event and the denominator of which shall be the number of shares of Common Stock outstanding immediately after such Extraordinary Common Stock Event, and the product so obtained shall thereafter be the Applicable Conversion Value. The Applicable Conversion Value for the Series F Preferred shall be readjusted in the same manner upon the happening of any successive Extraordinary Common Stock Event or Events.

"Extraordinary Common Stock Event" shall mean (i) the issue of additional shares of Common Stock as a dividend or other distribution on outstanding Common Stock or on any class or series of preferred stock, unless made pro rata to holders of Series F Preferred, (ii) a subdivision of outstanding shares of Common Stock into a greater number of shares of Common Stock, or (iii) a combination of outstanding shares of the Common Stock into a smaller number of shares of Common Stock.

(e) Capital Reorganization or Reclassification. If the Common Stock issuable upon the conversion of the Series F Preferred shall be changed into the same or different number of shares of any class or classes of stock, whether by capital reorganization, reclassification or otherwise (other than a subdivision or combination of shares or stock dividend or distribution provided for elsewhere in this Section 5 or by a Reorganization), then and in each such event, the holder of each share of Series F Preferred shall have the right thereafter to convert such share into the kind and amount of shares of stock and other securities and property receivable upon such capital reorganization, reclassification or other change by holders of the number of shares of Common Stock into which such shares of Series F Preferred might have been converted immediately prior to such capital reorganization, reclassification or other change.

(f) Capital Reorganization, Merger or Sale of Assets. If at any time or from time to time there shall be a capital reorganization of the Common Stock (other than a subdivision, combination, reclassification or exchange of shares provided for

elsewhere in this Section 5) or a merger or consolidation of the Corporation with or into another corporation or other entity or person (other than the merger of a wholly or majority owned subsidiary into the Corporation), or any other corporate reorganization, in which the stockholders of the Corporation immediately prior to such consolidation, merger or reorganization, own less than fifty percent (50%) of the Corporation's voting power immediately after such consolidation, merger or reorganization, or the sale of all or substantially all of the Corporation's properties and assets to any other person, or the sale of a majority of the voting securities of the Corporation in one transaction or a series of related transactions (any of which events is herein referred to as a "Reorganization") then as a part of such Reorganization, provision shall be made so that the holders of the Series F Preferred shall thereafter be entitled to receive upon conversion of the Series F Preferred, the number of shares of stock or other securities or property of the Corporation, or of the successor corporation resulting from such Reorganization, to which such holder would have been entitled if such holder had converted its shares of Series F Preferred immediately prior to such Reorganization. In any such case, appropriate adjustment shall be made in the application of the provisions of this Section 5 with respect to the rights of the holders of the Series F Preferred after the Reorganization, to the end that the provisions of this Section 5 (including adjustment of the Applicable Conversion Value then in effect and the number of shares issuable upon conversion of the Series F Preferred) shall be applicable after that event in as nearly equivalent a manner as may be practicable.

Upon the occurrence of a Reorganization, under circumstances which make the preceding paragraph applicable, each holder of Series F Preferred shall have the option of electing treatment for his shares of Series F Preferred under either this Section 5(f) or Section 3 hereof, notice of which election shall be submitted in writing to the Corporation at its principal offices no later than ten (10) business days before the effective date of such event.

(g) Certificate as to Adjustments; Notice by Corporation. In each case of an adjustment or readjustment of the Applicable Conversion Rate, the Corporation, at its expense, will furnish each holder of Preferred Stock with a certificate, executed by the president and chief financial officer (or in the absence of a person designated as the chief financial officer, by the treasurer) showing such adjustment or readjustment, and stating in detail the facts upon which such adjustment or readjustment is based.

(h) Exercise of Conversion Privilege. To exercise its conversion privilege, a holder of Series F Preferred shall surrender the certificate or certificates representing the shares being converted to the Corporation at its principal office, and shall give written notice to the Corporation at that office that such holder elects to convert such shares. Such notice shall also state the name or names (with address or addresses) in which the certificate or certificates for shares of Common Stock issuable upon such conversion shall be issued. The certificate or certificates for shares of Series F Preferred surrendered for conversion shall be accompanied by

proper assignment thereof to the Corporation or in blank. The date when such written notice is received by the Corporation, together with the certificate or certificates representing the shares of Series F Preferred being converted, shall be the "Conversion Date." As promptly as practicable after the Conversion Date, the Corporation shall issue and shall deliver to the holder of the shares of Series F Preferred being converted, or on its written order, such certificate or certificates as it may request for the number of whole shares of Common Stock issuable upon conversion of such shares of Series F Preferred in accordance with the provisions of this Section 5, and cash, as provided in Section 5(i), in respect of any fraction of a share of Common Stock issuable upon such conversion. Such conversion shall be deemed to have been effected immediately prior to the close of business on the Conversion Date, and at such time the rights of the holder as holder of the converted shares of Series F Preferred shall cease and the person or persons in whose name or names any certificate or certificates for shares of Common Stock shall be issuable upon such conversion shall be deemed to have become the holder or holders of record of the shares of Common Stock represented thereby. The Corporation shall pay any taxes payable with respect to the issuance of Common Stock upon conversion of the Series F Preferred, other than any taxes payable with respect to income by the holders thereof.

(i) Cash in Lieu of Fractional Shares. The Corporation may, if it so elects, issue fractional shares of Common Stock or script representing fractional shares upon the conversion of shares of Series F Preferred. If the Corporation does not elect to issue fractional shares, the Corporation shall pay to the holder of the shares of Series F Preferred which were converted a cash adjustment in respect of such fractional shares in an amount equal to the same fraction of the market price per share of the Common Stock (as determined in a reasonable manner prescribed by the Board of Directors) at the close of business on the Conversion Date. The determination as to whether or not any fractional shares are issuable shall be based upon the total number of shares of Series F Preferred being converted at any one time by any holder thereof, not upon each share of Series F Preferred being converted.

(j) Partial Conversion. In the event some but not all of the shares of Series F Preferred represented by a certificate or certificates surrendered by a holder are converted, the Corporation shall execute and deliver to or on the order of the holder, at the expense of the Corporation, a new certificate representing the number of shares of Series F Preferred which were not converted.

(k) Reservation of Common Stock. The Corporation shall at all times reserve and keep available out of its authorized but unissued shares of Common Stock, solely for the purpose of effecting the conversion of the shares of the Series F Preferred, such number of its shares of Common Stock as shall, from time to time, be sufficient to effect the conversion of all outstanding shares of the Series F Preferred, and if at any time the number of authorized but unissued shares of Common Stock shall not be sufficient to effect the conversion of all then

outstanding shares of the Series F Preferred, the Corporation shall take such corporate action as may be necessary to increase its authorized but unissued shares of Common Stock to such number of shares as shall be sufficient for such purpose.

(l) Minimum Adjustment. Any provision of this Section 5 to the contrary notwithstanding, no adjustment in the Applicable Conversion Value shall be made if the amount of such adjustment would be less than 1% of the Applicable Conversion Value then in effect, but any such amount shall be carried forward and an adjustment with respect thereto shall be made at the time of and together with any subsequent adjustment which, together with all amounts so carried forward, aggregate 1% or more of the Applicable Conversion Value then in effect.

(m) Mandatory Conversion. Each share of Series F Preferred shall automatically be converted into shares of Common Stock, based on the then-effective Applicable Conversion Rate, as applicable, (A) at any time upon the affirmative election of the holders of at least fifty percent (50%) of the outstanding shares of the Series F Preferred voting as a single class, or (B) immediately upon (1) the closing of a Qualified Public Offering (as herein after defined). For purposes hereof, the term "Qualified Public Offering" shall mean an underwritten public offering pursuant to an effective registration statement under the Securities Act of 1933, as amended (the "Act"), covering the offer and sale of the Corporation's securities in which (i) the per share price is at least one hundred twenty five percent (125%) of the Original Issue Price (as adjusted for stock splits, etc.) and (ii) the gross cash proceeds to the Corporation (before underwriting discounts, commissions and fees) are at least Fifty Million Dollars ($50,000,000) and (2) listing of the shares of Common Stock of the Corporation on the New York Stock Exchange, American Stock Exchange, NASDAQ National Market or NASDAQ Small Cap Market. Holders of shares subject to conversion shall deliver to the Corporation at its principal office (or such other office or agency as the Corporation may designate by notice in writing) during its usual business hours, the certificate or certificates for shares of Series F Preferred being converted, and the Corporation shall issue and deliver to such holders certificates for the number of shares of Common Stock to which such holders are entitled. Until such time as holders of shares of Series F Preferred shall surrender those certificates therefor as provided above, such certificates shall be deemed to represent the shares of Common Stock to which the holders shall be entitled upon the surrender thereof.

6. No Reissuance of Preferred Stock. No share of Series F Preferred acquired by the Corporation by reason of redemption, purchase, conversion or otherwise shall be reissued, and all such shares shall be cancelled, retired and eliminated from the shares that the Corporation shall be authorized to issue. The Corporation may from time to time take such appropriate corporate action as may be necessary to reduce the authorized number of shares of the Series F Preferred accordingly.

7. Restrictions and Limitations. Except as expressly provided herein or as required by law, so long as any shares of Series F Preferred remain outstanding, the Corporation shall not, without the approval by vote or written consent by the holders of at least a majority of the then outstanding shares of Series F Preferred, voting as a separate class:

(a) authorize or issue, or increase or decrease the authorized number of, (other than by redemption or conversion) any shares of Common Stock or Preferred Stock or shares of any new class or series of stock or any other securities convertible into equity securities of the Corporation ranking (i) on a parity with or senior to the Series F Preferred in liquidation preference, voting or dividends or (ii) senior to the Series F Preferred in rights of redemption; provided, that, in addition to the shares of Series F Preferred currently authorized for issuance, the Corporation may, without such affirmative vote of holders of the Series F Preferred, authorize, issue and sell up to an additional 2,338,087 shares of Series F Preferred at any time;

(b) redeem or repurchase any capital stock or pay dividends or other distributions with respect to capital stock of the Corporation (except for acquisitions of Common Stock by the Corporation pursuant to agreements which permit the Corporation to repurchase such shares upon termination of services to the Corporation or in exercise of the Corporation's right of first refusal upon a proposed transfer);

(c) take any action or agreement by the Corporation or its stockholders regarding a Reorganization in which the consideration paid or proposed to be paid to the Corporation or the holders of capital stock of the Corporation implies a price or value per share of the Series F Preferred less than the Liquidation Amount;

(d) take any action or knowingly fail to take any action that would result in or effectuate the liquidation, dissolution or winding up of the Corporation; or

(e) effectuate any amendment, alteration, or repeal of any provision of the Certificate of Incorporation, as amended, or the Bylaws of the Company that alters or changes the voting powers, preferences, or other special rights or privileges, qualifications, limitations, or restrictions of the Series F Preferred.

8. No Dilution or Impairment. Without the consent of the holders of the then outstanding Series F Preferred, as required under Section 7, the Corporation shall not amend its Certificate of Incorporation or participate in any reorganization, transfer of assets, consolidation, merger, dissolution, issue or sale of securities or take any other voluntary action, for the purpose of avoiding or seeking to avoid the observance or performance of any of the terms to be observed or performed hereunder by the Corporation, but shall at all times in good faith assist in carrying out all such action as may be reasonably necessary or appropriate in order to protect the conversion rights of the holders of the Series F Preferred against dilution or other impairment.

9. Notices of Record Date. In the event of

(a) any taking by the Corporation of a record of the holders of any class of securities for the purpose of determining the holders thereof who are entitled to receive any dividend or other distribution, or any right to subscribe for, purchase or otherwise acquire any shares of stock of any class or any other securities or property, or to receive any other right, or

(b) any capital reorganization of the Corporation, any reclassification or recapitalization of the capital stock of the Corporation, any merger of the Corporation, or any transfer of all or substantially all of the assets of the Corporation to any other corporation, or any other entity or person, or

(c) any voluntary or involuntary dissolution, liquidation or winding up of the Corporation,

then and in each such event the Corporation shall mail or cause to be mailed to each holder of Series F Preferred a notice specifying (i) the date on which any such record is to be taken for the purpose of such dividend, distribution or right and a description of such dividend, distribution, or right, (ii) the date on which any such reorganization, reclassification, recapitalization, transfer, merger, dissolution, liquidation or winding up is expected to become effective and (iii) the time, if any, that is to be fixed, as to when the holders of record of Common Stock (or other securities) shall be entitled to exchange their shares of Common Stock (or other securities) shall be entitled to exchange their shares of Common Stock (or other securities) for securities or other property deliverable upon such reorganization, reclassification, recapitalization, transfer, merger, dissolution, liquidation or winding up. Such notice shall be mailed at least ten (10) business days prior to the date specified in such notice on which such action is to be taken.

CERTIFICATE OF AMENDMENT OF THE
CERTIFICATE OF DESIGNATIONS
OF
SERIES F CONVERTIBLE PREFERRED STOCK
OF
FIBROGEN, INC.

It is hereby certified that

1. The name of the corporation (hereinafter called the "Corporation") is FibroGen,

2. The Certificate of Designations of Series F Convertible Preferred Stock of the Corporation filed with the Delaware Secretary of State effective December 27, 2004, is hereby amended by substituting in lieu of Section 1 the following new Section 1:

"(1) Number and Designation. 23,723,333 shares of the Preferred Stock of the Corporation shall be designated as Series F convertible Preferred Stock ("**Series F, Preferred Stock**")."

3. The Amendment of the Certificate of Designations of Series F Convertible Preferred Stock herein has been duly adopted in accordance with the provisions of Section 228 and 242 of the Delaware General Corporation Law.

Executed this 31st day of January, 2005.

/s/ Grace U. Shin, Assistant Secretary
Grace U. Shin, Assistant Secretary

CERTIFICATE OF AMENDMENT OF THE
CERTIFICATE OF DESIGNATIONS
OF
SERIES F CONVERTIBLE PREFERRED STOCK
OF
FIBROGEN, INC.

It is hereby certified that:

1. The name of the corporation (hereinafter called the "Corporation") is FibroGen, Inc.

2. The Certificate of Designations of Series F Convertible Preferred Stock of the Corporation filed with the Delaware Secretary of State effective December 27, 2004, and amended on January 31, 2005, is hereby amended by substituting in lieu of Section 1 the following new Section 1:

"(1) Designation. The series of Preferred Stock shall be designated the "Series F Preferred Stock" ("Series F Preferred") and shall consist of 25,718,961 shares. The "Series A Preferred Stock" ("Series A Preferred"), the "Series B Preferred Stock" ("Series B Preferred"), the Series C Preferred Stock ("Series C Preferred"), the "Series D Preferred Stock" ("Series D Preferred"), the Series E Preferred Stock ("the Series E Preferred"), the Royalty Acquisition Preferred Stock ("Royalty Acquisition Preferred") and the Series F Preferred and any other series of Preferred Stock authorized by the Board of Directors of this Corporation are hereinafter referred to as "Preferred Stock" or "Preferred."

3. The Amendment of the Certificate of Designations of Series F Convertible Preferred Stock herein has been duly adopted in accordance with the provisions of Section 228 and 242 of the Delaware General Corporation Law.

Executed this 7th day of November, 2005.

/s/ Julian Stern
Julian Stern, Secretary

CERTIFICATE OF AMENDMENT OF THE
CERTIFICATE OF INCORPORATION
OF
FIBROGEN, INC.

It is hereby certified that:

1. The name of the corporation (hereinafter called the "Corporation") is FibroGen, Inc.

2. The certificate of incorporation of the Corporation is hereby amended by striking out the first paragraph of Article Fourth and substituting in lieu of said paragraph the following new paragraph:

"FOURTH. The total number of shares of all classes of capital stock which the corporation shall have the authority to issue is Two Hundred Thirty Six Million Six Hundred Sixty Six Thousand Six Hundred Sixty Seven (236,666,667) shares, comprised of One Hundred Fifty Million (150,000,000) shares of Common Stock with a par value of One Cent ($.01) per share (the "Common Stock") and Eighty Six Million Six Hundred Sixty Six Thousand Six Hundred Sixty Seven (86,666,667) shares of Preferred Stock with a par value of One Cent ($.01) per share (the "Preferred Stock")."

3. The Amendment of the certificate of incorporation herein has been duly adopted in accordance with the provisions of Section 228 and 242 of the Delaware General Corporation Law.

Executed this 20th day of December, 2006.

/s/ Michael Lowenstein
Michael Lowenstein,
Assistant Secretary

CERTIFICATE OF AMENDMENT OF THE
CERTIFICATE OF DESIGNATIONS
OF
ROYALTY ACQUISITION PREFERRED STOCK
OF
FIBROGEN, INC.

It is hereby certified that:

1. The name of the corporation (hereinafter called the "Corporation") is FibroGen, Inc.

2. The Certificate of Designations of Royalty Acquisition Preferred Stock of the Corporation filed with the Delaware Secretary of State (as the Series C Convertible Preferred Certificate of Designation) effective June 19, 1997, as amended on March 30, 1998, is hereby amended by substituting in lieu of Section 1 the following new Section 1:

"(1) Number and Designation. 7,074,357 shares of the Preferred Stock of the Corporation shall be designated as Royalty Acquisition Preferred Stock ("**Royalty Acquisition Preferred Stock**")."

3. The Amendment of the Certificate of Designations of Royalty Acquisition Preferred Stock herein has been duly adopted in accordance with the provisions of Section 228 and 242 of the Delaware General Corporation Law.

Executed this 20th day of December, 2006.

/s/ Julian Stern
Julian Stern, Secretary

CERTIFICATE OF AMENDMENT OF THE
CERTIFICATE OF DESIGNATIONS
OF
SERIES A CONVERTIBLE PREFERRED STOCK
OF
FIBROGEN, INC.

It is hereby certified that:

1. The name of the corporation (hereinafter called the "Corporation") is FibroGen, Inc.

2. The Certificate of Designations of Series A Convertible Preferred Stock of the Corporation filed with the Delaware Secretary of State effective December 14, 1993 is hereby amended by substituting in lieu of Section 1 the following new Section 1:

"(1) Number and Designation. 7,382,500 shares of the Preferred Stock of the Corporation shall be designated as Series A Convertible Preferred Stock ("**Series A Preferred Stock**")."

3. The Amendment of the Certificate of Designations of Series A Convertible Preferred Stock herein has been duly adopted in accordance with the provisions of Section 228 and 242 of the Delaware General Corporation Law.

Executed this 20th day of December, 2006.

/s/ Julian Stern
Julian Stern, Secretary

CERTIFICATE OF AMENDMENT OF THE
CERTIFICATE OF DESIGNATIONS
OF
SERIES B CONVERTIBLE PREFERRED STOCK
OF
FIBROGEN, INC.

It is hereby certified that:

1. The name of the corporation (hereinafter called the "Corporation") is FibroGen, Inc.

2. The Certificate of Designations of Series B Convertible Preferred Stock of the Corporation filed with the Delaware Secretary of State effective November 8, 1995, as amended on October 17, 1997 and April 19, 1996, is hereby amended by substituting in lieu of Section 1 the following new Section 1:

"(1) Number and Designation. 14,036,608 shares of the Preferred Stock of the Corporation shall be designated as Series 13 Convertible Preferred Stock ("**Series B Preferred Stock**")."

3. The Amendment of the Certificate of Designations of Series B Convertible Preferred Stock herein has been duly adopted in accordance with the provisions of Section 228 and 242 of the Delaware General Corporation Law.

Executed this 20th of December, 2006.

/s/ Julian Stern
Julian Stern, Secretary

CERTIFICATE OF AMENDMENT OF THE
CERTIFICATE OF DESIGNATIONS
OF
SERIES C CONVERTIBLE PREFERRED STOCK
OF
FIBROGEN, INC.

It is hereby certified that:

1. The name of the corporation (hereinafter called the "Corporation") is FibroGen, Inc.

2. The Certificate of Designations of Series C Convertible Preferred Stock of the Corporation filed with the Delaware Secretary of State (as the Series D Convertible Preferred Certificate of Designation) effective June 19, 1997, as amended on March 30, 1998 is hereby amended by substituting in lieu of Section 1 the following new Section 1:

"(1) Number and Designation. 3,535,077 shares of the Preferred Stock of the Corporation shall be designated as Series C Convertible Preferred Stock ("**Series C Preferred Stock**")."

3. The Amendment of the Certificate of Designations of Series C Convertible Preferred Stock herein has been duly adopted in accordance with the provisions of Section 228 and 242 of the Delaware General Corporation Law.

Executed this 20th day of December, 2006.

/s/ Julian Stern, Secretary
Julian Stern, Secretary

CERTIFICATE OF AMENDMENT OF THE
CERTIFICATE OF DESIGNATIONS
OF
SERIES D CONVERTIBLE PREFERRED STOCK
OF
FIBROGEN, INC.

It is hereby certified that:

1. The name of the corporation (hereinafter called the "Corporation") is FibroGen, Inc.

2. The Certificate of Designations of Series D Convertible Preferred Stock of the Corporation filed with the Delaware Secretary of State effective March 31, 1999 and amended on February 19, 2004, July 26, 2002 and December 27, 2002 is hereby amended by substituting in lieu of Section 1 the following new Section 1:

"(1) Number and Designation. 7,098,128 shares of the Preferred Stock of the Corporation shall be designated as Series D Convertible Preferred Stock ("Series D Preferred Stock")."

3. The Amendment of the Certificate of Designations of Series D Convertible Preferred Stock herein has been duly adopted in accordance with the provisions of Section 228 and 242 of the Delaware General Corporation Law.

Executed this 20th day of December, 2006.

/s/ Julian Stern
Julian Stern, Secretary

CERTIFICATE OF AMENDMENT OF THE
CERTIFICATE OF DESIGNATION OF POWERS,
PREFERENCES AND RIGHTS OF THE SERIES E PREFERRED STOCK
OF
FIBROGEN, INC.

It is hereby certified that:

1. The name of the corporation (hereinafter called the "Corporation") is FibroGen, Inc.

2. The Certificate of Designations of Series E Preferred Stock of the Corporation filed with the Delaware Secretary of State effective May 1, 2000, as amended on June 19, 2004 and June 27, 2002, is hereby amended by substituting in lieu of Section 1 the following new Section 1:

"Designation. The series of Preferred Stock shall be designated the "Series E Preferred Stock" ("Series E Preferred") and shall consist of 12,621,221 shares. The "Series A Preferred Stock" ("Series A Preferred"), the "Series B Preferred Stock" ("Series B Preferred"), the Series C Preferred Stock ("Series C Preferred"), the "Series D Preferred Stock" ("Series D Preferred"), the Royalty Acquisition Preferred Stock ("Royalty Acquisition Preferred") and the Series E Preferred and any other series of Preferred Stock authorized by the Board of Directors of this Corporation are hereinafter referred to as "Preferred Stock" or "Preferred.""

3. The Amendment of the Certificate of Designations of Royalty Acquisition Preferred Stock herein has been duly adopted in accordance with the provisions of Section 228 and 242 of the Delaware General Corporation Law.

Executed this 20th day of December, 2006.

/s/ Julian Stern
Julian Stern, Secretary

CERTIFICATE OF DESIGNATIONS
OF
SERIES G-1 CONVERTIBLE PREFERRED STOCK
OF
FIBROGEN, INC.

FIBROGEN, INC., a Delaware corporation (the "**Corporation**"), pursuant to the provisions of Section 151 of the General Corporation Law of the State of Delaware, does hereby make this Certificate of Designations and does hereby state and certify that pursuant to the authority expressly vested in the Board of Directors of the Corporation by the Certificate of Incorporation of the Corporation, the Board of Directors has duly adopted the following resolutions:

RESOLVED, that, pursuant to Article FOURTH of the Certificate of Incorporation, which authorizes 86,666,667 shares of preferred stock, $.01 par value ("**Preferred Stock**"), the Board of Directors hereby fixes the powers, designations, preferences and relative, participating, optional and other rights, and the qualifications, limitations and restrictions, of a series of Preferred Stock.

RESOLVED, that each share of such series of Preferred Stock shall rank equally in all respects and shall be subject to the following provisions:

(1) Number and Designation. 9,199,761 shares of the Preferred Stock of the Corporation shall be designated as Series G-1 Convertible Preferred Stock ("**Series G-1 Preferred Stock**").

(2) Rank. The Series G-1 Preferred Stock shall, with respect to rights on liquidation, dissolution and winding up, rank prior to all classes of the Corporation's common stock, $.01 par value ("**Common Stock**") and the Royalty Acquisition Preferred Stock. The Series G-1 Preferred Stock shall, with respect to rights on liquidation, dissolution and winding up, rank equally with the Series A Convertible Preferred Stock ("**Series A Preferred Stock**"), the Series B Convertible Preferred Stock ("**Series B Preferred Stock**"), the Series C Convertible Preferred Stock ("Series C Preferred Stock") and the Series D Convertible Preferred Stock ("**Series D Preferred Stock**"). All equity securities of the Corporation to which the Series G-1 Preferred Stock ranks prior (whether with respect to liquidation, dissolution, winding up or otherwise), including the Common Stock, are collectively referred to herein as the "**Junior Securities**." All equity securities of the Corporation with which the Series G-1 Preferred Stock ranks on a parity (whether with respect to liquidation, dissolution, winding up or otherwise), including Series A Preferred Stock, the Series B Convertible Preferred Stock the Series C Preferred Stock and the Series D Preferred Stock, are collectively referred to herein as the "**Parity Securities**." All equity securities of the Corporation to which the Series G-1 Preferred Stock ranks junior (whether with respect to liquidation, dissolution, winding up or otherwise), are collectively referred to herein as the "Senior Securities". The respective definitions of Junior Securities, Parity Securities and Senior Securities shall also include any rights, options or

warrants exercisable for any of the Junior Securities, Parity Securities and Senior Securities, as the case may be. The Series G-1 Preferred Stock shall be subject to the creation of Junior Securities, Parity Securities and Senior Securities.

(3) Dividends. The holders of shares of Series G-1 Preferred Stock shall be entitled to receive, when, as and if declared by the Board of Directors, out of funds legally available for the payment of dividends, to the extent as, on the same basis as, at the same rate as, and contemporaneously with, cash dividends when, as and if declared by the Board of Directors with respect to shares of any Common Stock, the Royalty Acquisition Preferred Stock, or Parity Securities. Such dividends shall be paid to the holders of record at the close of business on the record date specified by the Board of Directors of the Corporation at the time such dividend is declared, provided, however, that such record date shall not be more than 60 days or less than 10 days prior to the applicable dividend payment date.

(4) Conversion.

(a) Each share of Series G-1 Preferred Stock shall be convertible, at the option of the holder thereof except as otherwise provided in paragraph (4) (b) below, at any time after the date of issuance of such share, at the office of the Corporation or any transfer agent for such stock, into such number of fully paid and non-assessable shares (calculated as to each conversion to the nearest 1/100th of a share) of Common Stock as is determined by dividing $7.50 by the Conversion Price (as defined below) applicable to such share, determined as hereinafter provided, in effect on the date the certificate is surrendered for conversion. The price at which shares of Common Stock shall be deliverable upon conversion of shares of Series G-1 Preferred Stock (the "**Conversion Price**") shall initially be $7.50 per share of Common Stock. Such initial Conversion Price shall be adjusted as hereinafter provided.

(b) Notwithstanding anything to the contrary herein, each outstanding share of Series G-1 Preferred stock shall automatically convert upon a public offering of Common Stock if the total aggregate proceeds to the Corporation before underwriting commissions and expenses are at least $10,000,000.

(c) Before any holder of Series G-1 Preferred Stock shall be entitled to receive a certificate or certificates for shares of Common Stock upon conversion, such holder shall surrender the certificate or certificates for the holder's shares of Series G-1 Preferred Stock, duly endorsed, at the office of the Corporation or of any transfer agent for such stock, and, unless such conversion is automatic pursuant to clause (b) above, shall give written notice to the Corporation at such office that such holder elects to convert the same and shall state therein the name or names in which such holder wishes the certificate or certificates for shares of Common Stock to be issued. The Corporation shall, as soon as practicable thereafter, issue and deliver at such office to such holder of Series G-1 Preferred Stock, a certificate or certificates for the number of shares of Common Stock to which such holder shall be entitled as aforesaid. Such conversion shall be deemed to have been made (i) in the case such conversion is automatic pursuant to clause (b) above, upon the effectiveness of the registration statement relating to such offering, and (ii) in all other cases, immediately prior to the close of business on the date of surrender of the shares of Series G-1 Preferred Stock to be converted (in either case, the "Conversion Date"), and the person or persons entitled to receive the shares of Common Stock

issuable upon such conversion shall be treated for all purposes as the record holder or record holders of such shares of Common Stock on such date.

(d) All shares of Series G-1 Preferred Stock which have been converted as herein provided shall no longer be deemed to be outstanding and all rights with respect to such shares, including the rights, if any, to receive notices and to vote, shall forthwith cease and terminate, except only the right of the holders thereof, subject to the provisions of clause (c) of this paragraph (4), to receive shares of Common Stock in exchange therefor.

(e) In case:

(i) the Corporation shall declare a dividend (or any other distribution) on Common Stock payable otherwise than in cash out of its retained earnings; or

(ii) the Corporation shall authorize the granting to the holders of Common Stock of rights or warrants to subscribe for or purchase any shares of capital stock of any class or of any other rights; or

(iii) of any reclassification of the Common Stock (other than a subdivision, split or combination of its outstanding shares of Common Stock), or of any consolidation or merger to which the Corporation is a party and for which approval of any stockholders of the Corporation is required, or of the sale or transfer of all or substantially all of the assets of the Corporation; or

(iv) of the voluntary or involuntary dissolution, liquidation or winding up of the Corporation;

then the Corporation shall cause to be mailed to each holder of shares of Series G-1 Preferred Stock at its address as shown on the books of the Corporation, at least 30 days (or 20 days in any case specified in clause (i) or (ii) above) prior to the applicable record or effective date hereinafter specified, a notice stating (x) the date on which a record is to be taken for the purpose of such dividend, distribution, rights or warrants, or, if a record is not to be taken, the date as of which the holders of Common Stock of record to be entitled to such dividend, distribution, rights or warrants are to be determined, or (y) the date on which such reclassification, liquidation or winding up is expected to become effective, and the date as of which it is expected that holders of Common Stock of record shall be entitled to exchange their shares of Common Stock for securities, cash or other property deliverable upon such reclassification, consolidation, merger, sale, transfer, dissolution, liquidation or winding up.

(f) For the purposes of this paragraph (4), the term “Common Stock” shall mean (i) the class of stock designated as the Common Stock of the Corporation on the date of this Certificate of Designations, and (ii) any other class of common stock, including any class resulting from successive changes or reclassifications of such Common Stock consisting solely of changes in par value or from no par value to par value or from par value to no par value.

(g) No fractional share of Common Stock, or scrip representing a fractional share, shall be issuable upon the conversion of any Series 0-1 Preferred Stock. If a

certificate or certificates representing more than one share of Series G-1 Preferred Stock shall be surrendered for conversion at one time by the same holder, the number of full shares of Common Stock issuable upon conversion thereof shall be computed on the basis of the aggregate number of shares represented by certificates so surrendered. If any fractional interest in a share of Common Stock would be deliverable upon the conversion of any shares of Series G-1 Preferred Stock, the Corporation shall pay, in lieu thereof, in cash the Conversion Price thereof as of the business day immediately preceding the date of such conversion.

(h) Such number of shares of Common Stock as may from time to time be required for such purpose shall be reserved for issuance upon conversion of outstanding shares of Series G-1 Preferred Stock.

(i) If the Corporation shall at any time or from time to time effect a subdivision or stock split of the outstanding Common Stock, the Conversion Price of the Series G-1 Preferred Stock then in effect immediately before that subdivision or stock split shall be proportionately decreased. If the Corporation shall at any time or from time to time combine the outstanding shares of Common Stock, the Conversion Price of the Series G-1 Preferred Stock then in effect immediately before the combination shall be proportionately increased. Any adjustment under this paragraph shall become effective at the close of business on the date the subdivision, stock split or combination, as the case may be, becomes effective.

(j) In the event the Corporation at any time or from time to time shall make or issue, or fix a record date for the determination of holders of Common Stock entitled to receive, a dividend or other distribution payable in additional shares of Common Stock, then and in each such event the Conversion Price of the Series G-1 Preferred Stock then in effect shall be decreased as of the time of such issuance or, in the event such a record date shall have been fixed, as of the close of business on such record date, by multiplying the Conversion Price of the Series G-1 Preferred Stock then in effect by a fraction:

(1) the denominator of which shall be the sum of the total number of shares of Common Stock issued and outstanding immediately prior to the time of such issuance or the close of business on such record date, plus the number of shares of Common Stock issuable in payment of such dividend or distribution, and

(2) the numerator of which shall be the total number of shares of Common Stock issued and outstanding immediately prior to the time of such issuance or the close of business on such record date;

provided, however, if such record date shall have been fixed and such dividend is not fully paid or if such distribution is not fully made on the date fixed therefor, the Conversion Price of Series G-1 Preferred Stock shall be recomputed accordingly as of the close of business on such record date and thereafter the Conversion Price of Series G-1 Preferred Stock shall be adjusted pursuant to this paragraph as of the time of actual payment or issuance of such dividends or distributions.

(k) In the event the Corporation at any time or from time to time shall make or issue, or fix a record date for the determination of holders of Common Stock entitled to receive, a dividend or other distribution payable in securities of the Corporation other than shares

of Common Stock, then and in each such event provision shall be made so that the holders of Series G-1 Preferred Stock shall receive upon conversion thereof in addition to the number of shares of Common Stock receivable thereupon, the amount of such other securities of the Corporation that they would have received had their Series G-1 Preferred Stock been converted into Common Stock on the date, or the record date, of such event and had thereafter, during the period from the date of such event to and including the Conversion Date, retained such securities receivable by them as aforesaid during such period, all subject to further adjustment as provided herein during such period.

(l) If the Common Stock issuable upon the conversion of the Series G- 1 Preferred Stock shall be changed into the same or a different number of shares of any class or classes of stock, whether by capital reorganization, reclassification, exchange, substitution or otherwise, then and in each such event the holder of each such share of Series G-1 Preferred Stock shall have the right thereafter to convert such share into the kind and amount of shares of stock and other securities and property receivable upon such reorganization, reclassification, exchange, substitution or other change, by holders of the number of shares of Common Stock into which such shares of Series G-1 Preferred Stock might have been converted immediately prior to such reorganization, reclassification, exchange, substitution or other change, all subject to further adjustment as provided herein.

(5) Liquidation Preference.

(a) In the event of any voluntary or involuntary liquidation, dissolution or winding up of the affairs of the Corporation, the holders of shares of Series G-1 Preferred Stock then outstanding shall be entitled to be paid out of the assets of the Corporation available for distribution to its shareholders an amount in cash equal to $7.50 for each share outstanding, plus an amount in cash equal to all declared but unpaid dividends thereon to the date fixed for liquidation, dissolution or winding up before any payment shall be made or any assets distributed to the holders of any Junior Securities. If the assets of the Corporation, or the proceeds thereof, are not sufficient to pay in full the liquidation payments payable to the holders of outstanding shares of the Series G-1 Preferred Stock and any Parity Securities, then the holders of all such shares shall share ratably in such distribution of assets, or the proceeds thereof, in accordance with the amount which would have been payable on such distribution if the amounts to which the holders of outstanding shares of Series G-1 Preferred Stock and the holders of outstanding shares of such Parity Securities are entitled were paid in full. Except as provided in this paragraph (5)(a), holders of Series G-1 Preferred Stock shall not be entitled to any distribution in the event of liquidation, dissolution or winding up of the affairs of the Corporation.

(b) For the purposes of this paragraph (5), neither the voluntary sale, conveyance, exchange or transfer (for cash, shares of stock, securities or other consideration) of all or substantially all the property or assets of the Corporation nor the consolidation or merger of the Corporation with or into one or more other corporations shall be deemed to be a liquidation, dissolution or winding up of the Corporation, voluntary or involuntary unless such voluntary sale, conveyance, exchange or transfer, or merger or consolidation, shall be in connection with a plan of liquidation, dissolution or winding up of the Corporation.

(6) Voting. In addition to any voting rights provided by law and to any voting

rights of the holders of the Series G-1 Preferred Stock, as or as part of a separate class or series, pursuant to this Certificate or any provision of the Certificate of Incorporation of the Corporation, the holder of each outstanding share of Series G-1 Preferred Stock shall be entitled to vote on any matter voted on by holders of Common Stock, voting together as a single class with the holders of the Common Stock and any other shares entitled to vote in the ordinary course and shall be entitled to that number of votes equal to the largest number of whole shares of Common Stock into which such holder's shares of Series GI Preferred Stock could be converted, pursuant to the provisions of Section 4 hereof, at the record date for the determination of stockholders entitled to vote on such matter or, if no such record date is established, at the date such vote is taken or any written consent of stockholder is solicited.

(7) Reports. So long as any of the Series G-1 Preferred Stock is outstanding, the Corporation will furnish the holders thereof with the quarterly and annual financial reports, if any, that the Corporation is required to file with the Securities and Exchange Commission pursuant to Section 13 or Section 15(d) of the Securities Exchange Act of 1934.

(8) General Provisions.

(a) The term "**person**" as used herein means any corporation, partnership, trust, organization, association, other entity or individual.

(b) The term "**outstanding**," when used with reference to shares of stock, shall mean issued shares, excluding shares held by the Corporation or any subsidiary of the Corporation.

(c) The headings of the paragraphs, subparagraphs, clauses and subclauses of this Certificate of Designations are for convenience of reference only and shall not define, limit or affect any of the provisions hereof.

IN WITNESS WHEREOF, FIBROGEN, Inc. has caused this Certificate of Designations to be signed and attested by the undersigned this 21st day of December, 2006.

FIBROGEN, INC.

By: /s/ Michael Lowenstein
Michael Lowenstein, Assistant Secretary

CERTIFICATE OF OWNERSHIP

MERGING

Imigen Systems, Inc.

INTO

FibroGen, Inc.

(Subsidiary into parent pursuant to Section 253 of the General Corporation Law of Delaware)

*** * * * * * ***

FibroGen, Inc., a corporation incorporated on the 29th day of September, 1993, pursuant to the provisions of the General Corporate Law of the State of Delaware,

DOES HEREBY CERTIFY:

FIRST: That this corporation owns more than 90% of the capital stock of **Imigen Systems, Inc.**, a corporation incorporated on the 19th day of June, 2002 A.D., pursuant to the provisions of the General Corporate Law of the State of Delaware and that this corporation, by a resolution of its Board of Directors duly adopted at a meeting held on the 7th day of December, 2011 A.D., determined to and did merge into itself said Imigen Systems, Inc., which resolution is in the following words to wit:

WHEREAS this corporation lawfully owns 100% of the outstanding stock of Imigen Systems, Inc., a corporation organized and existing under the laws of the state of Delaware, and

WHEREAS this corporation desires to merge into itself the said Imigen Systems, Inc., and to be possessed of all the estate, property, rights, privileges and franchises of said corporation,

NOW, THEREFORE, BE IT RESOLVED, that this corporation merge into itself said Imigen Systems, Inc. and assumes all of its obligations, and

FURTHER RESOLVED, that an authorized officer of this corporation be and he or she is hereby directed to make and execute a certificate of ownership setting forth a copy of the resolution to merge said Imigen Systems, Inc. and assume its liabilities and obligations, and the date of adoption thereof, and to file

the same in the office of the Secretary of State of Delaware, and

FURTHER RESOLVED, that the officers of this corporation be and they hereby are authorized and directed to do all acts and things whatsoever, whether within or without the State of Delaware; which may be in any way necessary or proper to effect said merger.

IN WITNESS WHEREOF, said parent corporation has caused its corporate seal to be affixed and this Certificate to be signed by an authorized officer this 29th day of December, 2011.

By: /s/ Thomas B. Neff

Name: Thomas B. Neff

Title: President and CEO

CERTIFICATE OF AMENDMENT OF THE
CERTIFICATE OF INCORPORATION
OF
FIBROGEN, INC.

It is hereby certified that:

1. The name of the corporation (hereinafter called the "Corporation") is FibroGen, Inc.

2. The certificate of incorporation of the Corporation is hereby amended by striking out the first paragraph of the Fourth Article and substituting in lieu of said paragraph the following new paragraph:

"FOURTH. The total number of shares of all classes of capital stock which the corporation shall have the authority to issue is Three Hundred Fifty Million (350,000,000) shares, comprised of Two Hundred Twenty-Five Million (225,000,000) shares of Common Stock with a par value of One Cent ($.01) per share (the "Common Stock") and One Hundred Twenty-Five Million (125,000,000) shares of Preferred Stock with a par value of One Cent ($.01) per share (the "Preferred Stock")."

3. The Amendment of the certificate of incorporation herein has been duly adopted in accordance with the provisions of Section 228 and 242 of the Delaware General Corporation Law.

Executed this 22nd day of March, 2012.

/s/ Julian Stern
Julian Stern
Corporate Secretary

CERTIFICATE OF VALIDATION
OF
CERTIFICATE OF DESIGNATIONS
OF
SERIES B CONVERTIBLE PREFERRED STOCK
OF
FIBROGEN, INC.

Pursuant to Section 204 of the
General Corporation Law of the State of Delaware

FibroGen, Inc., a corporation organized and existing under the laws of the State of Delaware (the "Corporation"), certifies as follows:

1. On September 17, 2014, the board of directors of the Corporation adopted the resolutions attached hereto (without the exhibits or schedules thereto) as Exhibit A. On September 30, 2014, the stockholders of the Corporation, acting by written consent in lieu of a meeting in accordance with Section 228 of the General Corporation Law of the State of Delaware adopted the resolutions attached hereto (without the exhibit thereto) as Exhibit B. The foregoing resolutions of the board of directors and of the stockholders were duly adopted by the board of directors and by the stockholders, respectively, in accordance with the provisions of Section 204 of the General Corporation Law of the State of Delaware.

2. The certificate that was previously filed under Section 103 of the General Corporation Law of the State of Delaware in respect of the Initial Series B Financing as defined and identified in the resolutions attached as Exhibit A and Exhibit B hereto was the Certificate of Designations of Series B Convertible Preferred Stock of the Corporation filed with the Secretary of State of the State of Delaware on November 8, 1995.

3. Attached hereto as Exhibit C are the provisions of the Certificate of Designations of Series B Convertible Preferred Stock of the Corporation as would be required under Section 151 of the General Corporation Law of the State of Delaware to be included in the Certificate of Designations of Series B Convertible Preferred Stock of the Corporation to be effective as of September 30, 1995 at 12:01 a.m. (Eastern).

[*Remainder of Page Intentionally Left Blank*]

IN WITNESS WHEREOF, the Corporation has caused this Certificate of Validation to be executed by its duly authorized officer this 16 day of October, 2014.

FIBROGEN, INC.

By: */s/ Michael Lowenstein*
Name: Michael Lowenstein
Title: Assistant Secretary

Exhibit A

Board Resolutions

WHEREAS, in connection with the issuance and sale of shares of Series B Convertible Preferred Stock, par value $0.01 per share (the "***Series B Preferred Stock***"), of the Company, the Certificate of Designations of Series B Convertible Preferred Stock of the Company (the "***Series B Certificate of Designation***") was filed with the Secretary of State of the State of Delaware (the "***Secretary of State***") on November 8, 1995;

WHEREAS, prior to the filing of the Series B Certificate of Designation, the Company issued and sold 2,207,693 shares of Series B Preferred Stock on September 30, 1995 (the "***Initial Series B Financing***");

WHEREAS, the Company has not been able to locate the resolutions of the Board of Directors (the "***Board***") approving and declaring advisable the Series B Certificate of Designation and approving and authorizing the issuance and sale of shares of Series B Preferred Stock in the Initial Series B Financing;

WHEREAS, in connection with the issuance and sale of additional shares of Series B Preferred Stock, the Board approved and declared advisable, the Amended Designation of Series B Convertible Preferred Stock of the Company (the "***Series B Amendment***"), which was filed with the Secretary of State on April 19, 1996;

WHEREAS, prior to the filing of the Series B Amendment, the Company issued and sold 2,061,401 shares of Series B Preferred Stock on March 31, 1996 (the "***Subsequent Series B Financing***");

WHEREAS, in connection with the issuance and sale of shares of Series D Convertible Preferred Stock, par value $0.01 per share (the "***Series D Preferred Stock***"), of the Company, the Board approved and declared advisable, the Amended Designation of Series D Convertible Preferred Stock of the Company (the "***Fourth Series D Amendment***"), which was filed with the Secretary of State on December 21, 2006;

WHEREAS, prior to the filing of the Fourth Series D Amendment, the Company issued and sold 279,999 shares of Series D Preferred Stock on March 29, 2006 (the "***Series D Financing***" and, together with the Initial Series B Financing and the Subsequent Series B Financing, the "***Financings***");

WHEREAS, the Board approved and declared advisable the Certificate of Designations of Series E Preferred Stock of the Company (the "***Series E Certificate of Designation***"), which was filed with the Secretary of State on May 16, 2000, which certificate of designation designated shares of preferred stock in excess of the total number of authorized shares of preferred stock set forth in the certificate of incorporation (as amended and/or restated from time to time, the "***Certificate of Incorporation***");

WHEREAS, the Board approved and declared advisable, the Amended Designation of Series D Preferred Stock of the Company (the "***First Series D Amendment***"), which was filed with the Secretary of State on July 26, 2002, which amendment designated shares of preferred stock in excess of the total number of authorized shares of preferred stock set forth in the Certificate of Incorporation;

WHEREAS, the Board approved and declared advisable, the Amended Designation of Series D Preferred Stock of the Company (the "***Second Series D Amendment***" and together with the First Series D Amendment, the "***Early Series D Amendments***"), which was filed with the Secretary of State on December 27, 2002, which amendment designated shares of preferred stock in excess of the total number of authorized shares of preferred stock set forth in the Certificate of Incorporation;

WHEREAS, the Board approved and declared advisable the Certificate of Designations of Series F Preferred Stock of the Company (the "***Series F Certificate of Designation***"), which was filed with the Secretary of State on December 27, 2004, which certificate of designation designated shares of preferred stock in excess of the total number of authorized shares of preferred stock set forth in the Certificate of Incorporation;

WHEREAS, the Board approved and declared advisable, the Amended Designation of Series F Preferred Stock of the Company (the "***First Series F Amendment***"), which was filed with the Secretary of State on January 31, 2005, which amendment designated shares of preferred stock in excess of the total number of authorized shares of preferred stock set forth in the Certificate of Incorporation;

WHEREAS, the Board approved and declared advisable, the Amended Designation of Series F Preferred Stock of the Company (the "***Second Series F Amendment***" and together with the First Series F Amendment, the "***Series F Amendments***"), which was filed with the Secretary of State on November 7, 2005, which amendment designated shares of preferred stock in excess of the total number of authorized shares of preferred stock set forth in the Certificate of Incorporation;

WHEREAS, on March 29, 2006, after previously approving the issuance of up to 550,000 shares of the Company's Preferred Stock in connection with a merger, the Company issued shares of Series D Preferred Stock in connection with said merger in excess of the total number of shares designated as Series D Preferred Stock in the Amended Designation of Series D Convertible Preferred Stock of the Company (the "***Third Series D Amendment***"), which was filed with the Secretary of State on February 19, 2004, and in excess of the total number of shares designated as Series D Preferred Stock in the Fourth Series D Amendment, which was filed on December 21, 2006 (the "***Series D Overissue***");

WHEREAS, the Company from time to time granted certain stock options and warrants and issued certain shares of its stock, each as set forth on **Attachment 1-A** hereto, without record of, or prior to, approval by the Board (collectively, the "***Securities Issuances***");

WHEREAS, for the avoidance of doubt, the Board has determined that it is advisable and in the best interests of the Company and its stockholders to address any potential issues that may arise in light thereof;

WHEREAS, the Board has determined that it is advisable and in the best interests of the Company and its stockholders to ratify all of the above corporate actions (the "***Ratification***"), in each case pursuant to and in accordance with Section 204 of the General Corporation Law; and

WHEREAS, any claim that any of the potentially defective corporate acts or putative stock referenced herein being ratified under Section 204 of the General Corporation Law is void or voidable due to the identified potential failure of authorization, or that the Delaware Court of Chancery should declare in its discretion that the ratification thereof in accordance with Section 204 of the General Corporation Law not be effective or be effective only on certain conditions must be brought within 120 days from the relevant validation effective time.

NOW, THEREFORE, BE IT RESOLVED, that (i) each of the Financings, (ii) the filing and effectiveness of each of the Series B Certificate of Designation, the Series E Certificate of Designation, the Early Series D Amendments, the Series F Certificate of Designation and the Series F Amendments with the Secretary of State, (iii) the Series D Overissue, and (iv) each of the Securities Issuances, are the potentially defective corporate acts to be ratified by the Ratification.

RESOLVED, FURTHER, that the time of the Initial Series B Financing was September 30, 1995, the time of the Subsequent Series B Financing was March 31, 1996, and the time of the Series D Financing was March 29, 2006.

RESOLVED, FURTHER, that the time of the filing and effectiveness of the Series B Certificate of Designation was November 8, 1995, the time of the filing and effectiveness of the Series E Certificate of Designation was May 16, 2000, the time of the filing and effectiveness of the First Series D Amendment was July 26, 2002, the time of the filing and effectiveness of the Second Series D Amendment was December 27, 2002, the time of the filing and effectiveness of the Series F Certificate of Designation was December 27, 2004, the time of the filing and effectiveness of the First Series F Amendment was January 31, 2005 and the time of the filing and effectiveness of the Second Series F Amendment was November 7, 2005.

RESOLVED, FURTHER, that the time of the Series D Overissue was March 29, 2006.

RESOLVED, FURTHER, that the time of each of the Securities Issuances is as set forth on **Attachment 1-A**.

RESOLVED, FURTHER, that the Initial Series B Financing involved the issuance of 2,207,693 shares of Series B Preferred Stock on September 30, 1995, the Subsequent Series B Financing involved the issuance of 2,061,401 shares of Series B Preferred Stock on March 31, 1996 and the Series D Financing involved the issuance of 279,999 shares of Series D Preferred Stock on March 29, 2006, all of which shares are putative stock.

RESOLVED, FURTHER, that the Series D Overissue involved the issuance of 54 shares of Series D Preferred Stock on March 29, 2006, which shares are putative stock.

RESOLVED, FURTHER, that the Securities Issuances involved the issuance of shares of putative stock (or options or warrants in respect thereof), the number and type of shares of putative stock issued, and the date or dates upon which such shares of stock were purported to have been issued is as set forth on **Attachment 1-A**, together with the vesting terms and grant or issuance price, as applicable.

RESOLVED, FURTHER, that the Board hereby identifies the following as the failures of authorization in respect of the Financings: (i) the failure of each of the Series B Certificate of Designation, Series B Amendment and the Fourth Series D Amendment, as the case may be, to have been filed and to have become effective with the Secretary of State prior to the issuance of shares in connection with each such Financing, and (ii) solely in respect of the Initial Series B Financing, the potential failure of the Board to have approved and declared advisable the Series

B Certificate of Designation prior to the filing and effectiveness thereof with the Secretary of State and to have validly authorized the issuance of shares of Series B Preferred Stock prior to such issuance.

RESOLVED, FURTHER, that the Board hereby identifies the potential failure of the Board to have approved and declared advisable the Series B Certificate of Designation prior to the filing and effectiveness thereof with the Secretary of State as the failure of authorization in respect of the Series B Certificate of Designation.

RESOLVED, FURTHER, that the Board hereby identifies the following as the failure of authorization in respect of the filing and effectiveness of the Series E Certificate of Designation, the Early Series D Amendments, the Series F Certificate of Designation and the Series F Amendments: the failure of the total number of authorized shares of preferred stock in the Certificate of Incorporation to have been increased pursuant to an amendment thereto or an amendment and restatement thereof, prior to the Board's approval of the Series E Certificate of Designation, the Early Series D Amendments, the Series F Certificate of Designation and the Series F Amendments, as the case may be, and the filing and effectiveness thereof with the Secretary of State.

RESOLVED, FURTHER, that the Board hereby identifies the following as the failures of authorization in respect of the Series D Overissue: the failure of the total number of shares designated as Series D Preferred Stock to have been increased pursuant to an amendment to the Third Series D Amendment prior to the issuance thereof;

RESOLVED, FURTHER, that the Board hereby identifies the following as the failure of authorization in respect of the Securities Issuances: the failure of the Board to have validly authorized the issuance thereof prior to such issuance.

RESOLVED, FURTHER, that, pursuant to and in accordance with Section 204 of the General Corporation Law, the Ratification be, and hereby is, approved, adopted and confirmed in all respects.

RESOLVED, FURTHER, that these resolutions authorizing the Ratification shall be submitted to the holders of valid stock (as defined in Section 204(h) of the General Corporation Law) of the Company entitled to vote thereon for adoption thereby, and the Board of Directors recommends that such stockholders adopt these resolutions authorizing the Ratification.

RESOLVED FURTHER, that the record date (the "***Record Date***") for determining the stockholders of the Company entitled to vote on these resolutions authorizing the Ratification shall be the close of business on the date hereof.

RESOLVED, FURTHER, that the officers of the Company be, and each hereby is, authorized, empowered and directed, for and on behalf of the Company, to deliver a notice of the Ratification in the form and containing the information required by Section 204 of the General Corporation Law and, if the resolutions authorizing the Ratification are adopted by written consent of stockholders in lieu of a meeting, Section 228(e) of the General Corporation Law.

RESOLVED, FURTHER, that, subject to the adoption of the resolutions authorizing the Ratification by the stockholders, the officers of the Company be, and each hereby is, authorize, empowered and directed, for and on behalf of the Company, to execute and file or cause to be filed with the Secretary of State, a certificate of validation in respect of each of (i) the Initial Series B Financing, (ii) the Subsequent Series B Financing, (iii) the Series D Financing, (iv) the Series E Certificate of Designation, (v) the Early Series D Amendments, (vi) the Series F Certificate of Designation. (vii) the Series F Amendments, and (viii) the Series D Overissue in each case in the form prescribed by Section 204 of the General Corporation Law.

RESOLVED, FURTHER, that, any time before the validation effective time in respect of the ratification of the defective corporate acts set forth herein, the Board may abandon such ratification, as the case may be, before or after stockholder approval thereof, without further action by the stockholders.

RESOLVED, FURTHER, that the officers of the Company be, and each hereby is, authorized, empowered and directed, for and on behalf of the Company, to take any and all actions, to negotiate for and enter into agreements and amendments to agreements, to perform all such acts and things, to execute, file, deliver or record in the name and on behalf of the Company, all such certificates (including, but not limited to, a certificate of validation in respect of each of (i) the Initial Series B Financing, (ii) the Subsequent Series B Financing (iii) the Series D Financing, (iv) the Series E Certificate of Designation, (v) the Early Series D Amendments, (vi) the Series F Certificate of Designation, (vii) the Series F Amendments and (viii) the Series D Overissue), instruments, agreements or other documents, and to make all such payments as they, in their judgment, or in the judgment of any one or more of them, may deem necessary, advisable or appropriate in order to carry out the purpose and intent of, or consummate the transactions contemplated by the foregoing resolutions and/or all of the transactions contemplated therein or thereby, the authorization therefor to be conclusively evidenced by the taking of such action or the execution and delivery of such certificates, instruments, agreements or documents.

Exhibit B

Stockholder Resolutions

WHEREAS, the Board of Directors of the Company (the "***Board***") has identified certain potentially defective corporate acts in the resolutions attached hereto as **Attachment 1** (the "***Board Resolutions***"), which Board Resolutions are incorporated herein by reference;

WHEREAS, for the avoidance of doubt, the Board has determined that it is advisable and in the best interests of the Company and its stockholders to ratify all of the potentially defective corporate acts set forth in the Board Resolutions by approving and adopting the Ratification (as defined in the Board Resolutions) pursuant to and in accordance with Section 204 of the General Corporation Law;

WHEREAS, the Board has approved and adopted the Ratification and has directed that the Board Resolutions approving the Ratification be submitted to the holders of valid stock (as defined in Section 204(h) of the General Corporation Law) of the Company entitled to vote thereon for adoption thereby;

WHEREAS, the Board has recommended that the holders of valid stock of the Company entitled to vote on the adoption of the Board Resolutions adopt the Board Resolutions authorizing the Ratification; and

WHEREAS, any claim that any of the potentially defective corporate acts or putative stock referenced in the Board Resolutions being ratified under Section 204 of the General Corporation Law is void or voidable due to the identified potential failure of authorization, or that the Delaware Court of Chancery should declare in its discretion that the ratification thereof in accordance with Section 204 of the General Corporation Law not be effective or be effective only on certain conditions must be brought within 120 days from the relevant validation effective time.

NOW, THEREFORE, BE IT RESOLVED, that, pursuant to and in accordance with Section 204 of the General Corporation Law, the Board Resolutions authorizing the Ratification be, and hereby are, approved, adopted and confirmed in all respects.

RESOLVED, FURTHER, that the officers of the Company be, and each hereby is, authorized, empowered and directed, for and on behalf of the Company, to execute and file or cause to be filed with the Secretary of State of the State of Delaware, the certificates of validation referenced in the Board Resolutions.

RESOLVED, FURTHER, that, any time before the validation effective time, the Board of Directors may abandon the Board Resolutions effecting the Ratification, before or after stockholder approval thereof, without further action by the stockholders.

RESOLVED, FURTHER, that the officers of the Company be, and each hereby is, authorized, empowered and directed, for and on behalf of the Company, to take any and all actions, to negotiate for and enter into agreements and amendments to agreements, to perform all such acts and things, to execute, file, deliver or record in the name and on behalf of the Company, all such certificates (including, but not limited to, the certificates of validation referenced in the Board Resolutions), instruments, agreements or other documents, and to make all such payments as they, in their judgment, or in the judgment of any one or more of them, may deem necessary, advisable or appropriate in order to carry out the purpose and intent of, or consummate the transactions contemplated by the foregoing resolutions and/or all of the transactions contemplated therein or thereby, the authorization therefor to be conclusively evidenced by the taking of such action or the execution and delivery of such certificates, instruments, agreements or documents.

CERTIFICATE OF DESIGNATIONS
OF
SERIES B CONVERTIBLE PREFERRED STOCK
OF
FIBROGEN, INC.

FIBROGEN, INC., a Delaware corporation (the **"Corporation"**), pursuant to the provisions of Section 151 of the General Corporation Law of the State of Delaware, does hereby make this Certificate of Designations and does hereby state and certify that, pursuant to the authority expressly vested in the Board of Directors of the Corporation by the Certificate of Incorporation of the Corporation, the Board of Directors has duly adopted the following resolutions:

RESOLVED, that, pursuant to Article FOURTH of the Certificate of Incorporation, which authorizes 20,000,000 shares of preferred stock, $.01 par value **("Preferred Stock"**), the Board of Directors hereby fixes the powers, designations, preferences and relative, participating, optional and other rights, and the qualifications, limitations and restrictions, of a series of Preferred Stock.

RESOLVED, that each share of such series of Preferred Stock shall rank equally in all respects and shall be subject to the following provisions:

(1) Number and Designation. 7,692,307 shares of the Preferred Stock of the Corporation shall be designated as Series B Convertible Preferred Stock (**"Series B Preferred Stock"**).

(2) Rank. The Series B Preferred Stock shall, with respect to rights on liquidation, dissolution and winding up, rank prior to all classes of the Corporation's common stock, $.01 par value (**"Common Stock"**). The Series B Preferred Stock shall, with respect to rights on liquidation, dissolution and winding up, rank equally with the Series A Convertible Preferred Stock (**"Series A Preferred Stock"**). All equity securities of the Corporation to which the Series B Preferred Stock ranks prior (whether with respect to liquidation, dissolution, winding up or otherwise), including the Common Stock, are collectively referred to herein as the **"Junior Securities."** All equity securities of the Corporation with which the Series B Preferred Stock ranks on a parity (whether with respect to liquidation, dissolution, winding up or otherwise), including Series A Preferred Stock, are collectively referred to herein as the **"Parity Securities."** All equity securities of the Corporation to which the Series B Preferred Stock ranks junior (whether with respect to liquidation, dissolution, winding up or otherwise), are collectively referred to herein as the **"Senior Securities"**. The respective definitions of Junior Securities, Parity Securities and Senior Securities shall also include any rights, options or warrants exercisable for any of the Junior Securities, Parity

Securities and Senior Securities, as the case may be. The Series B Preferred Stock shall be subject to the creation of Junior Securities, Parity Securities and Senior Securities.

(3) Dividends. The holders of shares of Series B Preferred Stock shall be entitled to receive, when, as and if declared by the Board of Directors, out of funds legally available for the payment of dividends, to the extent as, on the same basis as, at the same rate as, and contemporaneously with, cash dividends when, as and if declared by the Board of Directors with respect to shares of any Common Stock or Parity Securities. Such dividends shall be paid to the holders of record at the close of business on the record date specified by the Board of Directors of the Corporation at the time such dividend is declared, provided, however, that such record date shall not be more than 60 days or less than 10 days prior to the applicable dividend payment date.

(4) Conversion.

(a) Each share of Series B Preferred Stock shall be convertible, at the option of the holder thereof except as otherwise provided in paragraph (4) (b) below, at any time after the date of issuance of such share, at the office of the Corporation or any transfer agent for such stock, into such number of fully paid and non-assessable shares (calculated as to each conversion to the nearest 1/100th of a share) of Common Stock as is determined by dividing $1.30 by the Conversion Price (as defined below) applicable to such share, determined as hereinafter provided, in effect on the date the certificate is surrendered for conversion. The price at which shares of Common Stock shall be deliverable upon conversion of shares of Series B Preferred Stock (the **"Conversion Price"**) shall initially be $1.30 per share of Common Stock. Such initial Conversion Price shall be adjusted as hereinafter provided.

(b) Notwithstanding anything to the contrary herein, each outstanding share of Series B Preferred stock shall automatically convert upon a public offering of Common Stock at a price of at least $2.00 per share if the total aggregate proceeds to the Corporation before underwriting commissions and expenses are at least $10,000,000.

(c) Before any holder of Series B Preferred Stock shall be entitled to receive a certificate or certificates for shares of Common Stock upon conversion, such holder shall surrender the certificate or certificates for the holder's shares of Series B Preferred Stock, duly endorsed, at the office of the Corporation or of any transfer agent for such stock, and, unless such conversion is automatic pursuant to clause (b) above, shall give written notice to the Corporation at such office that such holder elects to convert the same and shall state therein the name or names in which such holder wishes the certificate or certificates for shares of Common Stock to be issued. The Corporation shall, as soon as practicable thereafter, issue and

deliver at such office to such holder of Series B Preferred Stock, a certificate or certificates for the number of shares of Common Stock to which such holder shall be entitled as aforesaid. Such conversion shall be deemed to have been made (i) in the case such conversion is automatic pursuant to clause (b) above, upon the effectiveness of the registration statement relating to such offering, and (ii) in all other cases, immediately prior to the close of business on the date of surrender of the shares of Series B Preferred Stock to be converted (in either case, the **"Conversion Date"**), and the person or persons entitled to receive the shares of Common Stock issuable upon such conversion shall be treated for all purposes as the record holder or record holders of such shares of Common Stock on such date.

(d) All shares of Series B Preferred Stock which have been converted as herein provided shall no longer be deemed to be outstanding and all rights with respect to such shares, including the rights, if any, to receive notices and to vote, shall forthwith cease and terminate, except only the right of the holders thereof, subject to the provisions of clause (c) of this paragraph (4), to receive shares of Common Stock in exchange therefor.

(e) (i) For the purposes of this clause (e), the following definitions shall apply:

(A) "Options" shall mean rights, options or warrants to subscribe for, purchase or otherwise acquire either Additional Shares of Common Stock or Convertible Securities (as defined below);

(B) "Original Issue Date" shall mean the date on which a share of Series B Preferred Stock was first issued;

(C) "Convertible Securities" shall mean any evidences of indebtedness, shares (other than Common Stock) or other securities convertible into or exchangeable for Additional Shares of Common Stock; and

(D) "Additional Shares of Common Stock" shall mean all shares of Common Stock issued (or, pursuant to clause (e)(iii) hereof, deemed to be issued) by the Corporation after the Original Issue Date, other than shares of Common Stock issued or issuable:

(I) to officers, directors or employees of, or consultants to, the Corporation pursuant to stock option or stock purchase plans or agreements on terms approved by the Board of Directors of the Corporation;

(II) as a dividend or distribution on shares of the Series B Preferred Stock; or

(III) for which adjustment of the Conversion Price is made pursuant to clause (j) or (k) of this paragraph (4).

(ii) Any provision herein to the contrary notwithstanding, no adjustment in the Conversion Price shall be made in respect of the issuance of Additional Shares of Common Stock unless the consideration per share (determined pursuant to subclause (e)(v) hereof) for an Additional Share of Common Stock issued or deemed to be issued by the Corporation is less than the Conversion Price in effect on the date of, and immediately prior to, such issue.

(iii) In the event the Corporation at any time or from time to time after the Original Issue Date shall issue any Options or Convertible Securities or shall fix a record date for the determination of holders of any class of securities then entitled to receive any such Options or Convertible Securities, then the maximum number of shares (as set forth in the instrument relating thereto without regard to any provisions contained therein designed to protect against dilution) of Common Stock issuable upon the exercise of such Options or, in the case of Convertible Securities and Options therefor, the conversion or exchange of such Convertible Securities, shall be deemed to be Additional Shares of Common Stock issued as of the time of such issue or, in case such a record date shall have been fixed, as of the close of business on such record date; provided, that in any such case in which Additional Shares of Common Stock are deemed to be issued:

(1) no further adjustments in the Conversion Price shall be made upon the subsequent issue of Convertible Securities or shares of Common Stock upon the exercise of such Options or conversion or exchange of such Convertible Securities;

(2) if such Options or Convertible Securities by their terms provide, with the passage of time or otherwise, for any increase or decrease in the consideration payable to the Corporation, or decrease or increase in the number of shares of Common Stock issuable, upon the exercise, conversion or exchange thereof, the Conversion Price computed upon the original issue thereof (or upon the occurrence of a record date with respect thereto), and any subsequent adjustments based thereon, shall, upon any such increase or decrease becoming effective, be recomputed to reflect such increase or decrease insofar as it affects such Options or the rights of conversion or exchange under such Convertible Securities (provided, however, that no such adjustment of the Conversion Price shall affect Common Stock previously issued upon conversion of the Series B Preferred Stock);

(3) upon the expiration of any such Options or any rights of conversion or exchange under such Convertible Securities which shall not have been exercised, the

Conversion Price computed upon the original issue thereof (or upon the occurrence of a record date with respect thereto), and any subsequent adjustments based thereon, shall, upon such expiration, be recomputed as if:

(A) in the case of Convertible Securities or Options for Common stock the only Additional Shares of Common Stock issued were the shares of Common Stock, if any, actually issued upon the exercise of such Options or the conversion or exchange of such Convertible Securities and the consideration received therefor was the consideration actually received by the Corporation for the issue of all such Options, whether or not exercised, plus the consideration actually received by the Corporation upon such exercise, or for the issue of all such Convertible Securities which were actually converted or exchanged, plus the additional consideration, if any, actually received by the Corporation upon such conversion or exchange; and

(B) in the case of Options for Convertible Securities only the Convertible Securities, if any, actually issued upon the exercise thereof were issued at the time of issue of such Options, and the consideration received by the Corporation for the Additional Shares of Common Stock deemed to have been then issued was the consideration actually received by the Corporation for the issue of all such Options, whether or not exercised, plus the consideration deemed to have been received by the Corporation upon the issue of the Convertible Securities with respect to which such Options were actually exercised;

(4) no readjustment pursuant to clause (2) or (3) above shall have the effect of increasing the Conversion Price to an amount which exceeds the lower of (a) the Conversion Price on the original adjustment date (before adjustment) and (b) the Conversion Price that would have resulted from any issuance of Additional Shares of Common Stock between the original adjustment date and such readjustment date;

(5) in the case of any Options which expire by their terms not more than 30 days after the date of issue thereof, no adjustments of the Conversion Price shall be made until the expiration or exercise of all such Options, whereupon such adjustment shall be made in the same manner provided in clause (3) above.

(iv) In the event this Corporation, at any time after the Original Issue Date, shall issue Additional Shares of Common Stock (including Additional Shares of Common Stock deemed to be issued pursuant to subclause (e)(iii) hereof) without consideration or for a consideration per share less than the Conversion Price in effect on the date of and immediately prior to such issue, then and in such event, the Conversion Price shall be reduced, concurrently with such issue, to a price (calculated to the nearest cent) determined by multiplying the Conversion Price by a fraction, the numerator of which shall be the number of shares of Common Stock outstanding immediately

prior to such issue plus the number of shares of Common Stock which the aggregate consideration received by the Corporation for the total number of Additional Shares of Common Stock so issued would purchase at such Conversion Price in effect immediately prior to such issuance, and the denominator of which shall be the number of shares of Common Stock outstanding immediately prior to such issue plus the number of such Additional Shares of Common Stock so issued. For the purpose of the above calculation, the number of shares of Common Stock outstanding immediately prior to such issue shall be calculated as if (i) all outstanding shares of Preferred Stock and all other outstanding evidences of indebtedness, shares or other securities convertible into or exchangeable for Common Stock had been fully converted into or exchanged for shares of Common Stock immediately prior to such issuance, and (ii) all outstanding rights, options or warrants to subscribe for, purchase or otherwise acquire Common Stock (or to acquire evidences of indebtedness, shares or other securities convertible into or exchangeable for Common Stock) had been fully exercised (and had been fully converted and exchanged if, upon such exercise, evidences of indebtedness, shares or other securities convertible into or exchangeable for Common Stock would be issued) immediately prior to such issuance, but not including in such calculation any additional shares of Common Stock issuable with respect to shares of Preferred Stock, other evidences of indebtedness, shares or other securities convertible, into or exchangeable for Common Stock or rights, options or warrants to subscribe for, purchase or otherwise acquire Common Stock solely as a result of the adjustment of the respective Conversion Prices (or other conversion ratios or exercise prices) resulting from the issuance of Additional Shares of Common Stock causing such adjustment.

(v) For purposes of this clause (e), the consideration received by the Corporation for the issue of any Additional Shares of Common Stock shall be computed as follows;

(1) If such consideration consists of cash and property, such consideration shall:

(A) insofar an it consists of cash, be computed at the aggregate amount of cash received by the Corporation excluding amounts paid or payable for accrued interest or accrued dividends;

(B) insofar as it consists of property other than cash, be computed at the fair value thereof at the time of such issue, as determined in good faith by the Board of Directors; and

(C) in the event Additional Shares of Common Stock are issued together with other shares or securities or other assets of the Corporation for consideration which covers both, be the proportion of such consideration so received, computed as provided in clauses (A) and (B) above, as determined in good faith by the Board of Directors.

(2) If such consideration consists of Options and Convertible Securities, the consideration per share received by the Corporation for Additional Shares of Common Stock deemed to have been issued pursuant to subclause (e)(iii), relating to Options and Convertible Securities, shall be determined by dividing:

(A) the total amount, if any, received or receivable by the Corporation as consideration for the issue of such Options or Convertible Securities, plus the minimum aggregate amount of additional consideration (as set forth in the instruments relating thereto, without regard to any provision contained therein designed to protect against dilution) payable to the Corporation upon the exercise of such Options or the conversion or exchange of such Convertible Securities, or in the case of Options for Convertible Securities, the exercise of such Options for Convertible Securities and the conversion or exchange of such Convertible Securities, by

(B) the maximum number of shares of Common Stock (as set forth in the instruments relating thereto, without regard to any provision contained therein designed to protect against the dilution) issuable upon the exercise of such Options or conversion or exchange of such Convertible Securities.

(f) In case:

(i) the Corporation shall declare a dividend (or any other distribution) on Common Stock payable otherwise than in cash out of its retained earnings; or

(ii) the Corporation shall authorize the granting to the holders of Common Stock of rights or warrants to subscribe for or purchase any shares of capital stock of any class or of any other rights; or

(iii) of any reclassification of the Common Stock (other than a subdivision, split or combination of its outstanding shares of Common Stock), or of any consolidation or merger to which the Corporation is a party and for which approval of any stockholders of the Corporation is required, or of the sale or transfer of all or substantially all of the assets of the Corporation; or

(iv) of the voluntary or involuntary dissolution; liquidation or winding up of the Corporation;

then the Corporation shall cause to be mailed to each holder of shares of Series B Preferred Stock at its address as shown on the books of the Corporation, at least 30 days (or 20 days in any case specified in clause (i) or (ii) above) prior to the applicable record or effective date hereinafter specified, a notice stating (x) the date on which a record is to be taken for the purpose of such dividend, distribution, rights or warrants,

or, if a record is not to be taken, the date as of which the holders of Common Stock of record to be entitled to such dividend, distribution, rights or warrants are to be determined, or (y) the date on which such reclassification, liquidation or winding up is expected to become effective, and the date as of which it is expected that holders of Common Stock of record shall be entitled to exchange their shares of Common Stock for securities, cash or other property deliverable upon such reclassification, consolidation, merger, sale, transfer, dissolution, liquidation or winding up.

(g) For the purposes of this paragraph (4), the term "Common Stock" shall mean (i) the class of stock designated as the Common Stock of the Corporation on the date of this Certificate of Designations, and (ii) any other class of common stock, including any class resulting from successive changes or reclassifications of such Common Stock consisting solely of changes in par value or from no par value to par value or from par value to no par value.

(h) No fractional share of Common Stock, or scrip representing a fractional share, shall be issuable upon the conversion of any Series B Preferred Stock. If a certificate or certificates representing more than one share of Series B Preferred Stock shall be surrendered for conversion at one time by the same holder, the number of full shares of Common Stock issuable upon conversion thereof shall be computed on the basis of the aggregate number of shares represented by certificates so surrendered. If any fractional interest in a share of Common Stock would be deliverable upon the conversion of any shares of Series B Preferred Stock, the Corporation shall pay, in lieu thereof, in cash the Conversion Price thereof as of the business day immediately preceding the date of such conversion.

(i) Such number of shares of Common Stock as may from time to time be required for such purpose shall be reserved for issuance upon conversion of outstanding shares of Series B Preferred Stock.

(j) If the Corporation shall at any time or from time to time effect a subdivision or stock split of the outstanding Common Stock, the Conversion Price of the Series B Preferred Stock then in effect immediately before that subdivision or stock split shall be proportionately decreased. If the Corporation shall at any time or from time to time combine the outstanding shares of Common Stock, the Conversion Price of the Series B Preferred Stock then in effect immediately before the combination shall be proportionately increased. Any adjustment under this paragraph shall become effective at the close of business on the date the subdivision, stock split or combination, as the case may be, becomes effective.

(k) In the event the Corporation at any time or from time to time shall make or issue, or fix a record date for the determination of holders of Common Stock entitled to receive,

a dividend or other distribution payable in additional shares of Common Stock, then and in each such event the Conversion Price of the Series B Preferred Stock then in effect shall be decreased as of the time of such issuance or, in the event such a record date shall have been fixed, as of the close of business on such record date, by multiplying the Conversion Price of the Series B Preferred Stock then in effect by a fraction;

(1) the denominator of which shall be the sum of the total number of shares of Common Stock issued and outstanding immediately prior to the time of such issuance or the close of business on such record date, plus the number of shares of Common Stock issuable in payment of such dividend or distribution, and

(2) the numerator of which shall be the total number of shares of Common Stock issued and outstanding immediately prior to the time of such issuance or the close of business on such record date;

provided, however, if such record date shall have been fixed and such dividend is not fully paid or if such distribution is not fully made on the date fixed therefor, the Conversion Price of Series B Preferred Stock shall be recomputed accordingly as of the close of business on such record date and thereafter the Conversion Price of Series B Preferred Stock shall be adjusted pursuant to this paragraph as of the time of actual payment or issuance of such dividends or distributions.

(l) In the event the Corporation at any time or from time to time shall make or issue, or fix a record date for the determination of holders of Common Stock entitled to receive, a dividend or other distribution payable in securities of the Corporation other than shares of Common Stock, then and in each such event provision shall be made so that the holders of Series B Preferred Stock shall receive upon conversion thereof in addition to the number of shares of Common Stock receivable thereupon, the amount of such other securities of the Corporation that they would have received had their Series B Preferred Stock been converted into Common Stock on the date, or the record date, of such event and had thereafter, during the period from the date of such event to and including the Conversion Date, retained such securities receivable by them as aforesaid during such period, all subject to further adjustment as provided herein during such period.

(m) If the Common Stock issuable upon the conversion of the Series B Preferred Stock shall be changed into the same or a different number of shares of any class or classes of stock, whether by capital reorganization, reclassification, exchange, substitution or otherwise, then and in each such event the holder of each such share of Series B Preferred Stock shall have the right thereafter to convert such share into the kind and amount of shares of stock and other securities and property receivable upon such reorganization, reclassification, exchange,

substitution or other change, by holders of the number of shares of Common Stock into which such shares of Series B Preferred Stock might have been converted immediately prior to such reorganization, reclassification, exchange, substitution or other change, all subject to further adjustment as provided herein.

(5) Liquidation Preference.

(a) In the event of any voluntary or involuntary liquidation, dissolution or winding up of the affairs of the Corporation, the holders of shares of Series B Preferred Stock then outstanding shall be entitled to be paid out of the assets of the Corporation available for distribution to its shareholders an amount in cash equal to $1.30 for each share outstanding, plus an amount in cash equal to all declared but unpaid dividends thereon to the date fixed for liquidation, dissolution or winding up before any payment shall be made or any assets distributed to the holders of any Junior Securities. If the assets of the Corporation, or the proceeds thereof, are not sufficient to pay in full the liquidation payments payable to the holders of outstanding shares of the Series B Preferred Stock and any Parity Securities, then the holders of all such shares shall share ratably in such distribution of assets, or the proceeds thereof, in accordance with the amount which would have been payable on such distribution if the amounts to which the holders of outstanding shares of Series B Preferred Stock and the holders of outstanding shares of such Parity Securities are entitled were paid in full. Except as provided in this paragraph (5) (a), holders of Series B Preferred Stock shall not be entitled to any distribution in the event of liquidation, dissolution or winding up of the affairs of the Corporation.

(b) For the purposes of this paragraph (5), neither the voluntary sale, conveyance, exchange or transfer (for cash, shares of stock, securities or other consideration) of all or substantially all the property or assets of the Corporation nor the consolidation or merger of the Corporation with or into one or more other corporations shall be deemed to be a liquidation, dissolution or winding up of the Corporation, voluntary or involuntary unless such voluntary sale, conveyance, exchange or transfer, or merger or consolidation, shall be in connection with a plan of liquidation, dissolution or winding up of the Corporation.

(6) Voting. In addition to any voting rights provided by law and to any voting rights of the holders of the Series B Preferred Stock, as or as part of a separate class or series, pursuant to this Certificate or any provision of the Certificate of Incorporation of the Corporation, the holder of each outstanding share of Series B Preferred Stock shall be entitled to vote on any matter voted on by holders of Common Stock, voting together as a single class with the holders of the Common Stock, and any other shares entitled to vote in the ordinary course. With respect to any such vote, each share of Series B Preferred Stock shall entitle the holder thereof to cast one vote.

(7) Reports. So long as any of the Series B Preferred Stock is outstanding, the Corporation will furnish the holders thereof with the quarterly and annual financial reports, if any, that the Corporation is required to file with the Securities and Exchange Commission pursuant to Section 13 or Section 15(d) of the Securities Exchange Act of 1934.

(8) General Provisions.

(a) The term "**person**" as used herein means any corporation, partnership, trust, organization, association, other entity or individual.

(b) The term "**outstanding**," when used with reference to shares of stock, shall mean issued shares, excluding shares held by the Corporation or any subsidiary of the Corporation.

(c) The headings of the paragraphs, subparagraphs, clauses and subclauses of this Certificate of Designations are for convenience of reference only and shall not define, limit or affect any of the provisions hereof.

IN WITNESS WHEREOF, FIBROGEN, Inc. has caused this Certificate of Designations to be signed and attested by the undersigned this 7th day of November 1995.

FIBROGEN, INC.

By: /s/ Julian N. Stern
Julian N. Stern
Secretary

CERTIFICATE OF VALIDATION
OF
CERTIFICATE OF DESIGNATION OF POWERS,
PREFERENCES AND RIGHTS OF THE SERIES E PREFERRED STOCK
OF
FIBROGEN, INC.

Pursuant to Section 204 of the
General Corporation Law of the State of Delaware

FibroGen, Inc., a corporation organized and existing under the laws of the State of Delaware (the "Corporation"), certifies as follows:

1. On September 17, 2014, the board of directors of the Corporation adopted the resolutions attached hereto (without the exhibits or schedules thereto) as Exhibit A. On September 30, 2014, the stockholders of the Corporation, acting by written consent in lieu of a meeting in accordance with Section 228 of the General Corporation Law of the State of Delaware adopted the resolutions attached hereto (without the exhibit thereto) as Exhibit B. The foregoing resolutions of the board of directors and of the stockholders were duly adopted by the board of directors and by the stockholders, respectively, in accordance with the provisions of Section 204 of the General Corporation Law of the State of Delaware.

2. The certificate that was previously filed under Section 103 of the General Corporation Law of the State of Delaware in respect of the Series E Certificate of Designation as defined and identified in the resolutions attached as Exhibit A and Exhibit B hereto was the Certificate of Designations of Powers, Preferences and Rights of the Series E Convertible Preferred Stock of the Corporation filed with the Secretary of State of the State of Delaware on May 16, 2000.

3. Attached hereto as Exhibit C are the provisions of a certificate of amendment of the certificate of incorporation of the Corporation as then in effect (the "Certificate of Incorporation") as would be required under Section 242 of the General Corporation Law of the State of Delaware to be included in a certificate of amendment of the Certificate of Incorporation to increase the total number of authorized shares of preferred stock set forth in the Certificate of Incorporation to be effective as of May 16, 2000 at 1:59 p.m. (Eastern).

[*Remainder of Page Intentionally Left Blank*]

IN WITNESS WHEREOF, the Corporation has caused this Certificate of Validation to be executed by its duly authorized officer this 16 day of October, 2014.

FIBROGEN, INC.

By: */s/ Michael Lowenstein*
Name: Michael Lowenstein
Title: Assistant Secretary

Exhibit A

Board Resolutions

WHEREAS, in connection with the issuance and sale of shares of Series B Convertible Preferred Stock, par value $0.01 per share (the "***Series B Preferred Stock***"), of the Company, the Certificate of Designations of Series B Convertible Preferred Stock of the Company (the "***Series B Certificate of Designation***") was filed with the Secretary of State of the State of Delaware (the "***Secretary of State***") on November 8, 1995;

WHEREAS, prior to the filing of the Series B Certificate of Designation, the Company issued and sold 2,207,693 shares of Series B Preferred Stock on September 30, 1995 (the "***Initial Series B Financing***");

WHEREAS, the Company has not been able to locate the resolutions of the Board of Directors (the "***Board***") approving and declaring advisable the Series B Certificate of Designation and approving and authorizing the issuance and sale of shares of Series B Preferred Stock in the Initial Series B Financing;

WHEREAS, in connection with the issuance and sale of additional shares of Series B Preferred Stock, the Board approved and declared advisable, the Amended Designation of Series B Convertible Preferred Stock of the Company (the "***Series B Amendment***"), which was filed with the Secretary of State on April 19, 1996;

WHEREAS, prior to the filing of the Series B Amendment, the Company issued and sold 2,061,401 shares of Series B Preferred Stock on March 31, 1996 (the "***Subsequent Series B Financing***");

WHEREAS, in connection with the issuance and sale of shares of Series D Convertible Preferred Stock, par value $0.01 per share (the "***Series D Preferred Stock***"), of the Company, the Board approved and declared advisable, the Amended Designation of Series D Convertible Preferred Stock of the Company (the "***Fourth Series D Amendment***"), which was filed with the Secretary of State on December 21, 2006;

WHEREAS, prior to the filing of the Fourth Series D Amendment, the Company issued and sold 279,999 shares of Series D Preferred Stock on March 29, 2006 (the "***Series D Financing***" and, together with the Initial Series B Financing and the Subsequent Series B Financing, the "***Financings***");

WHEREAS, the Board approved and declared advisable the Certificate of Designations of Series E Preferred Stock of the Company (the "***Series E Certificate of Designation***"), which was filed with the Secretary of State on May 16, 2000, which certificate of designation designated shares of preferred stock in excess of the total number of authorized shares of preferred stock set forth in the certificate of incorporation (as amended and/or restated from time to time, the "***Certificate of Incorporation***");

WHEREAS, the Board approved and declared advisable, the Amended Designation of Series D Preferred Stock of the Company (the "***First Series D Amendment***"), which was filed with the Secretary of State on July 26, 2002, which amendment designated shares of preferred stock in excess of the total number of authorized shares of preferred stock set forth in the Certificate of Incorporation;

WHEREAS, the Board approved and declared advisable, the Amended Designation of Series D Preferred Stock of the Company (the "***Second Series D Amendment***" and together with the First Series D Amendment, the "***Early Series D Amendments***"), which was filed with the Secretary of State on December 27, 2002, which amendment designated shares of preferred stock in excess of the total number of authorized shares of preferred stock set forth in the Certificate of Incorporation;

WHEREAS, the Board approved and declared advisable the Certificate of Designations of Series F Preferred Stock of the Company (the "***Series F Certificate of Designation***"), which was filed with the Secretary of State on December 27, 2004, which certificate of designation designated shares of preferred stock in excess of the total number of authorized shares of preferred stock set forth in the Certificate of Incorporation;

WHEREAS, the Board approved and declared advisable, the Amended Designation of Series F Preferred Stock of the Company (the "***First Series F Amendment***"), which was filed with the Secretary of State on January 31, 2005, which amendment designated shares of preferred stock in excess of the total number of authorized shares of preferred stock set forth in the Certificate of Incorporation;

WHEREAS, the Board approved and declared advisable, the Amended Designation of Series F Preferred Stock of the Company (the "***Second Series F Amendment***" and together with the First Series F Amendment, the "***Series F Amendments***"), which was filed with the Secretary of State on November 7, 2005, which amendment designated shares of preferred stock in excess of the total number of authorized shares of preferred stock set forth in the Certificate of Incorporation;

WHEREAS, on March 29, 2006, after previously approving the issuance of up to 550,000 shares of the Company's Preferred Stock in connection with a merger, the Company issued shares of Series D Preferred Stock in connection with said merger in excess of the total number of shares designated as Series D Preferred Stock in the Amended Designation of Series D Convertible Preferred Stock of the Company (the "***Third Series D Amendment***"), which was filed with the Secretary of State on February 19, 2004, and in excess of the total number of shares designated as Series D Preferred Stock in the Fourth Series D Amendment, which was filed on December 21, 2006 (the "***Series D Overissue***");

WHEREAS, the Company from time to time granted certain stock options and warrants and issued certain shares of its stock, each as set forth on **Attachment 1-A** hereto, without record of, or prior to, approval by the Board (collectively, the "***Securities Issuances***");

WHEREAS, for the avoidance of doubt, the Board has determined that it is advisable and in the best interests of the Company and its stockholders to address any potential issues that may arise in light thereof;

WHEREAS, the Board has determined that it is advisable and in the best interests of the Company and its stockholders to ratify all of the above corporate actions (the "***Ratification***"), in each case pursuant to and in accordance with Section 204 of the General Corporation Law; and

WHEREAS, any claim that any of the potentially defective corporate acts or putative stock referenced herein being ratified under Section 204 of the General Corporation Law is void or voidable due to the identified potential failure of authorization, or that the Delaware Court of Chancery should declare in its discretion that the ratification thereof in accordance with Section 204 of the General Corporation Law not be effective or be effective only on certain conditions must be brought within 120 days from the relevant validation effective time.

NOW, THEREFORE, BE IT RESOLVED, that (i) each of the Financings, (ii) the filing and effectiveness of each of the Series B Certificate of Designation, the Series E Certificate of Designation, the Early Series D Amendments, the Series F Certificate of Designation and the Series F Amendments with the Secretary of State, (iii) the Series D Overissue, and (iv) each of the Securities Issuances, are the potentially defective corporate acts to be ratified by the Ratification.

RESOLVED, FURTHER, that the time of the Initial Series B Financing was September 30, 1995, the time of the Subsequent Series B Financing was March 31, 1996, and the time of the Series D Financing was March 29, 2006.

RESOLVED, FURTHER, that the time of the filing and effectiveness of the Series B Certificate of Designation was November 8, 1995, the time of the filing and effectiveness of the Series E Certificate of Designation was May 16, 2000, the time of the filing and effectiveness of the First Series D Amendment was July 26, 2002, the time of the filing and effectiveness of the Second Series D Amendment was December 27, 2002, the time of the filing and effectiveness of the Series F Certificate of Designation was December 27, 2004, the time of the filing and effectiveness of the First Series F Amendment was January 31, 2005 and the time of the filing and effectiveness of the Second Series F Amendment was November 7, 2005.

RESOLVED, FURTHER, that the time of the Series D Overissue was March 29, 2006.

RESOLVED, FURTHER, that the time of each of the Securities Issuances is as set forth on **Attachment 1-A**.

RESOLVED, FURTHER, that the Initial Series B Financing involved the issuance of 2,207,693 shares of Series B Preferred Stock on September 30, 1995, the Subsequent Series B Financing involved the issuance of 2,061,401 shares of Series B Preferred Stock on March 31, 1996 and the Series D Financing involved the issuance of 279,999 shares of Series D Preferred Stock on March 29, 2006, all of which shares are putative stock.

RESOLVED, FURTHER, that the Series D Overissue involved the issuance of 54 shares of Series D Preferred Stock on March 29, 2006, which shares are putative stock.

RESOLVED, FURTHER, that the Securities Issuances involved the issuance of shares of putative stock (or options or warrants in respect thereof), the number and type of shares of putative stock issued, and the date or dates upon which such shares of stock were purported to have been issued is as set forth on **Attachment 1-A**, together with the vesting terms and grant or issuance price, as applicable.

RESOLVED, FURTHER, that the Board hereby identifies the following as the failures of authorization in respect of the Financings: (i) the failure of each of the Series B Certificate of Designation, Series B Amendment and the Fourth Series D Amendment, as the case may be, to have been filed and to have become effective with the Secretary of State prior to the issuance of shares in connection with each such Financing, and (ii) solely in respect of the Initial Series B Financing, the potential failure of the Board to have approved and declared advisable the Series

B Certificate of Designation prior to the filing and effectiveness thereof with the Secretary of State and to have validly authorized the issuance of shares of Series B Preferred Stock prior to such issuance.

RESOLVED, FURTHER, that the Board hereby identifies the potential failure of the Board to have approved and declared advisable the Series B Certificate of Designation prior to the filing and effectiveness thereof with the Secretary of State as the failure of authorization in respect of the Series B Certificate of Designation.

RESOLVED, FURTHER, that the Board hereby identifies the following as the failure of authorization in respect of the filing and effectiveness of the Series E Certificate of Designation, the Early Series D Amendments, the Series F Certificate of Designation and the Series F Amendments: the failure of the total number of authorized shares of preferred stock in the Certificate of Incorporation to have been increased pursuant to an amendment thereto or an amendment and restatement thereof, prior to the Board's approval of the Series E Certificate of Designation, the Early Series D Amendments, the Series F Certificate of Designation and the Series F Amendments, as the case may be, and the filing and effectiveness thereof with the Secretary of State.

RESOLVED, FURTHER, that the Board hereby identifies the following as the failures of authorization in respect of the Series D Overissue: the failure of the total number of shares designated as Series D Preferred Stock to have been increased pursuant to an amendment to the Third Series D Amendment prior to the issuance thereof;

RESOLVED, FURTHER, that the Board hereby identifies the following as the failure of authorization in respect of the Securities Issuances: the failure of the Board to have validly authorized the issuance thereof prior to such issuance.

RESOLVED, FURTHER, that, pursuant to and in accordance with Section 204 of the General Corporation Law, the Ratification be, and hereby is, approved, adopted and confirmed in all respects.

RESOLVED, FURTHER, that these resolutions authorizing the Ratification shall be submitted to the holders of valid stock (as defined in Section 204(h) of the General Corporation Law) of the Company entitled to vote thereon for adoption thereby, and the Board of Directors recommends that such stockholders adopt these resolutions authorizing the Ratification.

RESOLVED FURTHER, that the record date (the "***Record Date***") for determining the stockholders of the Company entitled to vote on these resolutions authorizing the Ratification shall be the close of business on the date hereof.

RESOLVED, FURTHER, that the officers of the Company be, and each hereby is, authorized, empowered and directed, for and on behalf of the Company, to deliver a notice of the Ratification in the form and containing the information required by Section 204 of the General Corporation Law and, if the resolutions authorizing the Ratification are adopted by written consent of stockholders in lieu of a meeting, Section 228(e) of the General Corporation Law.

RESOLVED, FURTHER, that, subject to the adoption of the resolutions authorizing the Ratification by the stockholders, the officers of the Company be, and each hereby is, authorize, empowered and directed, for and on behalf of the Company, to execute and file or cause to be filed with the Secretary of State, a certificate of validation in respect of each of (i) the Initial Series B Financing, (ii) the Subsequent Series B Financing, (iii) the Series D Financing, (iv) the Series E Certificate of Designation, (v) the Early Series D Amendments, (vi) the Series F Certificate of Designation. (vii) the Series F Amendments, and (viii) the Series D Overissue in each case in the form prescribed by Section 204 of the General Corporation Law.

RESOLVED, FURTHER, that, any time before the validation effective time in respect of the ratification of the defective corporate acts set forth herein, the Board may abandon such ratification, as the case may be, before or after stockholder approval thereof, without further action by the stockholders.

RESOLVED, FURTHER, that the officers of the Company be, and each hereby is, authorized, empowered and directed, for and on behalf of the Company, to take any and all actions, to negotiate for and enter into agreements and amendments to agreements, to perform all such acts and things, to execute, file, deliver or record in the name and on behalf of the Company, all such certificates (including, but not limited to, a certificate of validation in respect of each of (i) the Initial Series B Financing, (ii) the Subsequent Series B Financing (iii) the Series D Financing, (iv) the Series E Certificate of Designation, (v) the Early Series D Amendments, (vi) the Series F Certificate of Designation, (vii) the Series F Amendments and (viii) the Series D Overissue), instruments, agreements or other documents, and to make all such payments as they, in their judgment, or in the judgment of any one or more of them, may deem necessary, advisable or appropriate in order to carry out the purpose and intent of, or consummate the transactions contemplated by the foregoing resolutions and/or all of the transactions contemplated therein or thereby, the authorization therefor to be conclusively evidenced by the taking of such action or the execution and delivery of such certificates, instruments, agreements or documents.

Exhibit B

Stockholder Resolutions

WHEREAS, the Board of Directors of the Company (the "***Board***") has identified certain potentially defective corporate acts in the resolutions attached hereto as **Attachment 1** (the "***Board Resolutions***"), which Board Resolutions are incorporated herein by reference;

WHEREAS, for the avoidance of doubt, the Board has determined that it is advisable and in the best interests of the Company and its stockholders to ratify all of the potentially defective corporate acts set forth in the Board Resolutions by approving and adopting the Ratification (as defined in the Board Resolutions) pursuant to and in accordance with Section 204 of the General Corporation Law;

WHEREAS, the Board has approved and adopted the Ratification and has directed that the Board Resolutions approving the Ratification be submitted to the holders of valid stock (as defined in Section 204(h) of the General Corporation Law) of the Company entitled to vote thereon for adoption thereby;

WHEREAS, the Board has recommended that the holders of valid stock of the Company entitled to vote on the adoption of the Board Resolutions adopt the Board Resolutions authorizing the Ratification; and

WHEREAS, any claim that any of the potentially defective corporate acts or putative stock referenced in the Board Resolutions being ratified under Section 204 of the General Corporation Law is void or voidable due to the identified potential failure of authorization, or that the Delaware Court of Chancery should declare in its discretion that the ratification thereof in accordance with Section 204 of the General Corporation Law not be effective or be effective only on certain conditions must be brought within 120 days from the relevant validation effective time.

NOW, THEREFORE, BE IT RESOLVED, that, pursuant to and in accordance with Section 204 of the General Corporation Law, the Board Resolutions authorizing the Ratification be, and hereby are, approved, adopted and confirmed in all respects.

RESOLVED, FURTHER, that the officers of the Company be, and each hereby is, authorized, empowered and directed, for and on behalf of the Company, to execute and file or cause to be filed with the Secretary of State of the State of Delaware, the certificates of validation referenced in the Board Resolutions.

RESOLVED, FURTHER, that, any time before the validation effective time, the Board of Directors may abandon the Board Resolutions effecting the Ratification, before or after stockholder approval thereof, without further action by the stockholders.

RESOLVED, FURTHER, that the officers of the Company be, and each hereby is, authorized, empowered and directed, for and on behalf of the Company, to take any and all actions, to negotiate for and enter into agreements and amendments to agreements, to perform all such acts and things, to execute, file, deliver or record in the name and on behalf of the Company, all such certificates (including, but not limited to, the certificates of validation referenced in the Board Resolutions), instruments, agreements or other documents, and to make all such payments as they, in their judgment, or in the judgment of any one or more of them, may deem necessary, advisable or appropriate in order to carry out the purpose and intent of, or consummate the transactions contemplated by the foregoing resolutions and/or all of the transactions contemplated therein or thereby, the authorization therefor to be conclusively evidenced by the taking of such action or the execution and delivery of such certificates, instruments, agreements or documents.

Exhibit C

Certificate of Amendment

CERTIFICATE OF AMENDMENT OF THE
CERTIFICATE OF INCORPORATION
OF
FIBROGEN, INC.

It is hereby certified that:

1. The name of the corporation (hereinafter called the "Corporation") is FibroGen, Inc.

2, The certificate of incorporation of the Corporation is hereby amended by striking out the first paragraph of Article Fourth and substituting in lieu of said paragraph the following new paragraph:

"FOURTH. The total number of shares of all classes of capital stock which the corporation shall have the authority to issue is 150,926,686 shares, comprised of 100,000,000 shares of Common Stock with a par value of One Cent ($.01) per share (the "Common Stock") and 50,926,686 shares of Preferred Stock with a par value of One Cent ($.01) per share (the "Preferred Stock")."

3. The foregoing amendment was duly adopted in accordance with the provisions of Section 242 of the General Corporation Law of the State of Delaware and was approved by the stockholders acting by written consent in accordance Section 228 of the General Corporation Law of the State of Delaware.

FIBROGEN, INC.

By: */s/ Michael Lowenstein*
Name: Michael Lowenstein
Title: Assistant Secretary

CORRECTED CERTIFICATE OF AMENDMENT OF THE
CERTIFICATE OF DESIGNATIONS
OF
SERIES D CONVERTIBLE PREFERRED STOCK
OF
FIBROGEN, INC.

FibroGen, Inc. (the "Corporation"), a corporation organized and existing under and by virtue of the General Corporation Law of the State of Delaware, DOES HEREBY CERTIFY that:

1. The name of the Corporation is FibroGen, Inc.

2. The Certificate of Amendment of the Certificate of Designations of Series D Convertible Preferred Stock of the Corporation (the "Amended Designation") was filed in the office of the Secretary of State of the State of Delaware on July 26, 2002 and the Amended Designation requires correction as permitted by subsection (f) of Section 103 of the General Corporation Law of the State of Delaware.

3. The inaccuracy or defect of the Amended Designation to be corrected is that the Amended Designation is an inaccurate record of the corporate action referred to therein. The increase in the authorized number of shares of Series D Preferred Stock referred to therein and effected thereby was not an amendment to the certificate of incorporation of the Corporation adopted in accordance with the provisions of Sections 228 and 242 of the General Corporation Law of the State of Delaware, but was instead duly authorized and directed by a resolution adopted by the Board of Directors of the Corporation in accordance with Section 151(g) of the General Corporation Law of the State of Delaware.

4. The Instrument is corrected to read in its entirety as follows:

CERTIFICATE OF INCREASE
OF
SERIES D CONVERTIBLE PREFERRED STOCK
OF
FIBROGEN, INC.

(Pursuant to Section 151 of the General Corporation Law of the State of Delaware)

FibroGen, Inc. (the "Corporation"), a corporation organized and existing under the General Corporation Law of the State of Delaware, in accordance with the provisions of Section 151(g) thereof, DOES HEREBY CERTIFY:

That pursuant to the authority conferred upon the Board of Directors by the certificate of incorporation of the Corporation, the Board of Directors of the Corporation has adopted a resolution authorizing and directing the increase in the number of authorized shares of Series D Convertible Preferred Stock of the Corporation to 2,090,910 shares of Series D Preferred Stock.

IN WITNESS WHEREOF, the Corporation has caused this Certificate to be executed by the undersigned, a duly authorized officer of the Corporation, this 16 day of October, 2014.

FIBROGEN, INC.

By: */s/ Michael Lowenstein*
Name: Michael Lowenstein
Title: Assistant Secretary

CERTIFICATE OF VALIDATION
OF
CORRECTED CERTIFICATE OF AMENDMENT OF THE
CERTIFICATE OF DESIGNATIONS
OF
SERIES D CONVERTIBLE PREFERRED STOCK
OF
FIBROGEN, INC.

Pursuant to Section 204 of the
General Corporation Law of the State of Delaware

FibroGen, Inc., a corporation organized and existing under the laws of the State of Delaware (the "Corporation"), certifies as follows:

1. On September 17, 2014, the board of directors of the Corporation adopted the resolutions attached hereto (without the exhibits or schedules thereto) as Exhibit A. On September 30, 2014, the stockholders of the Corporation, acting by written consent in lieu of a meeting in accordance with Section 228 of the General Corporation Law of the State of Delaware adopted the resolutions attached hereto (without the exhibit thereto) as Exhibit B. The foregoing resolutions of the board of directors and of the stockholders were duly adopted by the board of directors and by the stockholders, respectively, in accordance with the provisions of Section 204 of the General Corporation Law of the State of Delaware.

2. The certificate that was previously filed under Section 103 of the General Corporation Law of the State of Delaware in respect of the First Series D Amendment as defined and identified in the resolutions attached as Exhibit A and Exhibit B hereto was the Certificate of Amendment of the Certificate of Designation of Series D Convertible Preferred Stock of the Corporation filed with the Secretary of State of the State of Delaware on July 26, 2002, as corrected by the Corrected Certificate of Amendment of the Certificate of Designations of Series D Convertible Preferred Stock of the Corporation (the "Corrected Certificate") filed with the Secretary of State of the State of Delaware on October 16, 2014.

3. Attached hereto as Exhibit C are the provisions of a certificate of amendment of the certificate of incorporation of the Corporation as then in effect (the "Certificate of Incorporation") as would be required under Section 242 of the General Corporation Law of the State of Delaware to be included in a certificate of amendment of the Certificate of Incorporation to increase the total number of authorized shares of preferred stock set forth in the Certificate of Incorporation to be effective as of July 26, 2002 at 4:59 p.m. (Eastern).

4. Attached hereto as Exhibit D is a copy of the Corrected Certificate that was previously filed with the Secretary of State of the State of Delaware on October 16, 2014.

[*Remainder of Page Intentionally Left Blank*]

IN WITNESS WHEREOF, the Corporation has caused this Certificate of Validation to be executed by its duly authorized officer this 16 day of October, 2014.

FIBROGEN, INC.

By: */s/ Michael Lowenstein*
Name: Michael Lowenstein
Title: Assistant Secretary

Exhibit A

Board Resolutions

WHEREAS, in connection with the issuance and sale of shares of Series B Convertible Preferred Stock, par value $0.01 per share (the "***Series B Preferred Stock***"), of the Company, the Certificate of Designations of Series B Convertible Preferred Stock of the Company (the "***Series B Certificate of Designation***") was filed with the Secretary of State of the State of Delaware (the "***Secretary of State***") on November 8, 1995;

WHEREAS, prior to the filing of the Series B Certificate of Designation, the Company issued and sold 2,207,693 shares of Series B Preferred Stock on September 30, 1995 (the "***Initial Series B Financing***");

WHEREAS, the Company has not been able to locate the resolutions of the Board of Directors (the "***Board***") approving and declaring advisable the Series B Certificate of Designation and approving and authorizing the issuance and sale of shares of Series B Preferred Stock in the Initial Series B Financing;

WHEREAS, in connection with the issuance and sale of additional shares of Series B Preferred Stock, the Board approved and declared advisable, the Amended Designation of Series B Convertible Preferred Stock of the Company (the "***Series B Amendment***"), which was filed with the Secretary of State on April 19, 1996;

WHEREAS, prior to the filing of the Series B Amendment, the Company issued and sold 2,061,401 shares of Series B Preferred Stock on March 31, 1996 (the "***Subsequent Series B Financing***");

WHEREAS, in connection with the issuance and sale of shares of Series D Convertible Preferred Stock, par value $0.01 per share (the "***Series D Preferred Stock***"), of the Company, the Board approved and declared advisable, the Amended Designation of Series D Convertible Preferred Stock of the Company (the "***Fourth Series D Amendment***"), which was filed with the Secretary of State on December 21, 2006;

WHEREAS, prior to the filing of the Fourth Series D Amendment, the Company issued and sold 279,999 shares of Series D Preferred Stock on March 29, 2006 (the "***Series D Financing***" and, together with the Initial Series B Financing and the Subsequent Series B Financing, the "***Financings***");

WHEREAS, the Board approved and declared advisable the Certificate of Designations of Series E Preferred Stock of the Company (the "***Series E Certificate of Designation***"), which was filed with the Secretary of State on May 16, 2000, which certificate of designation designated shares of preferred stock in excess of the total number of authorized shares of preferred stock set forth in the certificate of incorporation (as amended and/or restated from time to time, the "***Certificate of Incorporation***");

WHEREAS, the Board approved and declared advisable, the Amended Designation of Series D Preferred Stock of the Company (the "***First Series D Amendment***"), which was filed with the Secretary of State on July 26, 2002, which amendment designated shares of preferred stock in excess of the total number of authorized shares of preferred stock set forth in the Certificate of Incorporation;

WHEREAS, the Board approved and declared advisable, the Amended Designation of Series D Preferred Stock of the Company (the "***Second Series D Amendment***" and together with the First Series D Amendment, the "***Early Series D Amendments***"), which was filed with the Secretary of State on December 27, 2002, which amendment designated shares of preferred stock in excess of the total number of authorized shares of preferred stock set forth in the Certificate of Incorporation;

WHEREAS, the Board approved and declared advisable the Certificate of Designations of Series F Preferred Stock of the Company (the "***Series F Certificate of Designation***"), which was filed with the Secretary of State on December 27, 2004, which certificate of designation designated shares of preferred stock in excess of the total number of authorized shares of preferred stock set forth in the Certificate of Incorporation;

WHEREAS, the Board approved and declared advisable, the Amended Designation of Series F Preferred Stock of the Company (the "***First Series F Amendment***"), which was filed with the Secretary of State on January 31, 2005, which amendment designated shares of preferred stock in excess of the total number of authorized shares of preferred stock set forth in the Certificate of Incorporation;

WHEREAS, the Board approved and declared advisable, the Amended Designation of Series F Preferred Stock of the Company (the "***Second Series F Amendment***" and together with the First Series F Amendment, the "***Series F Amendments***"), which was filed with the Secretary of State on November 7, 2005, which amendment designated shares of preferred stock in excess of the total number of authorized shares of preferred stock set forth in the Certificate of Incorporation;

WHEREAS, on March 29, 2006, after previously approving the issuance of up to 550,000 shares of the Company's Preferred Stock in connection with a merger, the Company issued shares of Series D Preferred Stock in connection with said merger in excess of the total number of shares designated as Series D Preferred Stock in the Amended Designation of Series D Convertible Preferred Stock of the Company (the "***Third Series D Amendment***"), which was filed with the Secretary of State on February 19, 2004, and in excess of the total number of shares designated as Series D Preferred Stock in the Fourth Series D Amendment, which was filed on December 21, 2006 (the "***Series D Overissue***");

WHEREAS, the Company from time to time granted certain stock options and warrants and issued certain shares of its stock, each as set forth on **Attachment 1-A** hereto, without record of, or prior to, approval by the Board (collectively, the "***Securities Issuances***");

WHEREAS, for the avoidance of doubt, the Board has determined that it is advisable and in the best interests of the Company and its stockholders to address any potential issues that may arise in light thereof;

WHEREAS, the Board has determined that it is advisable and in the best interests of the Company and its stockholders to ratify all of the above corporate actions (the "***Ratification***"), in each case pursuant to and in accordance with Section 204 of the General Corporation Law; and

WHEREAS, any claim that any of the potentially defective corporate acts or putative stock referenced herein being ratified under Section 204 of the General Corporation Law is void or voidable due to the identified potential failure of authorization, or that the Delaware Court of Chancery should declare in its discretion that the ratification thereof in accordance with Section 204 of the General Corporation Law not be effective or be effective only on certain conditions must be brought within 120 days from the relevant validation effective time.

NOW, THEREFORE, BE IT RESOLVED, that (i) each of the Financings, (ii) the filing and effectiveness of each of the Series B Certificate of Designation, the Series E Certificate of Designation, the Early Series D Amendments, the Series F Certificate of Designation and the Series F Amendments with the Secretary of State, (iii) the Series D Overissue, and (iv) each of the Securities Issuances, are the potentially defective corporate acts to be ratified by the Ratification.

RESOLVED, FURTHER, that the time of the Initial Series B Financing was September 30, 1995, the time of the Subsequent Series B Financing was March 31, 1996, and the time of the Series D Financing was March 29, 2006.

RESOLVED, FURTHER, that the time of the filing and effectiveness of the Series B Certificate of Designation was November 8, 1995, the time of the filing and effectiveness of the Series E Certificate of Designation was May 16, 2000, the time of the filing and effectiveness of the First Series D Amendment was July 26, 2002, the time of the filing and effectiveness of the Second Series D Amendment was December 27, 2002, the time of the filing and effectiveness of the Series F Certificate of Designation was December 27, 2004, the time of the filing and effectiveness of the First Series F Amendment was January 31, 2005 and the time of the filing and effectiveness of the Second Series F Amendment was November 7, 2005.

RESOLVED, FURTHER, that the time of the Series D Overissue was March 29, 2006.

RESOLVED, FURTHER, that the time of each of the Securities Issuances is as set forth on **Attachment 1-A**.

RESOLVED, FURTHER, that the Initial Series B Financing involved the issuance of 2,207,693 shares of Series B Preferred Stock on September 30, 1995, the Subsequent Series B Financing involved the issuance of 2,061,401 shares of Series B Preferred Stock on March 31, 1996 and the Series D Financing involved the issuance of 279,999 shares of Series D Preferred Stock on March 29, 2006, all of which shares are putative stock.

RESOLVED, FURTHER, that the Series D Overissue involved the issuance of 54 shares of Series D Preferred Stock on March 29, 2006, which shares are putative stock.

RESOLVED, FURTHER, that the Securities Issuances involved the issuance of shares of putative stock (or options or warrants in respect thereof), the number and type of shares of putative stock issued, and the date or dates upon which such shares of stock were purported to have been issued is as set forth on **Attachment 1-A**, together with the vesting terms and grant or issuance price, as applicable.

RESOLVED, FURTHER, that the Board hereby identifies the following as the failures of authorization in respect of the Financings: (i) the failure of each of the Series B Certificate of Designation, Series B Amendment and the Fourth Series D Amendment, as the case may be, to have been filed and to have become effective with the Secretary of State prior to the issuance of shares in connection with each such Financing, and (ii) solely in respect of the Initial Series B Financing, the potential failure of the Board to have approved and declared advisable the Series

B Certificate of Designation prior to the filing and effectiveness thereof with the Secretary of State and to have validly authorized the issuance of shares of Series B Preferred Stock prior to such issuance.

RESOLVED, FURTHER, that the Board hereby identifies the potential failure of the Board to have approved and declared advisable the Series B Certificate of Designation prior to the filing and effectiveness thereof with the Secretary of State as the failure of authorization in respect of the Series B Certificate of Designation.

RESOLVED, FURTHER, that the Board hereby identifies the following as the failure of authorization in respect of the filing and effectiveness of the Series E Certificate of Designation, the Early Series D Amendments, the Series F Certificate of Designation and the Series F Amendments: the failure of the total number of authorized shares of preferred stock in the Certificate of Incorporation to have been increased pursuant to an amendment thereto or an amendment and restatement thereof, prior to the Board's approval of the Series E Certificate of Designation, the Early Series D Amendments, the Series F Certificate of Designation and the Series F Amendments, as the case may be, and the filing and effectiveness thereof with the Secretary of State.

RESOLVED, FURTHER, that the Board hereby identifies the following as the failures of authorization in respect of the Series D Overissue: the failure of the total number of shares designated as Series D Preferred Stock to have been increased pursuant to an amendment to the Third Series D Amendment prior to the issuance thereof;

RESOLVED, FURTHER, that the Board hereby identifies the following as the failure of authorization in respect of the Securities Issuances: the failure of the Board to have validly authorized the issuance thereof prior to such issuance.

RESOLVED, FURTHER, that, pursuant to and in accordance with Section 204 of the General Corporation Law, the Ratification be, and hereby is, approved, adopted and confirmed in all respects.

RESOLVED, FURTHER, that these resolutions authorizing the Ratification shall be submitted to the holders of valid stock (as defined in Section 204(h) of the General Corporation Law) of the Company entitled to vote thereon for adoption thereby, and the Board of Directors recommends that such stockholders adopt these resolutions authorizing the Ratification.

RESOLVED FURTHER, that the record date (the "***Record Date***") for determining the stockholders of the Company entitled to vote on these resolutions authorizing the Ratification shall be the close of business on the date hereof.

RESOLVED, FURTHER, that the officers of the Company be, and each hereby is, authorized, empowered and directed, for and on behalf of the Company, to deliver a notice of the Ratification in the form and containing the information required by Section 204 of the General Corporation Law and, if the resolutions authorizing the Ratification are adopted by written consent of stockholders in lieu of a meeting, Section 228(e) of the General Corporation Law.

RESOLVED, FURTHER, that, subject to the adoption of the resolutions authorizing the Ratification by the stockholders, the officers of the Company be, and each hereby is, authorize, empowered and directed, for and on behalf of the Company, to execute and file or cause to be filed with the Secretary of State, a certificate of validation in respect of each of (i) the Initial Series B Financing, (ii) the Subsequent Series B Financing, (iii) the Series D Financing, (iv) the Series E Certificate of Designation, (v) the Early Series D Amendments, (vi) the Series F Certificate of Designation. (vii) the Series F Amendments, and (viii) the Series D Overissue in each case in the form prescribed by Section 204 of the General Corporation Law.

RESOLVED, FURTHER, that, any time before the validation effective time in respect of the ratification of the defective corporate acts set forth herein, the Board may abandon such ratification, as the case may be, before or after stockholder approval thereof, without further action by the stockholders.

RESOLVED, FURTHER, that the officers of the Company be, and each hereby is, authorized, empowered and directed, for and on behalf of the Company, to take any and all actions, to negotiate for and enter into agreements and amendments to agreements, to perform all such acts and things, to execute, file, deliver or record in the name and on behalf of the Company, all such certificates (including, but not limited to, a certificate of validation in respect of each of (i) the Initial Series B Financing, (ii) the Subsequent Series B Financing (iii) the Series D Financing, (iv) the Series E Certificate of Designation, (v) the Early Series D Amendments, (vi) the Series F Certificate of Designation, (vii) the Series F Amendments and (viii) the Series D Overissue), instruments, agreements or other documents, and to make all such payments as they, in their judgment, or in the judgment of any one or more of them, may deem necessary, advisable or appropriate in order to carry out the purpose and intent of, or consummate the transactions contemplated by the foregoing resolutions and/or all of the transactions contemplated therein or thereby, the authorization therefor to be conclusively evidenced by the taking of such action or the execution and delivery of such certificates, instruments, agreements or documents.

Exhibit B

Stockholder Resolutions

WHEREAS, the Board of Directors of the Company (the "***Board***") has identified certain potentially defective corporate acts in the resolutions attached hereto as **Attachment 1** (the "***Board Resolutions***"), which Board Resolutions are incorporated herein by reference;

WHEREAS, for the avoidance of doubt, the Board has determined that it is advisable and in the best interests of the Company and its stockholders to ratify all of the potentially defective corporate acts set forth in the Board Resolutions by approving and adopting the Ratification (as defined in the Board Resolutions) pursuant to and in accordance with Section 204 of the General Corporation Law;

WHEREAS, the Board has approved and adopted the Ratification and has directed that the Board Resolutions approving the Ratification be submitted to the holders of valid stock (as defined in Section 204(h) of the General Corporation Law) of the Company entitled to vote thereon for adoption thereby;

WHEREAS, the Board has recommended that the holders of valid stock of the Company entitled to vote on the adoption of the Board Resolutions adopt the Board Resolutions authorizing the Ratification; and

WHEREAS, any claim that any of the potentially defective corporate acts or putative stock referenced in the Board Resolutions being ratified under Section 204 of the General Corporation Law is void or voidable due to the identified potential failure of authorization, or that the Delaware Court of Chancery should declare in its discretion that the ratification thereof in accordance with Section 204 of the General Corporation Law not be effective or be effective only on certain conditions must be brought within 120 days from the relevant validation effective time.

NOW, THEREFORE, BE IT RESOLVED, that, pursuant to and in accordance with Section 204 of the General Corporation Law, the Board Resolutions authorizing the Ratification be, and hereby are, approved, adopted and confirmed in all respects.

RESOLVED, FURTHER, that the officers of the Company be, and each hereby is, authorized, empowered and directed, for and on behalf of the Company, to execute and file or cause to be filed with the Secretary of State of the State of Delaware, the certificates of validation referenced in the Board Resolutions.

RESOLVED, FURTHER, that, any time before the validation effective time, the Board of Directors may abandon the Board Resolutions effecting the Ratification, before or after stockholder approval thereof, without further action by the stockholders.

RESOLVED, FURTHER, that the officers of the Company be, and each hereby is, authorized, empowered and directed, for and on behalf of the Company, to take any and all actions, to negotiate for and enter into agreements and amendments to agreements, to perform all such acts and things, to execute, file, deliver or record in the name and on behalf of the Company, all such certificates (including, but not limited to, the certificates of validation referenced in the Board Resolutions), instruments, agreements or other documents, and to make all such payments as they, in their judgment, or in the judgment of any one or more of them, may deem necessary, advisable or appropriate in order to carry out the purpose and intent of, or consummate the transactions contemplated by the foregoing resolutions and/or all of the transactions contemplated therein or thereby, the authorization therefor to be conclusively evidenced by the taking of such action or the execution and delivery of such certificates, instruments, agreements or documents.

Exhibit C

Certificate of Amendment

CERTIFICATE OF AMENDMENT OF THE
CERTIFICATE OF INCORPORATION
OF
FIBROGEN, INC.

It is hereby certified that:

1. The name of the corporation (hereinafter called the "Corporation") is FibroGen, Inc.

2. The certificate of incorporation of the Corporation is hereby amended by striking out the first paragraph of Article Fourth and substituting in lieu of said paragraph the following new paragraph:

"FOURTH. The total number of shares of all classes of capital stock which the corporation shall have the authority to issue is 152,108,505 shares, comprised of 100,000,000 shares of Common Stock with a par value of One Cent ($.01) per share (the "Common Stock") and 52,108,505 shares of Preferred Stock with a par value of One Cent ($.01) per share (the "Preferred Stock")."

3. The foregoing amendment was duly adopted in accordance with the provisions of Section 242 of the General Corporation Law of the State of Delaware and was approved by the stockholders acting by written consent in accordance Section 228 of the General Corporation Law of the State of Delaware.

FIBROGEN, INC.

By: */s/ Michael Lowenstein*
Name: Michael Lowenstein
Title: Assistant Secretary

Exhibit D

Corrected Certificate

CORRECTED CERTIFICATE OF AMENDMENT OF THE
CERTIFICATE OF DESIGNATIONS
OF
SERIES D CONVERTIBLE PREFERRED STOCK
OF
FIBROGEN, INC.

FibroGen, Inc. (the "Corporation"), a corporation organized and existing under and by virtue of the General Corporation Law of the State of Delaware, DOES HEREBY CERTIFY that:

1. The name of the Corporation is FibroGen, Inc.

2. The Certificate of Amendment of the Certificate of Designations of Series D Convertible Preferred Stock of the Corporation (the "Amended Designation") was filed in the office of the Secretary of State of the State of Delaware on July 26, 2002 and the Amended Designation requires correction as permitted by subsection (f) of Section 103 of the General Corporation Law of the State of Delaware.

3. The inaccuracy or defect of the Amended Designation to be corrected is that the Amended Designation is an inaccurate record of the corporate action referred to therein. The increase in the authorized number of shares of Series D Preferred Stock referred to therein and effected thereby was not an amendment to the certificate of incorporation of the Corporation adopted in accordance with the provisions of Sections 228 and 242 of the General Corporation Law of the State of Delaware, but was instead duly authorized and directed by a resolution adopted by the Board of Directors of the Corporation in accordance with Section 151(g) of the General Corporation Law of the State of Delaware.

4. The Instrument is corrected to read in its entirety as follows:

CERTIFICATE OF INCREASE
OF
SERIES D CONVERTIBLE PREFERRED STOCK
OF
FIBROGEN, INC.

(Pursuant to Section 151 of the General Corporation Law of the State of Delaware)

FibroGen, Inc. (the "Corporation"), a corporation organized and existing under the General Corporation Law of the State of Delaware, in accordance with the provisions of Section 151(g) thereof, DOES HEREBY CERTIFY:

That pursuant to the authority conferred upon the Board of Directors by the certificate of incorporation of the Corporation, the Board of Directors of the Corporation has adopted a resolution authorizing and directing the increase in the number of authorized shares of Series D Convertible Preferred Stock of the Corporation to 2,090,910 shares of Series D Preferred Stock.

IN WITNESS WHEREOF, the Corporation has caused this Certificate to be executed by the undersigned, a duly authorized officer of the Corporation, this 16 day of October, 2014.

FIBROGEN, INC.

By: */s/ Michael Lowenstein*
Name: Michael Lowenstein
Title: Assistant Secretary

CORRECTED CERTIFICATE OF AMENDMENT OF THE
CERTIFICATE OF DESIGNATIONS
OF
SERIES D CONVERTIBLE PREFERRED STOCK
OF
FIBROGEN, INC.

FibroGen, Inc. (the "Corporation"), a corporation organized and existing under and by virtue of the General Corporation Law of the State of Delaware, DOES HEREBY CERTIFY that:

1. The name of the Corporation is FibroGen, Inc.

2. The Certificate of Amendment of the Certificate of Designations of Series D Convertible Preferred Stock of the Corporation (the "Amended Designation") was filed in the office of the Secretary of State of the State of Delaware on December 27, 2002 and the Amended Designation requires correction as permitted by subsection (f) of Section 103 of the General Corporation Law of the State of Delaware.

3. The inaccuracy or defect of the Amended Designation to be corrected is that the Amended Designation is an inaccurate record of the corporate action referred to therein. The increase in the authorized number of shares of Series D Preferred Stock referred to therein and effected thereby was not an amendment to the certificate of incorporation of the Corporation adopted in accordance with the provisions of Sections 228 and 242 of the General Corporation Law of the State of Delaware, but was instead duly authorized and directed by a resolution adopted by the Board of Directors of the Corporation in accordance with Section 151(g) of the General Corporation Law of the State of Delaware.

4. The Instrument is corrected to read in its entirety as follows:

CERTIFICATE OF INCREASE
OF
SERIES D CONVERTIBLE PREFERRED STOCK
OF
FIBROGEN, INC.

(Pursuant to Section 151 of the General Corporation Law of the State of Delaware)

FibroGen, Inc. (the "Corporation"), a corporation organized and existing under the General Corporation Law of the State of Delaware, in accordance with the provisions of Section 151(g) thereof, DOES HEREBY CERTIFY:

That pursuant to the authority conferred upon the Board of Directors by the certificate of incorporation of the Corporation, the Board of Directors of the Corporation has adopted a resolution authorizing and directing the increase in the number of authorized shares of Series D Convertible Preferred Stock of the Corporation to 2,272,729 shares of Series D Preferred Stock.

IN WITNESS WHEREOF, the Corporation has caused this Certificate to be executed by the undersigned, a duly authorized officer of the Corporation, this 16 day of October, 2014.

FIBROGEN, INC.

By: */s/ Michael Lowenstein*
Name: Michael Lowenstein
Title: Assistant Secretary

CERTIFICATE OF VALIDATION
OF
CORRECTED CERTIFICATE OF AMENDMENT OF THE
CERTIFICATE OF DESIGNATIONS
OF
SERIES D CONVERTIBLE PREFERRED STOCK
OF
FIBROGEN, INC.

Pursuant to Section 204 of the
General Corporation Law of the State of Delaware

FibroGen, Inc., a corporation organized and existing under the laws of the State of Delaware (the "Corporation"), certifies as follows:

1. On September 17, 2014, the board of directors of the Corporation adopted the resolutions attached hereto (without the exhibits or schedules thereto) as Exhibit A. On September 30, 2014, the stockholders of the Corporation, acting by written consent in lieu of a meeting in accordance with Section 228 of the General Corporation Law of the State of Delaware adopted the resolutions attached hereto (without the exhibit thereto) as Exhibit B. The foregoing resolutions of the board of directors and of the stockholders were duly adopted by the board of directors and by the stockholders, respectively, in accordance with the provisions of Section 204 of the General Corporation Law of the State of Delaware.

2. The certificate that was previously filed under Section 103 of the General Corporation Law of the State of Delaware in respect of the Second Series D Amendment as defined and identified in the resolutions attached as Exhibit A and Exhibit B hereto was the Certificate of Amendment of the Certificate of Designation of Series D Convertible Preferred Stock of the Corporation filed with the Secretary of State of the State of Delaware on December 27, 2002, as corrected by the Corrected Certificate of Amendment of the Certificate of Designations of Series D Convertible Preferred Stock of the Corporation (the "Corrected Certificate") filed with the Secretary of State of the State of Delaware on October 16, 2014.

3. Attached hereto as Exhibit C are the provisions of a certificate of amendment of the certificate of incorporation of the Corporation as then in effect (the "Certificate of Incorporation") as would be required under Section 242 of the General Corporation Law of the State of Delaware to be included in a certificate of amendment of the Certificate of Incorporation to increase the total number of authorized shares of preferred stock set forth in the Certificate of Incorporation to be effective as of December 27, 2002 at 3:59 p.m. (Eastern).

4. Attached hereto as Exhibit D is a copy of the Corrected Certificate that was previously filed with the Secretary of State of the State of Delaware on October 16, 2014.

IN WITNESS WHEREOF, the Corporation has caused this Certificate of Validation to be executed by its duly authorized officer this 16 day of October, 2014.

FIBROGEN, INC.

By: */s/ Michael Lowenstein*
Name: Assistant Secretary
Title: Michael Lowenstein

Exhibit A

Board Resolutions

WHEREAS, in connection with the issuance and sale of shares of Series B Convertible Preferred Stock, par value $0.01 per share (the "***Series B Preferred Stock***"), of the Company, the Certificate of Designations of Series B Convertible Preferred Stock of the Company (the "***Series B Certificate of Designation***") was filed with the Secretary of State of the State of Delaware (the "***Secretary of State***") on November 8, 1995;

WHEREAS, prior to the filing of the Series B Certificate of Designation, the Company issued and sold 2,207,693 shares of Series B Preferred Stock on September 30, 1995 (the "***Initial Series B Financing***");

WHEREAS, the Company has not been able to locate the resolutions of the Board of Directors (the "***Board***") approving and declaring advisable the Series B Certificate of Designation and approving and authorizing the issuance and sale of shares of Series B Preferred Stock in the Initial Series B Financing;

WHEREAS, in connection with the issuance and sale of additional shares of Series B Preferred Stock, the Board approved and declared advisable, the Amended Designation of Series B Convertible Preferred Stock of the Company (the "***Series B Amendment***"), which was filed with the Secretary of State on April 19, 1996;

WHEREAS, prior to the filing of the Series B Amendment, the Company issued and sold 2,061,401 shares of Series B Preferred Stock on March 31, 1996 (the "***Subsequent Series B Financing***");

WHEREAS, in connection with the issuance and sale of shares of Series D Convertible Preferred Stock, par value $0.01 per share (the "***Series D Preferred Stock***"), of the Company, the Board approved and declared advisable, the Amended Designation of Series D Convertible Preferred Stock of the Company (the "***Fourth Series D Amendment***"), which was filed with the Secretary of State on December 21, 2006;

WHEREAS, prior to the filing of the Fourth Series D Amendment, the Company issued and sold 279,999 shares of Series D Preferred Stock on March 29, 2006 (the "***Series D Financing***" and, together with the Initial Series B Financing and the Subsequent Series B Financing, the "***Financings***");

WHEREAS, the Board approved and declared advisable the Certificate of Designations of Series E Preferred Stock of the Company (the "***Series E Certificate of Designation***"), which was filed with the Secretary of State on May 16, 2000, which certificate of designation designated shares of preferred stock in excess of the total number of authorized shares of preferred stock set forth in the certificate of incorporation (as amended and/or restated from time to time, the "***Certificate of Incorporation***");

WHEREAS, the Board approved and declared advisable, the Amended Designation of Series D Preferred Stock of the Company (the "***First Series D Amendment***"), which was filed with the Secretary of State on July 26, 2002, which amendment designated shares of preferred stock in excess of the total number of authorized shares of preferred stock set forth in the Certificate of Incorporation;

WHEREAS, the Board approved and declared advisable, the Amended Designation of Series D Preferred Stock of the Company (the "***Second Series D Amendment***" and together with the First Series D Amendment, the "***Early Series D Amendments***"), which was filed with the Secretary of State on December 27, 2002, which amendment designated shares of preferred stock in excess of the total number of authorized shares of preferred stock set forth in the Certificate of Incorporation;

WHEREAS, the Board approved and declared advisable the Certificate of Designations of Series F Preferred Stock of the Company (the "***Series F Certificate of Designation***"), which was filed with the Secretary of State on December 27, 2004, which certificate of designation designated shares of preferred stock in excess of the total number of authorized shares of preferred stock set forth in the Certificate of Incorporation;

WHEREAS, the Board approved and declared advisable, the Amended Designation of Series F Preferred Stock of the Company (the "***First Series F Amendment***"), which was filed with the Secretary of State on January 31, 2005, which amendment designated shares of preferred stock in excess of the total number of authorized shares of preferred stock set forth in the Certificate of Incorporation;

WHEREAS, the Board approved and declared advisable, the Amended Designation of Series F Preferred Stock of the Company (the "***Second Series F Amendment***" and together with the First Series F Amendment, the "***Series F Amendments***"), which was filed with the Secretary of State on November 7, 2005, which amendment designated shares of preferred stock in excess of the total number of authorized shares of preferred stock set forth in the Certificate of Incorporation;

WHEREAS, on March 29, 2006, after previously approving the issuance of up to 550,000 shares of the Company's Preferred Stock in connection with a merger, the Company issued shares of Series D Preferred Stock in connection with said merger in excess of the total number of shares designated as Series D Preferred Stock in the Amended Designation of Series D Convertible Preferred Stock of the Company (the "***Third Series D Amendment***"), which was filed with the Secretary of State on February 19, 2004, and in excess of the total number of shares designated as Series D Preferred Stock in the Fourth Series D Amendment, which was filed on December 21, 2006 (the "***Series D Overissue***");

WHEREAS, the Company from time to time granted certain stock options and warrants and issued certain shares of its stock, each as set forth on **Attachment 1-A** hereto, without record of, or prior to, approval by the Board (collectively, the "***Securities Issuances***");

WHEREAS, for the avoidance of doubt, the Board has determined that it is advisable and in the best interests of the Company and its stockholders to address any potential issues that may arise in light thereof;

WHEREAS, the Board has determined that it is advisable and in the best interests of the Company and its stockholders to ratify all of the above corporate actions (the "***Ratification***"), in each case pursuant to and in accordance with Section 204 of the General Corporation Law; and

WHEREAS, any claim that any of the potentially defective corporate acts or putative stock referenced herein being ratified under Section 204 of the General Corporation Law is void or voidable due to the identified potential failure of authorization, or that the Delaware Court of Chancery should declare in its discretion that the ratification thereof in accordance with Section 204 of the General Corporation Law not be effective or be effective only on certain conditions must be brought within 120 days from the relevant validation effective time.

NOW, THEREFORE, BE IT RESOLVED, that (i) each of the Financings, (ii) the filing and effectiveness of each of the Series B Certificate of Designation, the Series E Certificate of Designation, the Early Series D Amendments, the Series F Certificate of Designation and the Series F Amendments with the Secretary of State, (iii) the Series D Overissue, and (iv) each of the Securities Issuances, are the potentially defective corporate acts to be ratified by the Ratification.

RESOLVED, FURTHER, that the time of the Initial Series B Financing was September 30, 1995, the time of the Subsequent Series B Financing was March 31, 1996, and the time of the Series D Financing was March 29, 2006.

RESOLVED, FURTHER, that the time of the filing and effectiveness of the Series B Certificate of Designation was November 8, 1995, the time of the filing and effectiveness of the Series E Certificate of Designation was May 16, 2000, the time of the filing and effectiveness of the First Series D Amendment was July 26, 2002, the time of the filing and effectiveness of the Second Series D Amendment was December 27, 2002, the time of the filing and effectiveness of the Series F Certificate of Designation was December 27, 2004, the time of the filing and effectiveness of the First Series F Amendment was January 31, 2005 and the time of the filing and effectiveness of the Second Series F Amendment was November 7, 2005.

RESOLVED, FURTHER, that the time of the Series D Overissue was March 29, 2006.

RESOLVED, FURTHER, that the time of each of the Securities Issuances is as set forth on **Attachment 1-A**.

RESOLVED, FURTHER, that the Initial Series B Financing involved the issuance of 2,207,693 shares of Series B Preferred Stock on September 30, 1995, the Subsequent Series B Financing involved the issuance of 2,061,401 shares of Series B Preferred Stock on March 31, 1996 and the Series D Financing involved the issuance of 279,999 shares of Series D Preferred Stock on March 29, 2006, all of which shares are putative stock.

RESOLVED, FURTHER, that the Series D Overissue involved the issuance of 54 shares of Series D Preferred Stock on March 29, 2006, which shares are putative stock.

RESOLVED, FURTHER, that the Securities Issuances involved the issuance of shares of putative stock (or options or warrants in respect thereof), the number and type of shares of putative stock issued, and the date or dates upon which such shares of stock were purported to have been issued is as set forth on **Attachment 1-A**, together with the vesting terms and grant or issuance price, as applicable.

RESOLVED, FURTHER, that the Board hereby identifies the following as the failures of authorization in respect of the Financings: (i) the failure of each of the Series B Certificate of Designation, Series B Amendment and the Fourth Series D Amendment, as the case may be, to have been filed and to have become effective with the Secretary of State prior to the issuance of shares in connection with each such Financing, and (ii) solely in respect of the Initial Series B Financing, the potential failure of the Board to have approved and declared advisable the Series B

Certificate of Designation prior to the filing and effectiveness thereof with the Secretary of State and to have validly authorized the issuance of shares of Series B Preferred Stock prior to such issuance.

RESOLVED, FURTHER, that the Board hereby identifies the potential failure of the Board to have approved and declared advisable the Series B Certificate of Designation prior to the filing and effectiveness thereof with the Secretary of State as the failure of authorization in respect of the Series B Certificate of Designation.

RESOLVED, FURTHER, that the Board hereby identifies the following as the failure of authorization in respect of the filing and effectiveness of the Series E Certificate of Designation, the Early Series D Amendments, the Series F Certificate of Designation and the Series F Amendments: the failure of the total number of authorized shares of preferred stock in the Certificate of Incorporation to have been increased pursuant to an amendment thereto or an amendment and restatement thereof, prior to the Board's approval of the Series E Certificate of Designation, the Early Series D Amendments, the Series F Certificate of Designation and the Series F Amendments, as the case may be, and the filing and effectiveness thereof with the Secretary of State.

RESOLVED, FURTHER, that the Board hereby identifies the following as the failures of authorization in respect of the Series D Overissue: the failure of the total number of shares designated as Series D Preferred Stock to have been increased pursuant to an amendment to the Third Series D Amendment prior to the issuance thereof;

RESOLVED, FURTHER, that the Board hereby identifies the following as the failure of authorization in respect of the Securities Issuances: the failure of the Board to have validly authorized the issuance thereof prior to such issuance.

RESOLVED, FURTHER, that, pursuant to and in accordance with Section 204 of the General Corporation Law, the Ratification be, and hereby is, approved, adopted and confirmed in all respects.

RESOLVED, FURTHER, that these resolutions authorizing the Ratification shall be submitted to the holders of valid stock (as defined in Section 204(h) of the General Corporation Law) of the Company entitled to vote thereon for adoption thereby, and the Board of Directors recommends that such stockholders adopt these resolutions authorizing the Ratification.

RESOLVED FURTHER, that the record date (the "***Record Date***") for determining the stockholders of the Company entitled to vote on these resolutions authorizing the Ratification shall be the close of business on the date hereof.

RESOLVED, FURTHER, that the officers of the Company be, and each hereby is, authorized, empowered and directed, for and on behalf of the Company, to deliver a notice of the Ratification in the form and containing the information required by Section 204 of the General Corporation Law and, if the resolutions authorizing the Ratification are adopted by written consent of stockholders in lieu of a meeting, Section 228(e) of the General Corporation Law.

RESOLVED, FURTHER, that, subject to the adoption of the resolutions authorizing the Ratification by the stockholders, the officers of the Company be, and each hereby is, authorize, empowered and directed, for and on behalf of the Company, to execute and file or cause to be filed with the Secretary of State, a certificate of validation in respect of each of (i) the Initial Series B Financing, (ii) the Subsequent Series B Financing, (iii) the Series D Financing, (iv) the Series E Certificate of Designation, (v) the Early Series D Amendments, (vi) the Series F Certificate of Designation. (vii) the Series F Amendments, and (viii) the Series D Overissue in each case in the form prescribed by Section 204 of the General Corporation Law.

RESOLVED, FURTHER, that, any time before the validation effective time in respect of the ratification of the defective corporate acts set forth herein, the Board may abandon such ratification, as the case may be, before or after stockholder approval thereof, without further action by the stockholders.

RESOLVED, FURTHER, that the officers of the Company be, and each hereby is, authorized, empowered and directed, for and on behalf of the Company, to take any and all actions, to negotiate for and enter into agreements and amendments to agreements, to perform all such acts and things, to execute, file, deliver or record in the name and on behalf of the Company, all such certificates (including, but not limited to, a certificate of validation in respect of each of (i) the Initial Series B Financing, (ii) the Subsequent Series B Financing (iii) the Series D Financing, (iv) the Series E Certificate of Designation, (v) the Early Series D Amendments, (vi) the Series F Certificate of Designation, (vii) the Series F Amendments and (viii) the Series D Overissue), instruments, agreements or other documents, and to make all such payments as they, in their judgment, or in the judgment of any one or more of them, may deem necessary, advisable or appropriate in order to carry out the purpose and intent of, or consummate the transactions contemplated by the foregoing resolutions and/or all of the transactions contemplated therein or thereby, the authorization therefor to be conclusively evidenced by the taking of such action or the execution and delivery of such certificates, instruments, agreements or documents.

Exhibit B

Stockholder Resolutions

WHEREAS, the Board of Directors of the Company (the "***Board***") has identified certain potentially defective corporate acts in the resolutions attached hereto as **Attachment 1** (the "***Board Resolutions***"), which Board Resolutions are incorporated herein by reference;

WHEREAS, for the avoidance of doubt, the Board has determined that it is advisable and in the best interests of the Company and its stockholders to ratify all of the potentially defective corporate acts set forth in the Board Resolutions by approving and adopting the Ratification (as defined in the Board Resolutions) pursuant to and in accordance with Section 204 of the General Corporation Law;

WHEREAS, the Board has approved and adopted the Ratification and has directed that the Board Resolutions approving the Ratification be submitted to the holders of valid stock (as defined in Section 204(h) of the General Corporation Law) of the Company entitled to vote thereon for adoption thereby;

WHEREAS, the Board has recommended that the holders of valid stock of the Company entitled to vote on the adoption of the Board Resolutions adopt the Board Resolutions authorizing the Ratification; and

WHEREAS, any claim that any of the potentially defective corporate acts or putative stock referenced in the Board Resolutions being ratified under Section 204 of the General Corporation Law is void or voidable due to the identified potential failure of authorization, or that the Delaware Court of Chancery should declare in its discretion that the ratification thereof in accordance with Section 204 of the General Corporation Law not be effective or be effective only on certain conditions must be brought within 120 days from the relevant validation effective time.

NOW, THEREFORE, BE IT RESOLVED, that, pursuant to and in accordance with Section 204 of the General Corporation Law, the Board Resolutions authorizing the Ratification be, and hereby are, approved, adopted and confirmed in all respects.

RESOLVED, FURTHER, that the officers of the Company be, and each hereby is, authorized, empowered and directed, for and on behalf of the Company, to execute and file or cause to be filed with the Secretary of State of the State of Delaware, the certificates of validation referenced in the Board Resolutions.

RESOLVED, FURTHER, that, any time before the validation effective time, the Board of Directors may abandon the Board Resolutions effecting the Ratification, before or after stockholder approval thereof, without further action by the stockholders.

RESOLVED, FURTHER, that the officers of the Company be, and each hereby is, authorized, empowered and directed, for and on behalf of the Company, to take any and all actions, to negotiate for and enter into agreements and amendments to agreements, to perform all such acts and things, to execute, file, deliver or record in the name and on behalf of the Company, all such certificates (including, but not limited to, the certificates of validation referenced in the Board Resolutions), instruments, agreements or other documents, and to make all such payments as they, in their judgment, or in the judgment of any one or more of them, may deem necessary, advisable or appropriate in order to carry out the purpose and intent of, or consummate the transactions contemplated by the foregoing resolutions and/or all of the transactions contemplated therein or thereby, the authorization therefor to be conclusively evidenced by the taking of such action or the execution and delivery of such certificates, instruments, agreements or documents.

Exhibit C

Certificate of Amendment

CERTIFICATE OF AMENDMENT OF THE
CERTIFICATE OF INCORPORATION
OF
FIBROGEN, INC.

It is hereby certified that:

1. The name of the corporation (hereinafter called the "Corporation") is FibroGen, Inc.

2, The certificate of incorporation of the Corporation is hereby amended by striking out the first paragraph of Article Fourth and substituting in lieu of said paragraph the following new paragraph:

"FOURTH. The total number of shares of all classes of capital stock which the corporation shall have the authority to issue is 152,290,324 shares, comprised of 100,000,000 shares of Common Stock with a par value of One Cent ($.01) per share (the "Common Stock") and 52,290,324 shares of Preferred Stock with a par value of One Cent ($.01) per share (the "Preferred Stock")."

3. The foregoing amendment was duly adopted in accordance with the provisions of Section 242 of the General Corporation Law of the State of Delaware and was approved by the stockholders acting by written consent in accordance Section 228 of the General Corporation Law of the State of Delaware.

FIBROGEN, INC.

By: */s/ Michael Lowenstein*
Name: Michael Lowenstein
Title: Assistant Secretary

Exhibit D

Corrected Certificate

CORRECTED CERTIFICATE OF AMENDMENT OF THE
CERTIFICATE OF DESIGNATIONS
OF
SERIES D CONVERTIBLE PREFERRED STOCK
OF
FIBROGEN, INC.

FibroGen, Inc. (the "Corporation"), a corporation organized and existing under and by virtue of the General Corporation Law of the State of Delaware, DOES HEREBY CERTIFY that:

1. The name of the Corporation is FibroGen, Inc.

2. The Certificate of Amendment of the Certificate of Designations of Series D Convertible Preferred Stock of the Corporation (the "Amended Designation") was filed in the office of the Secretary of State of the State of Delaware on December 27, 2002 and the Amended Designation requires correction as permitted by subsection (f) of Section 103 of the General Corporation Law of the State of Delaware.

3. The inaccuracy or defect of the Amended Designation to be corrected is that the Amended Designation is an inaccurate record of the corporate action referred to therein. The increase in the authorized number of shares of Series D Preferred Stock referred to therein and effected thereby was not an amendment to the certificate of incorporation of the Corporation adopted in accordance with the provisions of Sections 228 and 242 of the General Corporation Law of the State of Delaware, but was instead duly authorized and directed by a resolution adopted by the Board of Directors of the Corporation in accordance with Section 151(g) of the General Corporation Law of the State of Delaware.

4. The Instrument is corrected to read in its entirety as follows:

CERTIFICATE OF INCREASE
OF
SERIES D CONVERTIBLE PREFERRED STOCK
OF
FIBROGEN, INC.

(Pursuant to Section 151 of the General Corporation Law of the State of Delaware)

FibroGen, Inc. (the "Corporation"), a corporation organized and existing under the General Corporation Law of the State of Delaware, in accordance with the provisions of Section 151(g) thereof, DOES HEREBY CERTIFY:

That pursuant to the authority conferred upon the Board of Directors by the certificate of incorporation of the Corporation, the Board of Directors of the Corporation has adopted a resolution authorizing and directing the increase in the number of authorized shares of Series D Convertible Preferred Stock of the Corporation to 2,272,729 shares of Series D Preferred Stock.

IN WITNESS WHEREOF, the Corporation has caused this Certificate to be executed by the undersigned, a duly authorized officer of the Corporation, this 16 day of October, 2014.

FIBROGEN, INC.

By: */s/ Michael Lowenstein*
Name: Michael Lowenstein
Title: Assistant Secretary

CERTIFICATE OF VALIDATION
OF
CERTIFICATE OF DESIGNATION OF POWERS,
PREFERENCES AND RIGHTS OF THE SERIES F PREFERRED STOCK
OF
FIBROGEN, INC.

Pursuant to Section 204 of the
General Corporation Law of the State of Delaware

FibroGen, Inc., a corporation organized and existing under the laws of the State of Delaware (the "Corporation"), certifies as follows:

1. On September 17, 2014, the board of directors of the Corporation adopted the resolutions attached hereto (without the exhibits or schedules thereto) as Exhibit A. On September 30, 2014, the stockholders of the Corporation, acting by written consent in lieu of a meeting in accordance with Section 228 of the General Corporation Law of the State of Delaware adopted the resolutions attached hereto (without the exhibit thereto) as Exhibit B. The foregoing resolutions of the board of directors and of the stockholders were duly adopted by the board of directors and by the stockholders, respectively, in accordance with the provisions of Section 204 of the General Corporation Law of the State of Delaware.

2. The certificate that was previously filed under Section 103 of the General Corporation Law of the State of Delaware in respect of the Series F Certificate of Designation as defined and identified in the resolutions attached as Exhibit A and Exhibit B hereto was the Certificate of Designations of Powers, Preferences and Rights of the Series F Convertible Preferred Stock of the Corporation filed with the Secretary of State of the State of Delaware on December 27, 2004.

3. Attached hereto as Exhibit C are the provisions of a certificate of amendment of the certificate of incorporation of the Corporation as then in effect (the "Certificate of Incorporation") as would be required under Section 242 of the General Corporation Law of the State of Delaware to be included in a certificate of amendment of the Certificate of Incorporation to increase the total number of authorized shares of preferred stock set forth in the Certificate of Incorporation to be effective as of December 27, 2004 at 8:41 p.m. (Eastern).

[*Remainder of Page Intentionally Left Blank*]

IN WITNESS WHEREOF, the Corporation has caused this Certificate of Validation to be executed by its duly authorized officer this 16 day of October, 2014.

FIBROGEN, INC.

By: */s/ Michael Lowenstein*
Name: Michael Lowenstein
Title: Assistant Secretary

Exhibit A

Board Resolutions

WHEREAS, in connection with the issuance and sale of shares of Series B Convertible Preferred Stock, par value $0.01 per share (the "***Series B Preferred Stock***"), of the Company, the Certificate of Designations of Series B Convertible Preferred Stock of the Company (the "***Series B Certificate of Designation***") was filed with the Secretary of State of the State of Delaware (the "***Secretary of State***") on November 8, 1995;

WHEREAS, prior to the filing of the Series B Certificate of Designation, the Company issued and sold 2,207,693 shares of Series B Preferred Stock on September 30, 1995 (the "***Initial Series B Financing***");

WHEREAS, the Company has not been able to locate the resolutions of the Board of Directors (the "***Board***") approving and declaring advisable the Series B Certificate of Designation and approving and authorizing the issuance and sale of shares of Series B Preferred Stock in the Initial Series B Financing;

WHEREAS, in connection with the issuance and sale of additional shares of Series B Preferred Stock, the Board approved and declared advisable, the Amended Designation of Series B Convertible Preferred Stock of the Company (the "***Series B Amendment***"), which was filed with the Secretary of State on April 19, 1996;

WHEREAS, prior to the filing of the Series B Amendment, the Company issued and sold 2,061,401 shares of Series B Preferred Stock on March 31, 1996 (the "***Subsequent Series B Financing***");

WHEREAS, in connection with the issuance and sale of shares of Series D Convertible Preferred Stock, par value $0.01 per share (the "***Series D Preferred Stock***"), of the Company, the Board approved and declared advisable, the Amended Designation of Series D Convertible Preferred Stock of the Company (the "***Fourth Series D Amendment***"), which was filed with the Secretary of State on December 21, 2006;

WHEREAS, prior to the filing of the Fourth Series D Amendment, the Company issued and sold 279,999 shares of Series D Preferred Stock on March 29, 2006 (the "***Series D Financing***" and, together with the Initial Series B Financing and the Subsequent Series B Financing, the "***Financings***");

WHEREAS, the Board approved and declared advisable the Certificate of Designations of Series E Preferred Stock of the Company (the "***Series E Certificate of Designation***"), which was filed with the Secretary of State on May 16, 2000, which certificate of designation designated shares of preferred stock in excess of the total number of authorized shares of preferred stock set forth in the certificate of incorporation (as amended and/or restated from time to time, the "***Certificate of Incorporation***");

WHEREAS, the Board approved and declared advisable, the Amended Designation of Series D Preferred Stock of the Company (the "***First Series D Amendment***"), which was filed with the Secretary of State on July 26, 2002, which amendment designated shares of preferred stock in excess of the total number of authorized shares of preferred stock set forth in the Certificate of Incorporation;

WHEREAS, the Board approved and declared advisable, the Amended Designation of Series D Preferred Stock of the Company (the "***Second Series D Amendment***" and together with the First Series D Amendment, the "***Early Series D Amendments***"), which was filed with the Secretary of State on December 27, 2002, which amendment designated shares of preferred stock in excess of the total number of authorized shares of preferred stock set forth in the Certificate of Incorporation;

WHEREAS, the Board approved and declared advisable the Certificate of Designations of Series F Preferred Stock of the Company (the "***Series F Certificate of Designation***"), which was filed with the Secretary of State on December 27, 2004, which certificate of designation designated shares of preferred stock in excess of the total number of authorized shares of preferred stock set forth in the Certificate of Incorporation;

WHEREAS, the Board approved and declared advisable, the Amended Designation of Series F Preferred Stock of the Company (the "***First Series F Amendment***"), which was filed with the Secretary of State on January 31, 2005, which amendment designated shares of preferred stock in excess of the total number of authorized shares of preferred stock set forth in the Certificate of Incorporation;

WHEREAS, the Board approved and declared advisable, the Amended Designation of Series F Preferred Stock of the Company (the "***Second Series F Amendment***" and together with the First Series F Amendment, the "***Series F Amendments***"), which was filed with the Secretary of State on November 7, 2005, which amendment designated shares of preferred stock in excess of the total number of authorized shares of preferred stock set forth in the Certificate of Incorporation;

WHEREAS, on March 29, 2006, after previously approving the issuance of up to 550,000 shares of the Company's Preferred Stock in connection with a merger, the Company issued shares of Series D Preferred Stock in connection with said merger in excess of the total number of shares designated as Series D Preferred Stock in the Amended Designation of Series D Convertible Preferred Stock of the Company (the "***Third Series D Amendment***"), which was filed with the Secretary of State on February 19, 2004, and in excess of the total number of shares designated as Series D Preferred Stock in the Fourth Series D Amendment, which was filed on December 21, 2006 (the "***Series D Overissue***");

WHEREAS, the Company from time to time granted certain stock options and warrants and issued certain shares of its stock, each as set forth on **Attachment 1-A** hereto, without record of, or prior to, approval by the Board (collectively, the "***Securities Issuances***");

WHEREAS, for the avoidance of doubt, the Board has determined that it is advisable and in the best interests of the Company and its stockholders to address any potential issues that may arise in light thereof;

WHEREAS, the Board has determined that it is advisable and in the best interests of the Company and its stockholders to ratify all of the above corporate actions (the "***Ratification***"), in each case pursuant to and in accordance with Section 204 of the General Corporation Law; and

WHEREAS, any claim that any of the potentially defective corporate acts or putative stock referenced herein being ratified under Section 204 of the General Corporation Law is void or voidable due to the identified potential failure of authorization, or that the Delaware Court of Chancery should declare in its discretion that the ratification thereof in accordance with Section 204 of the General Corporation Law not be effective or be effective only on certain conditions must be brought within 120 days from the relevant validation effective time.

NOW, THEREFORE, BE IT RESOLVED, that (i) each of the Financings, (ii) the filing and effectiveness of each of the Series B Certificate of Designation, the Series E Certificate of Designation, the Early Series D Amendments, the Series F Certificate of Designation and the Series F Amendments with the Secretary of State, (iii) the Series D Overissue, and (iv) each of the Securities Issuances, are the potentially defective corporate acts to be ratified by the Ratification.

RESOLVED, FURTHER, that the time of the Initial Series B Financing was September 30, 1995, the time of the Subsequent Series B Financing was March 31, 1996, and the time of the Series D Financing was March 29, 2006.

RESOLVED, FURTHER, that the time of the filing and effectiveness of the Series B Certificate of Designation was November 8, 1995, the time of the filing and effectiveness of the Series E Certificate of Designation was May 16, 2000, the time of the filing and effectiveness of the First Series D Amendment was July 26, 2002, the time of the filing and effectiveness of the Second Series D Amendment was December 27, 2002, the time of the filing and effectiveness of the Series F Certificate of Designation was December 27, 2004, the time of the filing and effectiveness of the First Series F Amendment was January 31, 2005 and the time of the filing and effectiveness of the Second Series F Amendment was November 7, 2005.

RESOLVED, FURTHER, that the time of the Series D Overissue was March 29, 2006.

RESOLVED, FURTHER, that the time of each of the Securities Issuances is as set forth on **Attachment 1-A**.

RESOLVED, FURTHER, that the Initial Series B Financing involved the issuance of 2,207,693 shares of Series B Preferred Stock on September 30, 1995, the Subsequent Series B Financing involved the issuance of 2,061,401 shares of Series B Preferred Stock on March 31, 1996 and the Series D Financing involved the issuance of 279,999 shares of Series D Preferred Stock on March 29, 2006, all of which shares are putative stock.

RESOLVED, FURTHER, that the Series D Overissue involved the issuance of 54 shares of Series D Preferred Stock on March 29, 2006, which shares are putative stock.

RESOLVED, FURTHER, that the Securities Issuances involved the issuance of shares of putative stock (or options or warrants in respect thereof), the number and type of shares of putative stock issued, and the date or dates upon which such shares of stock were purported to have been issued is as set forth on **Attachment 1-A**, together with the vesting terms and grant or issuance price, as applicable.

RESOLVED, FURTHER, that the Board hereby identifies the following as the failures of authorization in respect of the Financings: (i) the failure of each of the Series B Certificate of Designation, Series B Amendment and the Fourth Series D Amendment, as the case may be, to have been filed and to have become effective with the Secretary of State prior to the issuance of shares in connection with each such Financing, and (ii) solely in respect of the Initial Series B Financing, the potential failure of the Board to have approved and declared advisable the Series

B Certificate of Designation prior to the filing and effectiveness thereof with the Secretary of State and to have validly authorized the issuance of shares of Series B Preferred Stock prior to such issuance.

RESOLVED, FURTHER, that the Board hereby identifies the potential failure of the Board to have approved and declared advisable the Series B Certificate of Designation prior to the filing and effectiveness thereof with the Secretary of State as the failure of authorization in respect of the Series B Certificate of Designation.

RESOLVED, FURTHER, that the Board hereby identifies the following as the failure of authorization in respect of the filing and effectiveness of the Series E Certificate of Designation, the Early Series D Amendments, the Series F Certificate of Designation and the Series F Amendments: the failure of the total number of authorized shares of preferred stock in the Certificate of Incorporation to have been increased pursuant to an amendment thereto or an amendment and restatement thereof, prior to the Board's approval of the Series E Certificate of Designation, the Early Series D Amendments, the Series F Certificate of Designation and the Series F Amendments, as the case may be, and the filing and effectiveness thereof with the Secretary of State.

RESOLVED, FURTHER, that the Board hereby identifies the following as the failures of authorization in respect of the Series D Overissue: the failure of the total number of shares designated as Series D Preferred Stock to have been increased pursuant to an amendment to the Third Series D Amendment prior to the issuance thereof;

RESOLVED, FURTHER, that the Board hereby identifies the following as the failure of authorization in respect of the Securities Issuances: the failure of the Board to have validly authorized the issuance thereof prior to such issuance.

RESOLVED, FURTHER, that, pursuant to and in accordance with Section 204 of the General Corporation Law, the Ratification be, and hereby is, approved, adopted and confirmed in all respects.

RESOLVED, FURTHER, that these resolutions authorizing the Ratification shall be submitted to the holders of valid stock (as defined in Section 204(h) of the General Corporation Law) of the Company entitled to vote thereon for adoption thereby, and the Board of Directors recommends that such stockholders adopt these resolutions authorizing the Ratification.

RESOLVED FURTHER, that the record date (the "***Record Date***") for determining the stockholders of the Company entitled to vote on these resolutions authorizing the Ratification shall be the close of business on the date hereof.

RESOLVED, FURTHER, that the officers of the Company be, and each hereby is, authorized, empowered and directed, for and on behalf of the Company, to deliver a notice of the Ratification in the form and containing the information required by Section 204 of the General Corporation Law and, if the resolutions authorizing the Ratification are adopted by written consent of stockholders in lieu of a meeting, Section 228(e) of the General Corporation Law.

RESOLVED, FURTHER, that, subject to the adoption of the resolutions authorizing the Ratification by the stockholders, the officers of the Company be, and each hereby is, authorize, empowered and directed, for and on behalf of the Company, to execute and file or cause to be filed with the Secretary of State, a certificate of validation in respect of each of (i) the Initial Series B Financing, (ii) the Subsequent Series B Financing, (iii) the Series D Financing, (iv) the Series E Certificate of Designation, (v) the Early Series D Amendments, (vi) the Series F Certificate of Designation. (vii) the Series F Amendments, and (viii) the Series D Overissue in each case in the form prescribed by Section 204 of the General Corporation Law.

RESOLVED, FURTHER, that, any time before the validation effective time in respect of the ratification of the defective corporate acts set forth herein, the Board may abandon such ratification, as the case may be, before or after stockholder approval thereof, without further action by the stockholders.

RESOLVED, FURTHER, that the officers of the Company be, and each hereby is, authorized, empowered and directed, for and on behalf of the Company, to take any and all actions, to negotiate for and enter into agreements and amendments to agreements, to perform all such acts and things, to execute, file, deliver or record in the name and on behalf of the Company, all such certificates (including, but not limited to, a certificate of validation in respect of each of (i) the Initial Series B Financing, (ii) the Subsequent Series B Financing (iii) the Series D Financing, (iv) the Series E Certificate of Designation, (v) the Early Series D Amendments, (vi) the Series F Certificate of Designation, (vii) the Series F Amendments and (viii) the Series D Overissue), instruments, agreements or other documents, and to make all such payments as they, in their judgment, or in the judgment of any one or more of them, may deem necessary, advisable or appropriate in order to carry out the purpose and intent of, or consummate the transactions contemplated by the foregoing resolutions and/or all of the transactions contemplated therein or thereby, the authorization therefor to be conclusively evidenced by the taking of such action or the execution and delivery of such certificates, instruments, agreements or documents.

Exhibit B

Stockholder Resolutions

WHEREAS, the Board of Directors of the Company (the "***Board***") has identified certain potentially defective corporate acts in the resolutions attached hereto as **Attachment 1** (the "***Board Resolutions***"), which Board Resolutions are incorporated herein by reference;

WHEREAS, for the avoidance of doubt, the Board has determined that it is advisable and in the best interests of the Company and its stockholders to ratify all of the potentially defective corporate acts set forth in the Board Resolutions by approving and adopting the Ratification (as defined in the Board Resolutions) pursuant to and in accordance with Section 204 of the General Corporation Law;

WHEREAS, the Board has approved and adopted the Ratification and has directed that the Board Resolutions approving the Ratification be submitted to the holders of valid stock (as defined in Section 204(h) of the General Corporation Law) of the Company entitled to vote thereon for adoption thereby;

WHEREAS, the Board has recommended that the holders of valid stock of the Company entitled to vote on the adoption of the Board Resolutions adopt the Board Resolutions authorizing the Ratification; and

WHEREAS, any claim that any of the potentially defective corporate acts or putative stock referenced in the Board Resolutions being ratified under Section 204 of the General Corporation Law is void or voidable due to the identified potential failure of authorization, or that the Delaware Court of Chancery should declare in its discretion that the ratification thereof in accordance with Section 204 of the General Corporation Law not be effective or be effective only on certain conditions must be brought within 120 days from the relevant validation effective time.

NOW, THEREFORE, BE IT RESOLVED, that, pursuant to and in accordance with Section 204 of the General Corporation Law, the Board Resolutions authorizing the Ratification be, and hereby are, approved, adopted and confirmed in all respects.

RESOLVED, FURTHER, that the officers of the Company be, and each hereby is, authorized, empowered and directed, for and on behalf of the Company, to execute and file or cause to be filed with the Secretary of State of the State of Delaware, the certificates of validation referenced in the Board Resolutions.

RESOLVED, FURTHER, that, any time before the validation effective time, the Board of Directors may abandon the Board Resolutions effecting the Ratification, before or after stockholder approval thereof, without further action by the stockholders.

RESOLVED, FURTHER, that the officers of the Company be, and each hereby is, authorized, empowered and directed, for and on behalf of the Company, to take any and all actions, to negotiate for and enter into agreements and amendments to agreements, to perform all such acts and things, to execute, file, deliver or record in the name and on behalf of the Company, all such certificates (including, but not limited to, the certificates of validation referenced in the Board Resolutions), instruments, agreements or other documents, and to make all such payments as they, in their judgment, or in the judgment of any one or more of them, may deem necessary, advisable or appropriate in order to carry out the purpose and intent of, or consummate the transactions contemplated by the foregoing resolutions and/or all of the transactions contemplated therein or thereby, the authorization therefor to be conclusively evidenced by the taking of such action or the execution and delivery of such certificates, instruments, agreements or documents.

Exhibit C

Certificate of Amendment

CERTIFICATE OF AMENDMENT OF THE
CERTIFICATE OF INCORPORATION
OF
FIBROGEN, INC.

It is hereby certified that:

1. The name of the corporation (hereinafter called the "Corporation") is FibroGen, Inc.

2, The certificate of incorporation of the Corporation is hereby amended by striking out the first paragraph of Article Fourth and substituting in lieu of said paragraph the following new paragraph:

"FOURTH. The total number of shares of all classes of capital stock which the corporation shall have the authority to issue is 230,216,652 shares, comprised of 150,000,000 shares of Common Stock with a par value of One Cent ($.01) per share (the "Common Stock") and 80,216,652 shares of Preferred Stock with a par value of One Cent ($.01) per share (the "Preferred Stock")."

3. The foregoing amendment was duly adopted in accordance with the provisions of Section 242 of the General Corporation Law of the State of Delaware and was approved by the stockholders acting by written consent in accordance Section 228 of the General Corporation Law of the State of Delaware.

FIBROGEN, INC.

By: */s/ Michael Lowenstein*
Name: Michael Lowenstein
Title: Assistant Secretary

CORRECTED CERTIFICATE OF AMENDMENT OF THE
CERTIFICATE OF DESIGNATIONS
OF
SERIES F CONVERTIBLE PREFERRED STOCK
OF
FIBROGEN, INC.

FibroGen, Inc. (the "Corporation"), a corporation organized and existing under and by virtue of the General Corporation Law of the State of Delaware, DOES HEREBY CERTIFY that:

1. The name of the Corporation is FibroGen, Inc.

2. The Certificate of Amendment of the Certificate of Designations of Series F Convertible Preferred Stock of the Corporation (the "Amended Designation") was filed in the office of the Secretary of State of the State of Delaware on January 31, 2005 and the Amended Designation requires correction as permitted by subsection (f) of Section 103 of the General Corporation Law of the State of Delaware.

3. The inaccuracy or defect of the Amended Designation to be corrected is that the Amended Designation is an inaccurate record of the corporate action referred to therein. The increase in the authorized number of shares of Series F Preferred Stock referred to therein and effected thereby was not an amendment to the certificate of incorporation of the Corporation adopted in accordance with the provisions of Sections 228 and 242 of the General Corporation Law of the State of Delaware, but was instead duly authorized and directed by a resolution adopted by the Board of Directors of the Corporation in accordance with Section 151(g) of the General Corporation Law of the State of Delaware.

4. The Instrument is corrected to read in its entirety as follows:

CERTIFICATE OF INCREASE
OF
SERIES F CONVERTIBLE PREFERRED STOCK
OF
FIBROGEN, INC.

(Pursuant to Section 151 of the General Corporation Law of the State of Delaware)

FibroGen, Inc. (the "Corporation"), a corporation organized and existing under the General Corporation Law of the State of Delaware, in accordance with the provisions of Section 151(g) thereof, DOES HEREBY CERTIFY:

That pursuant to the authority conferred upon the Board of Directors by the certificate of incorporation of the Corporation, the Board of Directors of the Corporation has adopted a resolution authorizing and directing the increase in the number of authorized shares of Series F Convertible Preferred Stock of the Corporation to 23,723,333 shares of Series F Preferred Stock.

IN WITNESS WHEREOF, the Corporation has caused this Certificate to be executed by the undersigned, a duly authorized officer of the Corporation, this 16 day of October, 2014.

FIBROGEN, INC.

By: */s/ Michael Lowenstein*
Name: Michael Lowenstein
Title: Assistant Secretary

CERTIFICATE OF VALIDATION
OF
CORRECTED CERTIFICATE OF AMENDMENT OF THE
CERTIFICATE OF DESIGNATIONS
OF
SERIES F CONVERTIBLE PREFERRED STOCK
OF
FIBROGEN, INC.

Pursuant to Section 204 of the
General Corporation Law of the State of Delaware

FibroGen, Inc., a corporation organized and existing under the laws of the State of Delaware (the "Corporation"), certifies as follows:

1. On September 17, 2014, the board of directors of the Corporation adopted the resolutions attached hereto (without the exhibits or schedules thereto) as Exhibit A. On September 30, 2014, the stockholders of the Corporation, acting by written consent in lieu of a meeting in accordance with Section 228 of the General Corporation Law of the State of Delaware adopted the resolutions attached hereto (without the exhibit thereto) as Exhibit B. The foregoing resolutions of the board of directors and of the stockholders were duly adopted by the board of directors and by the stockholders, respectively, in accordance with the provisions of Section 204 of the General Corporation Law of the State of Delaware.

2. The certificate that was previously filed under Section 103 of the General Corporation Law of the State of Delaware in respect of the First Series F Amendment as defined and identified in the resolutions attached as Exhibit A and Exhibit B hereto was the Certificate of Amendment of the Certificate of Designation of Series F Convertible Preferred Stock of the Corporation filed with the Secretary of State of the State of Delaware on January 31, 2005, as corrected by the Corrected Certificate of Amendment of the Certificate of Designations of Series F Convertible Preferred Stock of the Corporation (the "Corrected Certificate") filed with the Secretary of State of the State of Delaware on October 16, 2014.

3. Attached hereto as Exhibit C are the provisions of a certificate of amendment of the certificate of incorporation of the Corporation as then in effect (the "Certificate of Incorporation") as would be required under Section 242 of the General Corporation Law of the State of Delaware to be included in a certificate of amendment of the Certificate of Incorporation to increase the total number of authorized shares of preferred stock set forth in the Certificate of Incorporation to be effective as of January 31, 2005 at 3:35 p.m. (Eastern).

4. Attached hereto as Exhibit D is a copy of the Corrected Certificate that was previously filed with the Secretary of State of the State of Delaware on October 16, 2014.

[*Remainder of Page Intentionally Left Blank*]

IN WITNESS WHEREOF, the Corporation has caused this Certificate of Validation to be executed by its duly authorized officer this 16 day of October, 2014.

FIBROGEN, INC.

By: */s/ Michael Lowenstein*
Name: Michael Lowenstein
Title: Assistant Secretary

Exhibit A

Board Resolutions

WHEREAS, in connection with the issuance and sale of shares of Series B Convertible Preferred Stock, par value $0.01 per share (the "***Series B Preferred Stock***"), of the Company, the Certificate of Designations of Series B Convertible Preferred Stock of the Company (the "***Series B Certificate of Designation***") was filed with the Secretary of State of the State of Delaware (the "***Secretary of State***") on November 8, 1995;

WHEREAS, prior to the filing of the Series B Certificate of Designation, the Company issued and sold 2,207,693 shares of Series B Preferred Stock on September 30, 1995 (the "***Initial Series B Financing***");

WHEREAS, the Company has not been able to locate the resolutions of the Board of Directors (the "***Board***") approving and declaring advisable the Series B Certificate of Designation and approving and authorizing the issuance and sale of shares of Series B Preferred Stock in the Initial Series B Financing;

WHEREAS, in connection with the issuance and sale of additional shares of Series B Preferred Stock, the Board approved and declared advisable, the Amended Designation of Series B Convertible Preferred Stock of the Company (the "***Series B Amendment***"), which was filed with the Secretary of State on April 19, 1996;

WHEREAS, prior to the filing of the Series B Amendment, the Company issued and sold 2,061,401 shares of Series B Preferred Stock on March 31, 1996 (the "***Subsequent Series B Financing***");

WHEREAS, in connection with the issuance and sale of shares of Series D Convertible Preferred Stock, par value $0.01 per share (the "***Series D Preferred Stock***"), of the Company, the Board approved and declared advisable, the Amended Designation of Series D Convertible Preferred Stock of the Company (the "***Fourth Series D Amendment***"), which was filed with the Secretary of State on December 21, 2006;

WHEREAS, prior to the filing of the Fourth Series D Amendment, the Company issued and sold 279,999 shares of Series D Preferred Stock on March 29, 2006 (the "***Series D Financing***" and, together with the Initial Series B Financing and the Subsequent Series B Financing, the "***Financings***");

WHEREAS, the Board approved and declared advisable the Certificate of Designations of Series E Preferred Stock of the Company (the "***Series E Certificate of Designation***"), which was filed with the Secretary of State on May 16, 2000, which certificate of designation designated shares of preferred stock in excess of the total number of authorized shares of preferred stock set forth in the certificate of incorporation (as amended and/or restated from time to time, the "***Certificate of Incorporation***");

WHEREAS, the Board approved and declared advisable, the Amended Designation of Series D Preferred Stock of the Company (the "***First Series D Amendment***"), which was filed with the Secretary of State on July 26, 2002, which amendment designated shares of preferred stock in excess of the total number of authorized shares of preferred stock set forth in the Certificate of Incorporation;

WHEREAS, the Board approved and declared advisable, the Amended Designation of Series D Preferred Stock of the Company (the "***Second Series D Amendment***" and together with the First Series D Amendment, the "***Early Series D Amendments***"), which was filed with the Secretary of State on December 27, 2002, which amendment designated shares of preferred stock in excess of the total number of authorized shares of preferred stock set forth in the Certificate of Incorporation;

WHEREAS, the Board approved and declared advisable the Certificate of Designations of Series F Preferred Stock of the Company (the "***Series F Certificate of Designation***"), which was filed with the Secretary of State on December 27, 2004, which certificate of designation designated shares of preferred stock in excess of the total number of authorized shares of preferred stock set forth in the Certificate of Incorporation;

WHEREAS, the Board approved and declared advisable, the Amended Designation of Series F Preferred Stock of the Company (the "***First Series F Amendment***"), which was filed with the Secretary of State on January 31, 2005, which amendment designated shares of preferred stock in excess of the total number of authorized shares of preferred stock set forth in the Certificate of Incorporation;

WHEREAS, the Board approved and declared advisable, the Amended Designation of Series F Preferred Stock of the Company (the "***Second Series F Amendment***" and together with the First Series F Amendment, the "***Series F Amendments***"), which was filed with the Secretary of State on November 7, 2005, which amendment designated shares of preferred stock in excess of the total number of authorized shares of preferred stock set forth in the Certificate of Incorporation;

WHEREAS, on March 29, 2006, after previously approving the issuance of up to 550,000 shares of the Company's Preferred Stock in connection with a merger, the Company issued shares of Series D Preferred Stock in connection with said merger in excess of the total number of shares designated as Series D Preferred Stock in the Amended Designation of Series D Convertible Preferred Stock of the Company (the "***Third Series D Amendment***"), which was filed with the Secretary of State on February 19, 2004, and in excess of the total number of shares designated as Series D Preferred Stock in the Fourth Series D Amendment, which was filed on December 21, 2006 (the "***Series D Overissue***");

WHEREAS, the Company from time to time granted certain stock options and warrants and issued certain shares of its stock, each as set forth on **Attachment 1-A** hereto, without record of, or prior to, approval by the Board (collectively, the "***Securities Issuances***");

WHEREAS, for the avoidance of doubt, the Board has determined that it is advisable and in the best interests of the Company and its stockholders to address any potential issues that may arise in light thereof;

WHEREAS, the Board has determined that it is advisable and in the best interests of the Company and its stockholders to ratify all of the above corporate actions (the "***Ratification***"), in each case pursuant to and in accordance with Section 204 of the General Corporation Law; and

WHEREAS, any claim that any of the potentially defective corporate acts or putative stock referenced herein being ratified under Section 204 of the General Corporation Law is void or voidable due to the identified potential failure of authorization, or that the Delaware Court of Chancery should declare in its discretion that the ratification thereof in accordance with Section 204 of the General Corporation Law not be effective or be effective only on certain conditions must be brought within 120 days from the relevant validation effective time.

NOW, THEREFORE, BE IT RESOLVED, that (i) each of the Financings, (ii) the filing and effectiveness of each of the Series B Certificate of Designation, the Series E Certificate of Designation, the Early Series D Amendments, the Series F Certificate of Designation and the Series F Amendments with the Secretary of State, (iii) the Series D Overissue, and (iv) each of the Securities Issuances, are the potentially defective corporate acts to be ratified by the Ratification.

RESOLVED, FURTHER, that the time of the Initial Series B Financing was September 30, 1995, the time of the Subsequent Series B Financing was March 31, 1996, and the time of the Series D Financing was March 29, 2006.

RESOLVED, FURTHER, that the time of the filing and effectiveness of the Series B Certificate of Designation was November 8, 1995, the time of the filing and effectiveness of the Series E Certificate of Designation was May 16, 2000, the time of the filing and effectiveness of the First Series D Amendment was July 26, 2002, the time of the filing and effectiveness of the Second Series D Amendment was December 27, 2002, the time of the filing and effectiveness of the Series F Certificate of Designation was December 27, 2004, the time of the filing and effectiveness of the First Series F Amendment was January 31, 2005 and the time of the filing and effectiveness of the Second Series F Amendment was November 7, 2005.

RESOLVED, FURTHER, that the time of the Series D Overissue was March 29, 2006.

RESOLVED, FURTHER, that the time of each of the Securities Issuances is as set forth on **Attachment 1-A**.

RESOLVED, FURTHER, that the Initial Series B Financing involved the issuance of 2,207,693 shares of Series B Preferred Stock on September 30, 1995, the Subsequent Series B Financing involved the issuance of 2,061,401 shares of Series B Preferred Stock on March 31, 1996 and the Series D Financing involved the issuance of 279,999 shares of Series D Preferred Stock on March 29, 2006, all of which shares are putative stock.

RESOLVED, FURTHER, that the Series D Overissue involved the issuance of 54 shares of Series D Preferred Stock on March 29, 2006, which shares are putative stock.

RESOLVED, FURTHER, that the Securities Issuances involved the issuance of shares of putative stock (or options or warrants in respect thereof), the number and type of shares of putative stock issued, and the date or dates upon which such shares of stock were purported to have been issued is as set forth on **Attachment 1-A**, together with the vesting terms and grant or issuance price, as applicable.

RESOLVED, FURTHER, that the Board hereby identifies the following as the failures of authorization in respect of the Financings: (i) the failure of each of the Series B Certificate of Designation, Series B Amendment and the Fourth Series D Amendment, as the case may be, to have been filed and to have become effective with the Secretary of State prior to the issuance of shares in connection with each such Financing, and (ii) solely in respect of the Initial Series B Financing, the potential failure of the Board to have approved and declared advisable the Series

B Certificate of Designation prior to the filing and effectiveness thereof with the Secretary of State and to have validly authorized the issuance of shares of Series B Preferred Stock prior to such issuance.

RESOLVED, FURTHER, that the Board hereby identifies the potential failure of the Board to have approved and declared advisable the Series B Certificate of Designation prior to the filing and effectiveness thereof with the Secretary of State as the failure of authorization in respect of the Series B Certificate of Designation.

RESOLVED, FURTHER, that the Board hereby identifies the following as the failure of authorization in respect of the filing and effectiveness of the Series E Certificate of Designation, the Early Series D Amendments, the Series F Certificate of Designation and the Series F Amendments: the failure of the total number of authorized shares of preferred stock in the Certificate of Incorporation to have been increased pursuant to an amendment thereto or an amendment and restatement thereof, prior to the Board's approval of the Series E Certificate of Designation, the Early Series D Amendments, the Series F Certificate of Designation and the Series F Amendments, as the case may be, and the filing and effectiveness thereof with the Secretary of State.

RESOLVED, FURTHER, that the Board hereby identifies the following as the failures of authorization in respect of the Series D Overissue: the failure of the total number of shares designated as Series D Preferred Stock to have been increased pursuant to an amendment to the Third Series D Amendment prior to the issuance thereof;

RESOLVED, FURTHER, that the Board hereby identifies the following as the failure of authorization in respect of the Securities Issuances: the failure of the Board to have validly authorized the issuance thereof prior to such issuance.

RESOLVED, FURTHER, that, pursuant to and in accordance with Section 204 of the General Corporation Law, the Ratification be, and hereby is, approved, adopted and confirmed in all respects.

RESOLVED, FURTHER, that these resolutions authorizing the Ratification shall be submitted to the holders of valid stock (as defined in Section 204(h) of the General Corporation Law) of the Company entitled to vote thereon for adoption thereby, and the Board of Directors recommends that such stockholders adopt these resolutions authorizing the Ratification.

RESOLVED FURTHER, that the record date (the "***Record Date***") for determining the stockholders of the Company entitled to vote on these resolutions authorizing the Ratification shall be the close of business on the date hereof.

RESOLVED, FURTHER, that the officers of the Company be, and each hereby is, authorized, empowered and directed, for and on behalf of the Company, to deliver a notice of the Ratification in the form and containing the information required by Section 204 of the General Corporation Law and, if the resolutions authorizing the Ratification are adopted by written consent of stockholders in lieu of a meeting, Section 228(e) of the General Corporation Law.

RESOLVED, FURTHER, that, subject to the adoption of the resolutions authorizing the Ratification by the stockholders, the officers of the Company be, and each hereby is, authorize, empowered and directed, for and on behalf of the Company, to execute and file or cause to be filed with the Secretary of State, a certificate of validation in respect of each of (i) the Initial Series B Financing, (ii) the Subsequent Series B Financing, (iii) the Series D Financing, (iv) the Series E Certificate of Designation, (v) the Early Series D Amendments, (vi) the Series F Certificate of Designation. (vii) the Series F Amendments, and (viii) the Series D Overissue in each case in the form prescribed by Section 204 of the General Corporation Law.

RESOLVED, FURTHER, that, any time before the validation effective time in respect of the ratification of the defective corporate acts set forth herein, the Board may abandon such ratification, as the case may be, before or after stockholder approval thereof, without further action by the stockholders.

RESOLVED, FURTHER, that the officers of the Company be, and each hereby is, authorized, empowered and directed, for and on behalf of the Company, to take any and all actions, to negotiate for and enter into agreements and amendments to agreements, to perform all such acts and things, to execute, file, deliver or record in the name and on behalf of the Company, all such certificates (including, but not limited to, a certificate of validation in respect of each of (i) the Initial Series B Financing, (ii) the Subsequent Series B Financing (iii) the Series D Financing, (iv) the Series E Certificate of Designation, (v) the Early Series D Amendments, (vi) the Series F Certificate of Designation, (vii) the Series F Amendments and (viii) the Series D Overissue), instruments, agreements or other documents, and to make all such payments as they, in their judgment, or in the judgment of any one or more of them, may deem necessary, advisable or appropriate in order to carry out the purpose and intent of, or consummate the transactions contemplated by the foregoing resolutions and/or all of the transactions contemplated therein or thereby, the authorization therefor to be conclusively evidenced by the taking of such action or the execution and delivery of such certificates, instruments, agreements or documents.

Exhibit B

Stockholder Resolutions

WHEREAS, the Board of Directors of the Company (the "***Board***") has identified certain potentially defective corporate acts in the resolutions attached hereto as **Attachment 1** (the "***Board Resolutions***"), which Board Resolutions are incorporated herein by reference;

WHEREAS, for the avoidance of doubt, the Board has determined that it is advisable and in the best interests of the Company and its stockholders to ratify all of the potentially defective corporate acts set forth in the Board Resolutions by approving and adopting the Ratification (as defined in the Board Resolutions) pursuant to and in accordance with Section 204 of the General Corporation Law;

WHEREAS, the Board has approved and adopted the Ratification and has directed that the Board Resolutions approving the Ratification be submitted to the holders of valid stock (as defined in Section 204(h) of the General Corporation Law) of the Company entitled to vote thereon for adoption thereby;

WHEREAS, the Board has recommended that the holders of valid stock of the Company entitled to vote on the adoption of the Board Resolutions adopt the Board Resolutions authorizing the Ratification; and

WHEREAS, any claim that any of the potentially defective corporate acts or putative stock referenced in the Board Resolutions being ratified under Section 204 of the General Corporation Law is void or voidable due to the identified potential failure of authorization, or that the Delaware Court of Chancery should declare in its discretion that the ratification thereof in accordance with Section 204 of the General Corporation Law not be effective or be effective only on certain conditions must be brought within 120 days from the relevant validation effective time.

NOW, THEREFORE, BE IT RESOLVED, that, pursuant to and in accordance with Section 204 of the General Corporation Law, the Board Resolutions authorizing the Ratification be, and hereby are, approved, adopted and confirmed in all respects.

RESOLVED, FURTHER, that the officers of the Company be, and each hereby is, authorized, empowered and directed, for and on behalf of the Company, to execute and file or cause to be filed with the Secretary of State of the State of Delaware, the certificates of validation referenced in the Board Resolutions.

RESOLVED, FURTHER, that, any time before the validation effective time, the Board of Directors may abandon the Board Resolutions effecting the Ratification, before or after stockholder approval thereof, without further action by the stockholders.

RESOLVED, FURTHER, that the officers of the Company be, and each hereby is, authorized, empowered and directed, for and on behalf of the Company, to take any and all actions, to negotiate for and enter into agreements and amendments to agreements, to perform all such acts and things, to execute, file, deliver or record in the name and on behalf of the Company, all such certificates (including, but not limited to, the certificates of validation referenced in the Board Resolutions), instruments, agreements or other documents, and to make all such payments as they, in their judgment, or in the judgment of any one or more of them, may deem necessary, advisable or appropriate in order to carry out the purpose and intent of, or consummate the transactions contemplated by the foregoing resolutions and/or all of the transactions contemplated therein or thereby, the authorization therefor to be conclusively evidenced by the taking of such action or the execution and delivery of such certificates, instruments, agreements or documents.

Exhibit C

Certificate of Amendment

CERTIFICATE OF AMENDMENT OF THE
CERTIFICATE OF INCORPORATION
OF
FIBROGEN, INC.

It is hereby certified that:

1. The name of the corporation (hereinafter called the "Corporation") is FibroGen, Inc.

2, The certificate of incorporation of the Corporation is hereby amended by striking out the first paragraph of Article Fourth and substituting in lieu of said paragraph the following new paragraph:

"FOURTH. The total number of shares of all classes of capital stock which the corporation shall have the authority to issue is 230,559,111 shares, comprised of 150,000,000 shares of Common Stock with a par value of One Cent ($.01) per share (the "Common Stock") and 80,559,111 shares of Preferred Stock with a par value of One Cent ($.01) per share (the "Preferred Stock")."

3. The foregoing amendment was duly adopted in accordance with the provisions of Section 242 of the General Corporation Law of the State of Delaware and was approved by the stockholders acting by written consent in accordance Section 228 of the General Corporation Law of the State of Delaware.

FIBROGEN, INC.

By: */s/ Michael Lowenstein*
Name: Michael Lowenstein
Title: Assistant Secretary

Exhibit D

Corrected Certificate

CORRECTED CERTIFICATE OF AMENDMENT OF THE
CERTIFICATE OF DESIGNATIONS
OF
SERIES F CONVERTIBLE PREFERRED STOCK
OF
FIBROGEN, INC.

FibroGen, Inc. (the "Corporation"), a corporation organized and existing under and by virtue of the General Corporation Law of the State of Delaware, DOES HEREBY CERTIFY that:

1. The name of the Corporation is FibroGen, Inc.

2. The Certificate of Amendment of the Certificate of Designations of Series F Convertible Preferred Stock of the Corporation (the "Amended Designation") was filed in the office of the Secretary of State of the State of Delaware on January 31, 2005 and the Amended Designation requires correction as permitted by subsection (f) of Section 103 of the General Corporation Law of the State of Delaware.

3. The inaccuracy or defect of the Amended Designation to be corrected is that the Amended Designation is an inaccurate record of the corporate action referred to therein. The increase in the authorized number of shares of Series F Preferred Stock referred to therein and effected thereby was not an amendment to the certificate of incorporation of the Corporation adopted in accordance with the provisions of Sections 228 and 242 of the General Corporation Law of the State of Delaware, but was instead duly authorized and directed by a resolution adopted by the Board of Directors of the Corporation in accordance with Section 151(g) of the General Corporation Law of the State of Delaware.

4. The Instrument is corrected to read in its entirety as follows:

CERTIFICATE OF INCREASE
OF
SERIES F CONVERTIBLE PREFERRED STOCK
OF
FIBROGEN, INC.

(Pursuant to Section 151 of the General Corporation Law of the State of Delaware)

FibroGen, Inc. (the "Corporation"), a corporation organized and existing under the General Corporation Law of the State of Delaware, in accordance with the provisions of Section 151(g) thereof, DOES HEREBY CERTIFY:

That pursuant to the authority conferred upon the Board of Directors by the certificate of incorporation of the Corporation, the Board of Directors of the Corporation has adopted a resolution authorizing and directing the increase in the number of authorized shares of Series F Convertible Preferred Stock of the Corporation to 23,723,333 shares of Series F Preferred Stock.

IN WITNESS WHEREOF, the Corporation has caused this Certificate to be executed by the undersigned, a duly authorized officer of the Corporation, this 16 day of October, 2014.

FIBROGEN, INC.

By: */s/ Michael Lowenstein*
Name: Michael Lowenstein
Title: Assistant Secretary

CORRECTED CERTIFICATE OF AMENDMENT OF THE
CERTIFICATE OF DESIGNATIONS
OF
SERIES F CONVERTIBLE PREFERRED STOCK
OF
FIBROGEN, INC.

FibroGen, Inc. (the "Corporation"), a corporation organized and existing under and by virtue of the General Corporation Law of the State of Delaware, DOES HEREBY CERTIFY that:

1. The name of the Corporation is FibroGen, Inc.

2. The Certificate of Amendment of the Certificate of Designations of Series F Convertible Preferred Stock of the Corporation (the "Amended Designation") was filed in the office of the Secretary of State of the State of Delaware on November 7, 2005 and the Amended Designation requires correction as permitted by subsection (f) of Section 103 of the General Corporation Law of the State of Delaware.

3. The inaccuracy or defect of the Amended Designation to be corrected is that the Amended Designation is an inaccurate record of the corporate action referred to therein. The increase in the authorized number of shares of Series F Preferred Stock referred to therein and effected thereby was not an amendment to the certificate of incorporation of the Corporation adopted in accordance with the provisions of Sections 228 and 242 of the General Corporation Law of the State of Delaware, but was instead duly authorized and directed by a resolution adopted by the Board of Directors of the Corporation in accordance with Section 151(g) of the General Corporation Law of the State of Delaware.

4. The Instrument is corrected to read in its entirety as follows:

CERTIFICATE OF INCREASE
OF
SERIES F CONVERTIBLE PREFERRED STOCK
OF
FIBROGEN, INC.

(Pursuant to Section 151 of the General Corporation Law of the State of Delaware)

FibroGen, Inc. (the "Corporation"), a corporation organized and existing under the General Corporation Law of the State of Delaware, in accordance with the provisions of Section 151(g) thereof, DOES HEREBY CERTIFY:

That pursuant to the authority conferred upon the Board of Directors by the certificate of incorporation of the Corporation, the Board of Directors of the Corporation has adopted a resolution authorizing and directing the increase in the number of authorized shares of Series F Convertible Preferred Stock of the Corporation to 25,718,961 shares of Series F Preferred Stock.

IN WITNESS WHEREOF, the Corporation has caused this Certificate to be executed by the undersigned, a duly authorized officer of the Corporation, this 16 day of October, 2014.

FIBROGEN, INC.

By: */s/ Michael Lowenstein*
Name: Michael Lowenstein
Title: Assistant Secretary

CERTIFICATE OF VALIDATION
OF
CORRECTED CERTIFICATE OF AMENDMENT OF THE
CERTIFICATE OF DESIGNATIONS
OF
SERIES F CONVERTIBLE PREFERRED STOCK
OF
FIBROGEN, INC.

Pursuant to Section 204 of the
General Corporation Law of the State of Delaware

FibroGen, Inc., a corporation organized and existing under the laws of the State of Delaware (the "Corporation"), certifies as follows:

1. On September 17, 2014, the board of directors of the Corporation adopted the resolutions attached hereto (without the exhibits or schedules thereto) as Exhibit A. On September 30, 2014, the stockholders of the Corporation, acting by written consent in lieu of a meeting in accordance with Section 228 of the General Corporation Law of the State of Delaware adopted the resolutions attached hereto (without the exhibit thereto) as Exhibit B. The foregoing resolutions of the board of directors and of the stockholders were duly adopted by the board of directors and by the stockholders, respectively, in accordance with the provisions of Section 204 of the General Corporation Law of the State of Delaware.

2. The certificate that was previously filed under Section 103 of the General Corporation Law of the State of Delaware in respect of the Second Series F Amendment as defined and identified in the resolutions attached as Exhibit A and Exhibit B hereto was the Certificate of Amendment of the Certificate of Designation of Series F Convertible Preferred Stock of the Corporation filed with the Secretary of State of the State of Delaware on November 7, 2005, as corrected by the Corrected Certificate of Amendment of the Certificate of Designations of Series F Convertible Preferred Stock of the Corporation (the "Corrected Certificate") filed with the Secretary of State of the State of Delaware on October 16, 2014.

3. Attached hereto as Exhibit C are the provisions of a certificate of amendment of the certificate of incorporation of the Corporation as then in effect (the "Certificate of Incorporation") as would be required under Section 242 of the General Corporation Law of the State of Delaware to be included in a certificate of amendment of the Certificate of Incorporation to increase the total number of authorized shares of preferred stock set forth in the Certificate of Incorporation to be effective as of November 7, 2005 at 4:52 p.m. (Eastern).

4. Attached hereto as Exhibit D is a copy of the Corrected Certificate that was previously filed with the Secretary of State of the State of Delaware on October 16, 2014.

IN WITNESS WHEREOF, the Corporation has caused this Certificate of Validation to be executed by its duly authorized officer this 16 day of October, 2014.

FIBROGEN, INC.

By: */s/ Michael Lowenstein*
Name: Michael Lowenstein
Title: Assistant Secretary

Exhibit A

Board Resolutions

WHEREAS, in connection with the issuance and sale of shares of Series B Convertible Preferred Stock, par value $0.01 per share (the "***Series B Preferred Stock***"), of the Company, the Certificate of Designations of Series B Convertible Preferred Stock of the Company (the "***Series B Certificate of Designation***") was filed with the Secretary of State of the State of Delaware (the "***Secretary of State***") on November 8, 1995;

WHEREAS, prior to the filing of the Series B Certificate of Designation, the Company issued and sold 2,207,693 shares of Series B Preferred Stock on September 30, 1995 (the "***Initial Series B Financing***");

WHEREAS, the Company has not been able to locate the resolutions of the Board of Directors (the "***Board***") approving and declaring advisable the Series B Certificate of Designation and approving and authorizing the issuance and sale of shares of Series B Preferred Stock in the Initial Series B Financing;

WHEREAS, in connection with the issuance and sale of additional shares of Series B Preferred Stock, the Board approved and declared advisable, the Amended Designation of Series B Convertible Preferred Stock of the Company (the "***Series B Amendment***"), which was filed with the Secretary of State on April 19, 1996;

WHEREAS, prior to the filing of the Series B Amendment, the Company issued and sold 2,061,401 shares of Series B Preferred Stock on March 31, 1996 (the "***Subsequent Series B Financing***");

WHEREAS, in connection with the issuance and sale of shares of Series D Convertible Preferred Stock, par value $0.01 per share (the "***Series D Preferred Stock***"), of the Company, the Board approved and declared advisable, the Amended Designation of Series D Convertible Preferred Stock of the Company (the "***Fourth Series D Amendment***"), which was filed with the Secretary of State on December 21, 2006;

WHEREAS, prior to the filing of the Fourth Series D Amendment, the Company issued and sold 279,999 shares of Series D Preferred Stock on March 29, 2006 (the "***Series D Financing***" and, together with the Initial Series B Financing and the Subsequent Series B Financing, the "***Financings***");

WHEREAS, the Board approved and declared advisable the Certificate of Designations of Series E Preferred Stock of the Company (the "***Series E Certificate of Designation***"), which was filed with the Secretary of State on May 16, 2000, which certificate of designation designated shares of preferred stock in excess of the total number of authorized shares of preferred stock set forth in the certificate of incorporation (as amended and/or restated from time to time, the "***Certificate of Incorporation***");

WHEREAS, the Board approved and declared advisable, the Amended Designation of Series D Preferred Stock of the Company (the "***First Series D Amendment***"), which was filed with the Secretary of State on July 26, 2002, which amendment designated shares of preferred stock in excess of the total number of authorized shares of preferred stock set forth in the Certificate of Incorporation;

WHEREAS, the Board approved and declared advisable, the Amended Designation of Series D Preferred Stock of the Company (the "***Second Series D Amendment***" and together with the First Series D Amendment, the "***Early Series D Amendments***"), which was filed with the Secretary of State on December 27, 2002, which amendment designated shares of preferred stock in excess of the total number of authorized shares of preferred stock set forth in the Certificate of Incorporation;

WHEREAS, the Board approved and declared advisable the Certificate of Designations of Series F Preferred Stock of the Company (the "***Series F Certificate of Designation***"), which was filed with the Secretary of State on December 27, 2004, which certificate of designation designated shares of preferred stock in excess of the total number of authorized shares of preferred stock set forth in the Certificate of Incorporation;

WHEREAS, the Board approved and declared advisable, the Amended Designation of Series F Preferred Stock of the Company (the "***First Series F Amendment***"), which was filed with the Secretary of State on January 31, 2005, which amendment designated shares of preferred stock in excess of the total number of authorized shares of preferred stock set forth in the Certificate of Incorporation;

WHEREAS, the Board approved and declared advisable, the Amended Designation of Series F Preferred Stock of the Company (the "***Second Series F Amendment***" and together with the First Series F Amendment, the "***Series F Amendments***"), which was filed with the Secretary of State on November 7, 2005, which amendment designated shares of preferred stock in excess of the total number of authorized shares of preferred stock set forth in the Certificate of Incorporation;

WHEREAS, on March 29, 2006, after previously approving the issuance of up to 550,000 shares of the Company's Preferred Stock in connection with a merger, the Company issued shares of Series D Preferred Stock in connection with said merger in excess of the total number of shares designated as Series D Preferred Stock in the Amended Designation of Series D Convertible Preferred Stock of the Company (the "***Third Series D Amendment***"), which was filed with the Secretary of State on February 19, 2004, and in excess of the total number of shares designated as Series D Preferred Stock in the Fourth Series D Amendment, which was filed on December 21, 2006 (the "***Series D Overissue***");

WHEREAS, the Company from time to time granted certain stock options and warrants and issued certain shares of its stock, each as set forth on **Attachment 1-A** hereto, without record of, or prior to, approval by the Board (collectively, the "***Securities Issuances***");

WHEREAS, for the avoidance of doubt, the Board has determined that it is advisable and in the best interests of the Company and its stockholders to address any potential issues that may arise in light thereof;

WHEREAS, the Board has determined that it is advisable and in the best interests of the Company and its stockholders to ratify all of the above corporate actions (the "***Ratification***"), in each case pursuant to and in accordance with Section 204 of the General Corporation Law; and

WHEREAS, any claim that any of the potentially defective corporate acts or putative stock referenced herein being ratified under Section 204 of the General Corporation Law is void or voidable due to the identified potential failure of authorization, or that the Delaware Court of Chancery should declare in its discretion that the ratification thereof in accordance with Section 204 of the General Corporation Law not be effective or be effective only on certain conditions must be brought within 120 days from the relevant validation effective time.

NOW, THEREFORE, BE IT RESOLVED, that (i) each of the Financings, (ii) the filing and effectiveness of each of the Series B Certificate of Designation, the Series E Certificate of Designation, the Early Series D Amendments, the Series F Certificate of Designation and the Series F Amendments with the Secretary of State, (iii) the Series D Overissue, and (iv) each of the Securities Issuances, are the potentially defective corporate acts to be ratified by the Ratification.

RESOLVED, FURTHER, that the time of the Initial Series B Financing was September 30, 1995, the time of the Subsequent Series B Financing was March 31, 1996, and the time of the Series D Financing was March 29, 2006.

RESOLVED, FURTHER, that the time of the filing and effectiveness of the Series B Certificate of Designation was November 8, 1995, the time of the filing and effectiveness of the Series E Certificate of Designation was May 16, 2000, the time of the filing and effectiveness of the First Series D Amendment was July 26, 2002, the time of the filing and effectiveness of the Second Series D Amendment was December 27, 2002, the time of the filing and effectiveness of the Series F Certificate of Designation was December 27, 2004, the time of the filing and effectiveness of the First Series F Amendment was January 31, 2005 and the time of the filing and effectiveness of the Second Series F Amendment was November 7, 2005.

RESOLVED, FURTHER, that the time of the Series D Overissue was March 29, 2006.

RESOLVED, FURTHER, that the time of each of the Securities Issuances is as set forth on **Attachment 1-A**.

RESOLVED, FURTHER, that the Initial Series B Financing involved the issuance of 2,207,693 shares of Series B Preferred Stock on September 30, 1995, the Subsequent Series B Financing involved the issuance of 2,061,401 shares of Series B Preferred Stock on March 31, 1996 and the Series D Financing involved the issuance of 279,999 shares of Series D Preferred Stock on March 29, 2006, all of which shares are putative stock.

RESOLVED, FURTHER, that the Series D Overissue involved the issuance of 54 shares of Series D Preferred Stock on March 29, 2006, which shares are putative stock.

RESOLVED, FURTHER, that the Securities Issuances involved the issuance of shares of putative stock (or options or warrants in respect thereof), the number and type of shares of putative stock issued, and the date or dates upon which such shares of stock were purported to have been issued is as set forth on **Attachment 1-A**, together with the vesting terms and grant or issuance price, as applicable.

RESOLVED, FURTHER, that the Board hereby identifies the following as the failures of authorization in respect of the Financings: (i) the failure of each of the Series B Certificate of Designation, Series B Amendment and the Fourth Series D Amendment, as the case may be, to have been filed and to have become effective with the Secretary of State prior to the issuance of shares in connection with each such Financing, and (ii) solely in respect of the Initial Series B Financing, the potential failure of the Board to have approved and declared advisable the Series

B Certificate of Designation prior to the filing and effectiveness thereof with the Secretary of State and to have validly authorized the issuance of shares of Series B Preferred Stock prior to such issuance.

RESOLVED, FURTHER, that the Board hereby identifies the potential failure of the Board to have approved and declared advisable the Series B Certificate of Designation prior to the filing and effectiveness thereof with the Secretary of State as the failure of authorization in respect of the Series B Certificate of Designation.

RESOLVED, FURTHER, that the Board hereby identifies the following as the failure of authorization in respect of the filing and effectiveness of the Series E Certificate of Designation, the Early Series D Amendments, the Series F Certificate of Designation and the Series F Amendments: the failure of the total number of authorized shares of preferred stock in the Certificate of Incorporation to have been increased pursuant to an amendment thereto or an amendment and restatement thereof, prior to the Board's approval of the Series E Certificate of Designation, the Early Series D Amendments, the Series F Certificate of Designation and the Series F Amendments, as the case may be, and the filing and effectiveness thereof with the Secretary of State.

RESOLVED, FURTHER, that the Board hereby identifies the following as the failures of authorization in respect of the Series D Overissue: the failure of the total number of shares designated as Series D Preferred Stock to have been increased pursuant to an amendment to the Third Series D Amendment prior to the issuance thereof;

RESOLVED, FURTHER, that the Board hereby identifies the following as the failure of authorization in respect of the Securities Issuances: the failure of the Board to have validly authorized the issuance thereof prior to such issuance.

RESOLVED, FURTHER, that, pursuant to and in accordance with Section 204 of the General Corporation Law, the Ratification be, and hereby is, approved, adopted and confirmed in all respects.

RESOLVED, FURTHER, that these resolutions authorizing the Ratification shall be submitted to the holders of valid stock (as defined in Section 204(h) of the General Corporation Law) of the Company entitled to vote thereon for adoption thereby, and the Board of Directors recommends that such stockholders adopt these resolutions authorizing the Ratification.

RESOLVED FURTHER, that the record date (the "***Record Date***") for determining the stockholders of the Company entitled to vote on these resolutions authorizing the Ratification shall be the close of business on the date hereof.

RESOLVED, FURTHER, that the officers of the Company be, and each hereby is, authorized, empowered and directed, for and on behalf of the Company, to deliver a notice of the Ratification in the form and containing the information required by Section 204 of the General Corporation Law and, if the resolutions authorizing the Ratification are adopted by written consent of stockholders in lieu of a meeting, Section 228(e) of the General Corporation Law.

RESOLVED, FURTHER, that, subject to the adoption of the resolutions authorizing the Ratification by the stockholders, the officers of the Company be, and each hereby is, authorize, empowered and directed, for and on behalf of the Company, to execute and file or cause to be filed with the Secretary of State, a certificate of validation in respect of each of (i) the Initial Series B Financing, (ii) the Subsequent Series B Financing, (iii) the Series D Financing, (iv) the Series E Certificate of Designation, (v) the Early Series D Amendments, (vi) the Series F Certificate of Designation. (vii) the Series F Amendments, and (viii) the Series D Overissue in each case in the form prescribed by Section 204 of the General Corporation Law.

RESOLVED, FURTHER, that, any time before the validation effective time in respect of the ratification of the defective corporate acts set forth herein, the Board may abandon such ratification, as the case may be, before or after stockholder approval thereof, without further action by the stockholders.

RESOLVED, FURTHER, that the officers of the Company be, and each hereby is, authorized, empowered and directed, for and on behalf of the Company, to take any and all actions, to negotiate for and enter into agreements and amendments to agreements, to perform all such acts and things, to execute, file, deliver or record in the name and on behalf of the Company, all such certificates (including, but not limited to, a certificate of validation in respect of each of (i) the Initial Series B Financing, (ii) the Subsequent Series B Financing (iii) the Series D Financing, (iv) the Series E Certificate of Designation, (v) the Early Series D Amendments, (vi) the Series F Certificate of Designation, (vii) the Series F Amendments and (viii) the Series D Overissue), instruments, agreements or other documents, and to make all such payments as they, in their judgment, or in the judgment of any one or more of them, may deem necessary, advisable or appropriate in order to carry out the purpose and intent of, or consummate the transactions contemplated by the foregoing resolutions and/or all of the transactions contemplated therein or thereby, the authorization therefor to be conclusively evidenced by the taking of such action or the execution and delivery of such certificates, instruments, agreements or documents.

Exhibit B

Stockholder Resolutions

WHEREAS, the Board of Directors of the Company (the "***Board***") has identified certain potentially defective corporate acts in the resolutions attached hereto as **Attachment 1** (the "***Board Resolutions***"), which Board Resolutions are incorporated herein by reference;

WHEREAS, for the avoidance of doubt, the Board has determined that it is advisable and in the best interests of the Company and its stockholders to ratify all of the potentially defective corporate acts set forth in the Board Resolutions by approving and adopting the Ratification (as defined in the Board Resolutions) pursuant to and in accordance with Section 204 of the General Corporation Law;

WHEREAS, the Board has approved and adopted the Ratification and has directed that the Board Resolutions approving the Ratification be submitted to the holders of valid stock (as defined in Section 204(h) of the General Corporation Law) of the Company entitled to vote thereon for adoption thereby;

WHEREAS, the Board has recommended that the holders of valid stock of the Company entitled to vote on the adoption of the Board Resolutions adopt the Board Resolutions authorizing the Ratification; and

WHEREAS, any claim that any of the potentially defective corporate acts or putative stock referenced in the Board Resolutions being ratified under Section 204 of the General Corporation Law is void or voidable due to the identified potential failure of authorization, or that the Delaware Court of Chancery should declare in its discretion that the ratification thereof in accordance with Section 204 of the General Corporation Law not be effective or be effective only on certain conditions must be brought within 120 days from the relevant validation effective time.

NOW, THEREFORE, BE IT RESOLVED, that, pursuant to and in accordance with Section 204 of the General Corporation Law, the Board Resolutions authorizing the Ratification be, and hereby are, approved, adopted and confirmed in all respects.

RESOLVED, FURTHER, that the officers of the Company be, and each hereby is, authorized, empowered and directed, for and on behalf of the Company, to execute and file or cause to be filed with the Secretary of State of the State of Delaware, the certificates of validation referenced in the Board Resolutions.

RESOLVED, FURTHER, that, any time before the validation effective time, the Board of Directors may abandon the Board Resolutions effecting the Ratification, before or after stockholder approval thereof, without further action by the stockholders.

RESOLVED, FURTHER, that the officers of the Company be, and each hereby is, authorized, empowered and directed, for and on behalf of the Company, to take any and all actions, to negotiate for and enter into agreements and amendments to agreements, to perform all such acts and things, to execute, file, deliver or record in the name and on behalf of the Company, all such certificates (including, but not limited to, the certificates of validation referenced in the Board Resolutions), instruments, agreements or other documents, and to make all such payments as they, in their judgment, or in the judgment of any one or more of them, may deem necessary, advisable or appropriate in order to carry out the purpose and intent of, or consummate the transactions contemplated by the foregoing resolutions and/or all of the transactions contemplated therein or thereby, the authorization therefor to be conclusively evidenced by the taking of such action or the execution and delivery of such certificates, instruments, agreements or documents.

Exhibit C

Certificate of Amendment

CERTIFICATE OF AMENDMENT OF THE
CERTIFICATE OF INCORPORATION
OF
FIBROGEN, INC.

It is hereby certified that:

1. The name of the corporation (hereinafter called the "Corporation") is FibroGen, Inc.

2, The certificate of incorporation of the Corporation is hereby amended by striking out the first paragraph of Article Fourth and substituting in lieu of said paragraph the following new paragraph:

"FOURTH. The total number of shares of all classes of capital stock which the corporation shall have the authority to issue is 232,554,739 shares, comprised of 150,000,000 shares of Common Stock with a par value of One Cent ($.01) per share (the "Common Stock") and 82,554,739 shares of Preferred Stock with a par value of One Cent ($.01) per share (the "Preferred Stock")."

3. The foregoing amendment was duly adopted in accordance with the provisions of Section 242 of the General Corporation Law of the State of Delaware and was approved by the stockholders acting by written consent in accordance Section 228 of the General Corporation Law of the State of Delaware.

FIBROGEN, INC.

By: */s/ Michael Lowenstein*
Name: Michael Lowenstein
Title: Assistant Secretary

Exhibit D

Corrected Certificate

CORRECTED CERTIFICATE OF AMENDMENT OF THE
CERTIFICATE OF DESIGNATIONS
OF
SERIES F CONVERTIBLE PREFERRED STOCK
OF
FIBROGEN, INC.

FibroGen, Inc. (the "Corporation"), a corporation organized and existing under and by virtue of the General Corporation Law of the State of Delaware, DOES HEREBY CERTIFY that:

1. The name of the Corporation is FibroGen, Inc.

2. The Certificate of Amendment of the Certificate of Designations of Series F Convertible Preferred Stock of the Corporation (the "Amended Designation") was filed in the office of the Secretary of State of the State of Delaware on November 7, 2005 and the Amended Designation requires correction as permitted by subsection (f) of Section 103 of the General Corporation Law of the State of Delaware.

3. The inaccuracy or defect of the Amended Designation to be corrected is that the Amended Designation is an inaccurate record of the corporate action referred to therein. The increase in the authorized number of shares of Series F Preferred Stock referred to therein and effected thereby was not an amendment to the certificate of incorporation of the Corporation adopted in accordance with the provisions of Sections 228 and 242 of the General Corporation Law of the State of Delaware, but was instead duly authorized and directed by a resolution adopted by the Board of Directors of the Corporation in accordance with Section 151(g) of the General Corporation Law of the State of Delaware.

4. The Instrument is corrected to read in its entirety as follows:

CERTIFICATE OF INCREASE
OF
SERIES F CONVERTIBLE PREFERRED STOCK
OF
FIBROGEN, INC.

(Pursuant to Section 151 of the General Corporation Law of the State of Delaware)

FibroGen, Inc. (the "Corporation"), a corporation organized and existing under the General Corporation Law of the State of Delaware, in accordance with the provisions of Section 151(g) thereof, DOES HEREBY CERTIFY:

That pursuant to the authority conferred upon the Board of Directors by the certificate of incorporation of the Corporation, the Board of Directors of the Corporation has adopted a resolution authorizing and directing the increase in the number of authorized shares of Series F Convertible Preferred Stock of the Corporation to 25,718,961 shares of Series F Preferred Stock.

IN WITNESS WHEREOF, the Corporation has caused this Certificate to be executed by the undersigned, a duly authorized officer of the Corporation, this 16 day of October, 2014.

FIBROGEN, INC.

By: */s/ Michael Lowenstein*
Name: Michael Lowenstein
Title: Assistant Secretary

CERTIFICATE OF VALIDATION
OF
FIBROGEN, INC.

Pursuant to Section 204 of the
General Corporation Law of the State of Delaware

Fibrogen, Inc., a corporation organized and existing under the laws of the State of Delaware (the "Corporation"), certifies as follows:

1. On September 17, 2014, the board of directors of the Corporation adopted the resolutions attached hereto (without the exhibits or schedules thereto) as Exhibit A. On September 30, 2014, the stockholders of the Corporation, acting by written consent in lieu of a meeting in accordance with Section 228 of the General Corporation Law of the State of Delaware adopted the resolutions attached hereto (without the exhibit thereto) as Exhibit B. The foregoing resolutions of the board of directors and of the stockholders were duly adopted by the board of directors and by the stockholders, respectively, in accordance with the provisions of Section 204 of the General Corporation Law of the State of Delaware.

2. No certificate was previously filed under Section 103 of the General Corporation Law of the State of Delaware in respect of the Series D Overissue as defined and identified in the resolutions attached as Exhibit A and Exhibit B hereto.

3. Attached hereto as Exhibit C are the provisions of the Certificate of Increase of Series D Convertible Preferred Stock of the Corporation as would be required under Section 151(g) of the General Corporation Law of the State of Delaware to be included in the Certificate of Increase of Series D Convertible Preferred Stock of the Corporation to increase the number of shares of preferred stock designated as Series D Preferred Stock to be effective as of March 29, 2006 at 12:01 a.m. (Eastern).

[*Remainder of Page Intentionally Left Blank*]

IN WITNESS WHEREOF, the Corporation has caused this Certificate of Validation to be executed by its duly authorized officer this 16 day of October, 2014.

FIBROGEN, INC.

By: */s/ Michael Lowenstein*
Name: Michael Lowenstein
Title: Assistant Secretary

Exhibit A

Board Resolutions

WHEREAS, in connection with the issuance and sale of shares of Series B Convertible Preferred Stock, par value $0.01 per share (the "***Series B Preferred Stock***"), of the Company, the Certificate of Designations of Series B Convertible Preferred Stock of the Company (the "***Series B Certificate of Designation***") was filed with the Secretary of State of the State of Delaware (the "***Secretary of State***") on November 8, 1995;

WHEREAS, prior to the filing of the Series B Certificate of Designation, the Company issued and sold 2,207,693 shares of Series B Preferred Stock on September 30, 1995 (the "***Initial Series B Financing***");

WHEREAS, the Company has not been able to locate the resolutions of the Board of Directors (the "***Board***") approving and declaring advisable the Series B Certificate of Designation and approving and authorizing the issuance and sale of shares of Series B Preferred Stock in the Initial Series B Financing;

WHEREAS, in connection with the issuance and sale of additional shares of Series B Preferred Stock, the Board approved and declared advisable, the Amended Designation of Series B Convertible Preferred Stock of the Company (the "***Series B Amendment***"), which was filed with the Secretary of State on April 19, 1996;

WHEREAS, prior to the filing of the Series B Amendment, the Company issued and sold 2,061,401 shares of Series B Preferred Stock on March 31, 1996 (the "***Subsequent Series B Financing***");

WHEREAS, in connection with the issuance and sale of shares of Series D Convertible Preferred Stock, par value $0.01 per share (the "***Series D Preferred Stock***"), of the Company, the Board approved and declared advisable, the Amended Designation of Series D Convertible Preferred Stock of the Company (the "***Fourth Series D Amendment***"), which was filed with the Secretary of State on December 21, 2006;

WHEREAS, prior to the filing of the Fourth Series D Amendment, the Company issued and sold 279,999 shares of Series D Preferred Stock on March 29, 2006 (the "***Series D Financing***" and, together with the Initial Series B Financing and the Subsequent Series B Financing, the "***Financings***");

WHEREAS, the Board approved and declared advisable the Certificate of Designations of Series E Preferred Stock of the Company (the "***Series E Certificate of Designation***"), which was filed with the Secretary of State on May 16, 2000, which certificate of designation designated shares of preferred stock in excess of the total number of authorized shares of preferred stock set forth in the certificate of incorporation (as amended and/or restated from time to time, the "***Certificate of Incorporation***");

WHEREAS, the Board approved and declared advisable, the Amended Designation of Series D Preferred Stock of the Company (the "***First Series D Amendment***"), which was filed with the Secretary of State on July 26, 2002, which amendment designated shares of preferred stock in excess of the total number of authorized shares of preferred stock set forth in the Certificate of Incorporation;

WHEREAS, the Board approved and declared advisable, the Amended Designation of Series D Preferred Stock of the Company (the "***Second Series D Amendment***" and together with the First Series D Amendment, the "***Early Series D Amendments***"), which was filed with the Secretary of State on December 27, 2002, which amendment designated shares of preferred stock in excess of the total number of authorized shares of preferred stock set forth in the Certificate of Incorporation;

WHEREAS, the Board approved and declared advisable the Certificate of Designations of Series F Preferred Stock of the Company (the "***Series F Certificate of Designation***"), which was filed with the Secretary of State on December 27, 2004, which certificate of designation designated shares of preferred stock in excess of the total number of authorized shares of preferred stock set forth in the Certificate of Incorporation;

WHEREAS, the Board approved and declared advisable, the Amended Designation of Series F Preferred Stock of the Company (the "***First Series F Amendment***"), which was filed with the Secretary of State on January 31, 2005, which amendment designated shares of preferred stock in excess of the total number of authorized shares of preferred stock set forth in the Certificate of Incorporation;

WHEREAS, the Board approved and declared advisable, the Amended Designation of Series F Preferred Stock of the Company (the "***Second Series F Amendment***" and together with the First Series F Amendment, the "***Series F Amendments***"), which was filed with the Secretary of State on November 7, 2005, which amendment designated shares of preferred stock in excess of the total number of authorized shares of preferred stock set forth in the Certificate of Incorporation;

WHEREAS, on March 29, 2006, after previously approving the issuance of up to 550,000 shares of the Company's Preferred Stock in connection with a merger, the Company issued shares of Series D Preferred Stock in connection with said merger in excess of the total number of shares designated as Series D Preferred Stock in the Amended Designation of Series D Convertible Preferred Stock of the Company (the "***Third Series D Amendment***"), which was filed with the Secretary of State on February 19, 2004, and in excess of the total number of shares designated as Series D Preferred Stock in the Fourth Series D Amendment, which was filed on December 21, 2006 (the "***Series D Overissue***");

WHEREAS, the Company from time to time granted certain stock options and warrants and issued certain shares of its stock, each as set forth on **Attachment 1-A** hereto, without record of, or prior to, approval by the Board (collectively, the "***Securities Issuances***");

WHEREAS, for the avoidance of doubt, the Board has determined that it is advisable and in the best interests of the Company and its stockholders to address any potential issues that may arise in light thereof;

WHEREAS, the Board has determined that it is advisable and in the best interests of the Company and its stockholders to ratify all of the above corporate actions (the "***Ratification***"), in each case pursuant to and in accordance with Section 204 of the General Corporation Law; and

WHEREAS, any claim that any of the potentially defective corporate acts or putative stock referenced herein being ratified under Section 204 of the General Corporation Law is void or voidable due to the identified potential failure of authorization, or that the Delaware Court of Chancery should declare in its discretion that the ratification thereof in accordance with Section 204 of the General Corporation Law not be effective or be effective only on certain conditions must be brought within 120 days from the relevant validation effective time.

NOW, THEREFORE, BE IT RESOLVED, that (i) each of the Financings, (ii) the filing and effectiveness of each of the Series B Certificate of Designation, the Series E Certificate of Designation, the Early Series D Amendments, the Series F Certificate of Designation and the Series F Amendments with the Secretary of State, (iii) the Series D Overissue, and (iv) each of the Securities Issuances, are the potentially defective corporate acts to be ratified by the Ratification.

RESOLVED, FURTHER, that the time of the Initial Series B Financing was September 30, 1995, the time of the Subsequent Series B Financing was March 31, 1996, and the time of the Series D Financing was March 29, 2006.

RESOLVED, FURTHER, that the time of the filing and effectiveness of the Series B Certificate of Designation was November 8, 1995, the time of the filing and effectiveness of the Series E Certificate of Designation was May 16, 2000, the time of the filing and effectiveness of the First Series D Amendment was July 26, 2002, the time of the filing and effectiveness of the Second Series D Amendment was December 27, 2002, the time of the filing and effectiveness of the Series F Certificate of Designation was December 27, 2004, the time of the filing and effectiveness of the First Series F Amendment was January 31, 2005 and the time of the filing and effectiveness of the Second Series F Amendment was November 7, 2005.

RESOLVED, FURTHER, that the time of the Series D Overissue was March 29, 2006.

RESOLVED, FURTHER, that the time of each of the Securities Issuances is as set forth on **Attachment 1-A**.

RESOLVED, FURTHER, that the Initial Series B Financing involved the issuance of 2,207,693 shares of Series B Preferred Stock on September 30, 1995, the Subsequent Series B Financing involved the issuance of 2,061,401 shares of Series B Preferred Stock on March 31, 1996 and the Series D Financing involved the issuance of 279,999 shares of Series D Preferred Stock on March 29, 2006, all of which shares are putative stock.

RESOLVED, FURTHER, that the Series D Overissue involved the issuance of 54 shares of Series D Preferred Stock on March 29, 2006, which shares are putative stock.

RESOLVED, FURTHER, that the Securities Issuances involved the issuance of shares of putative stock (or options or warrants in respect thereof), the number and type of shares of putative stock issued, and the date or dates upon which such shares of stock were purported to have been issued is as set forth on **Attachment 1-A**, together with the vesting terms and grant or issuance price, as applicable.

RESOLVED, FURTHER, that the Board hereby identifies the following as the failures of authorization in respect of the Financings: (i) the failure of each of the Series B Certificate of Designation, Series B Amendment and the Fourth Series D Amendment, as the case may be, to have been filed and to have become effective with the Secretary of State prior to the issuance of shares in connection with each such Financing, and (ii) solely in respect of the Initial Series B Financing, the potential failure of the Board to have approved and declared advisable the Series

B Certificate of Designation prior to the filing and effectiveness thereof with the Secretary of State and to have validly authorized the issuance of shares of Series B Preferred Stock prior to such issuance.

RESOLVED, FURTHER, that the Board hereby identifies the potential failure of the Board to have approved and declared advisable the Series B Certificate of Designation prior to the filing and effectiveness thereof with the Secretary of State as the failure of authorization in respect of the Series B Certificate of Designation.

RESOLVED, FURTHER, that the Board hereby identifies the following as the failure of authorization in respect of the filing and effectiveness of the Series E Certificate of Designation, the Early Series D Amendments, the Series F Certificate of Designation and the Series F Amendments: the failure of the total number of authorized shares of preferred stock in the Certificate of Incorporation to have been increased pursuant to an amendment thereto or an amendment and restatement thereof, prior to the Board's approval of the Series E Certificate of Designation, the Early Series D Amendments, the Series F Certificate of Designation and the Series F Amendments, as the case may be, and the filing and effectiveness thereof with the Secretary of State.

RESOLVED, FURTHER, that the Board hereby identifies the following as the failures of authorization in respect of the Series D Overissue: the failure of the total number of shares designated as Series D Preferred Stock to have been increased pursuant to an amendment to the Third Series D Amendment prior to the issuance thereof;

RESOLVED, FURTHER, that the Board hereby identifies the following as the failure of authorization in respect of the Securities Issuances: the failure of the Board to have validly authorized the issuance thereof prior to such issuance.

RESOLVED, FURTHER, that, pursuant to and in accordance with Section 204 of the General Corporation Law, the Ratification be, and hereby is, approved, adopted and confirmed in all respects.

RESOLVED, FURTHER, that these resolutions authorizing the Ratification shall be submitted to the holders of valid stock (as defined in Section 204(h) of the General Corporation Law) of the Company entitled to vote thereon for adoption thereby, and the Board of Directors recommends that such stockholders adopt these resolutions authorizing the Ratification.

RESOLVED FURTHER, that the record date (the "***Record Date***") for determining the stockholders of the Company entitled to vote on these resolutions authorizing the Ratification shall be the close of business on the date hereof.

RESOLVED, FURTHER, that the officers of the Company be, and each hereby is, authorized, empowered and directed, for and on behalf of the Company, to deliver a notice of the Ratification in the form and containing the information required by Section 204 of the General Corporation Law and, if the resolutions authorizing the Ratification are adopted by written consent of stockholders in lieu of a meeting, Section 228(e) of the General Corporation Law.

RESOLVED, FURTHER, that, subject to the adoption of the resolutions authorizing the Ratification by the stockholders, the officers of the Company be, and each hereby is, authorize, empowered and directed, for and on behalf of the Company, to execute and file or cause to be filed with the Secretary of State, a certificate of validation in respect of each of (i) the Initial Series B Financing, (ii) the Subsequent Series B Financing, (iii) the Series D Financing, (iv) the Series E Certificate of Designation, (v) the Early Series D Amendments, (vi) the Series F Certificate of Designation. (vii) the Series F Amendments, and (viii) the Series D Overissue in each case in the form prescribed by Section 204 of the General Corporation Law.

RESOLVED, FURTHER, that, any time before the validation effective time in respect of the ratification of the defective corporate acts set forth herein, the Board may abandon such ratification, as the case may be, before or after stockholder approval thereof, without further action by the stockholders.

RESOLVED, FURTHER, that the officers of the Company be, and each hereby is, authorized, empowered and directed, for and on behalf of the Company, to take any and all actions, to negotiate for and enter into agreements and amendments to agreements, to perform all such acts and things, to execute, file, deliver or record in the name and on behalf of the Company, all such certificates (including, but not limited to, a certificate of validation in respect of each of (i) the Initial Series B Financing, (ii) the Subsequent Series B Financing (iii) the Series D Financing, (iv) the Series E Certificate of Designation, (v) the Early Series D Amendments, (vi) the Series F Certificate of Designation, (vii) the Series F Amendments and (viii) the Series D Overissue), instruments, agreements or other documents, and to make all such payments as they, in their judgment, or in the judgment of any one or more of them, may deem necessary, advisable or appropriate in order to carry out the purpose and intent of, or consummate the transactions contemplated by the foregoing resolutions and/or all of the transactions contemplated therein or thereby, the authorization therefor to be conclusively evidenced by the taking of such action or the execution and delivery of such certificates, instruments, agreements or documents.

Exhibit B

Stockholder Resolutions

WHEREAS, the Board of Directors of the Company (the "***Board***") has identified certain potentially defective corporate acts in the resolutions attached hereto as **Attachment 1** (the "***Board Resolutions***"), which Board Resolutions are incorporated herein by reference;

WHEREAS, for the avoidance of doubt, the Board has determined that it is advisable and in the best interests of the Company and its stockholders to ratify all of the potentially defective corporate acts set forth in the Board Resolutions by approving and adopting the Ratification (as defined in the Board Resolutions) pursuant to and in accordance with Section 204 of the General Corporation Law;

WHEREAS, the Board has approved and adopted the Ratification and has directed that the Board Resolutions approving the Ratification be submitted to the holders of valid stock (as defined in Section 204(h) of the General Corporation Law) of the Company entitled to vote thereon for adoption thereby;

WHEREAS, the Board has recommended that the holders of valid stock of the Company entitled to vote on the adoption of the Board Resolutions adopt the Board Resolutions authorizing the Ratification; and

WHEREAS, any claim that any of the potentially defective corporate acts or putative stock referenced in the Board Resolutions being ratified under Section 204 of the General Corporation Law is void or voidable due to the identified potential failure of authorization, or that the Delaware Court of Chancery should declare in its discretion that the ratification thereof in accordance with Section 204 of the General Corporation Law not be effective or be effective only on certain conditions must be brought within 120 days from the relevant validation effective time.

NOW, THEREFORE, BE IT RESOLVED, that, pursuant to and in accordance with Section 204 of the General Corporation Law, the Board Resolutions authorizing the Ratification be, and hereby are, approved, adopted and confirmed in all respects.

RESOLVED, FURTHER, that the officers of the Company be, and each hereby is, authorized, empowered and directed, for and on behalf of the Company, to execute and file or cause to be filed with the Secretary of State of the State of Delaware, the certificates of validation referenced in the Board Resolutions.

RESOLVED, FURTHER, that, any time before the validation effective time, the Board of Directors may abandon the Board Resolutions effecting the Ratification, before or after stockholder approval thereof, without further action by the stockholders.

RESOLVED, FURTHER, that the officers of the Company be, and each hereby is, authorized, empowered and directed, for and on behalf of the Company, to take any and all actions, to negotiate for and enter into agreements and amendments to agreements, to perform all such acts and things, to execute, file, deliver or record in the name and on behalf of the Company, all such certificates (including, but not limited to, the certificates of validation referenced in the Board Resolutions), instruments, agreements or other documents, and to make all such payments as they, in their judgment, or in the judgment of any one or more of them, may deem necessary, advisable or appropriate in order to carry out the purpose and intent of, or consummate the transactions contemplated by the foregoing resolutions and/or all of the transactions contemplated therein or thereby, the authorization therefor to be conclusively evidenced by the taking of such action or the execution and delivery of such certificates, instruments, agreements or documents.

Exhibit C

Certificate of Increase

CERTIFICATE OF INCREASE
OF
SERIES D CONVERTIBLE PREFERRED STOCK
OF
FIBROGEN, INC.

(Pursuant to Section 151 of the General Corporation Law of the State of Delaware)

FibroGen, Inc. (the "Corporation"), a corporation organized and existing under the General Corporation Law of the State of Delaware, in accordance with the provisions of Section 151(g) thereof, DOES HEREBY CERTIFY:

That pursuant to the authority conferred upon the Board of Directors by the certificate of incorporation of the Corporation, the Board of Directors of the Corporation has adopted a resolution authorizing and directing the increase in the number of authorized shares of Series D Convertible Preferred Stock of the Corporation to 7,098,182 shares of Series D Convertible Preferred Stock.

FIBROGEN, INC.

By: */s/ Michael Lowenstein*
Name: Michael Lowenstein
Title: Assistant Secretary

CORRECTED CERTIFICATE OF AMENDMENT OF THE
CERTIFICATE OF DESIGNATIONS
OF
SERIES D CONVERTIBLE PREFERRED STOCK
OF
FIBROGEN, INC.

FibroGen, Inc. (the "Corporation"), a corporation organized and existing under and by virtue of the General Corporation Law of the State of Delaware, DOES HEREBY CERTIFY that:

1. The name of the Corporation is FibroGen, Inc.

2. The Certificate of Amendment of the Certificate of Designations of Series D Convertible Preferred Stock of the Corporation (the "Amended Designation") was filed in the office of the Secretary of State of the State of Delaware on December 21, 2006 and the Amended Designation requires correction as permitted by subsection (f) of Section 103 of the General Corporation Law of the State of Delaware.

3. The inaccuracy or defect of the Amended Designation to be corrected is that the Amended Designation is an inaccurate record of the corporate action referred to therein. The increase in the authorized number of shares of Series D Preferred Stock referred to therein and effected thereby was not an amendment to the certificate of incorporation of the Corporation adopted in accordance with the provisions of Sections 228 and 242 of the General Corporation Law of the State of Delaware, but was instead duly authorized and directed by a resolution adopted by the Board of Directors of the Corporation in accordance with Section 151(g) of the General Corporation Law of the State of Delaware.

4. The Instrument is corrected to read in its entirety as follows:

CERTIFICATE OF INCREASE
OF
SERIES D CONVERTIBLE PREFERRED STOCK
OF
FIBROGEN, INC.

(Pursuant to Section 151 of the General Corporation Law of the State of Delaware)

FibroGen, Inc. (the "Corporation"), a corporation organized and existing under the General Corporation Law of the State of Delaware, in accordance with the provisions of Section 151(g) thereof, DOES HEREBY CERTIFY:

That pursuant to the authority conferred upon the Board of Directors by the certificate of incorporation of the Corporation, the Board of Directors of the Corporation has adopted a resolution authorizing and directing the increase in the number of authorized shares of Series D Convertible Preferred Stock of the Corporation to 7,098,128 shares of Series D Preferred Stock.

IN WITNESS WHEREOF, the Corporation has caused this Certificate to be executed by the undersigned, a duly authorized officer of the Corporation, this 16 day of October, 2014.

FIBROGEN, INC.

By: */s/ Michael Lowenstein*
Name: Michael Lowenstein
Title: Assistant Secretary

CERTIFICATE OF VALIDATION
OF
CORRECTED CERTIFICATE OF AMENDMENT OF THE
CERTIFICATE OF DESIGNATION
OF
SERIES D CONVERTIBLE PREFERRED STOCK
OF
FIBROGEN, INC.

Pursuant to Section 204 of the
General Corporation Law of the State of Delaware

Fibrogen, Inc., a corporation organized and existing under the laws of the State of Delaware (the "Corporation"), certifies as follows:

1. On September 17, 2014, the board of directors of the Corporation adopted the resolutions attached hereto (without the exhibits or schedules thereto) as Exhibit A. On September 30, 2014, the stockholders of the Corporation, acting by written consent in lieu of a meeting in accordance with Section 228 of the General Corporation Law of the State of Delaware adopted the resolutions attached hereto (without the exhibit thereto) as Exhibit B. The foregoing resolutions of the board of directors and of the stockholders were duly adopted by the board of directors and by the stockholders, respectively, in accordance with the provisions of Section 204 of the General Corporation Law of the State of Delaware.

2. The certificate that was previously filed under Section 103 of the General Corporation Law of the State of Delaware in respect of the defective corporate acts identified in the resolutions attached as Exhibit A and Exhibit B hereto was the Certificate of Amendment of the Certificate of Designation of Series D Convertible Preferred Stock of the Corporation filed with the Secretary of State of the State of Delaware on December 21, 2006, as corrected by the Corrected Certificate of Amendment of the Certificate of Designations of Series D Convertible Preferred Stock of the Corporation (the "Corrected Certificate") filed with the Secretary of State of the State of Delaware on October 16, 2014.

3. Attached hereto as Exhibit C are the provisions of the Certificate of Increase of Series D Preferred Stock of the Corporation as would be required under Section 151(g) of the General Corporation Law of the State of Delaware to be included in the Certificate of Increase of Series D Convertible Preferred Stock of the Corporation to be effective as of December 21, 2006 at 11:47 p.m. (Eastern).

4. Attached hereto as Exhibit D is a copy of the Corrected Certificate that was previously filed with the Secretary of State of the State of Delaware on October 16, 2014.

[*Remainder of Page Intentionally Left Blank*]

IN WITNESS WHEREOF, the Corporation has caused this Certificate of Validation to be executed by its duly authorized officer this 16 day of October, 2014.

FIBROGEN, INC.

By: */s/ Michael Lowenstein*
Name: Michael Lowenstein
Title: Assistant Secretary

Exhibit A

Board Resolutions

WHEREAS, in connection with the issuance and sale of shares of Series B Convertible Preferred Stock, par value $0.01 per share (the "***Series B Preferred Stock***"), of the Company, the Certificate of Designations of Series B Convertible Preferred Stock of the Company (the "***Series B Certificate of Designation***") was filed with the Secretary of State of the State of Delaware (the "***Secretary of State***") on November 8, 1995;

WHEREAS, prior to the filing of the Series B Certificate of Designation, the Company issued and sold 2,207,693 shares of Series B Preferred Stock on September 30, 1995 (the "***Initial Series B Financing***");

WHEREAS, the Company has not been able to locate the resolutions of the Board of Directors (the "***Board***") approving and declaring advisable the Series B Certificate of Designation and approving and authorizing the issuance and sale of shares of Series B Preferred Stock in the Initial Series B Financing;

WHEREAS, in connection with the issuance and sale of additional shares of Series B Preferred Stock, the Board approved and declared advisable, the Amended Designation of Series B Convertible Preferred Stock of the Company (the "***Series B Amendment***"), which was filed with the Secretary of State on April 19, 1996;

WHEREAS, prior to the filing of the Series B Amendment, the Company issued and sold 2,061,401 shares of Series B Preferred Stock on March 31, 1996 (the "***Subsequent Series B Financing***");

WHEREAS, in connection with the issuance and sale of shares of Series D Convertible Preferred Stock, par value $0.01 per share (the "***Series D Preferred Stock***"), of the Company, the Board approved and declared advisable, the Amended Designation of Series D Convertible Preferred Stock of the Company (the "***Fourth Series D Amendment***"), which was filed with the Secretary of State on December 21, 2006;

WHEREAS, prior to the filing of the Fourth Series D Amendment, the Company issued and sold 279,999 shares of Series D Preferred Stock on March 29, 2006 (the "***Series D Financing***" and, together with the Initial Series B Financing and the Subsequent Series B Financing, the "***Financings***");

WHEREAS, the Board approved and declared advisable the Certificate of Designations of Series E Preferred Stock of the Company (the "***Series E Certificate of Designation***"), which was filed with the Secretary of State on May 16, 2000, which certificate of designation designated shares of preferred stock in excess of the total number of authorized shares of preferred stock set forth in the certificate of incorporation (as amended and/or restated from time to time, the "***Certificate of Incorporation***");

WHEREAS, the Board approved and declared advisable, the Amended Designation of Series D Preferred Stock of the Company (the "***First Series D Amendment***"), which was filed with the Secretary of State on July 26, 2002, which amendment designated shares of preferred stock in excess of the total number of authorized shares of preferred stock set forth in the Certificate of Incorporation;

WHEREAS, the Board approved and declared advisable, the Amended Designation of Series D Preferred Stock of the Company (the "***Second Series D Amendment***" and together with the First Series D Amendment, the "***Early Series D Amendments***"), which was filed with the Secretary of State on December 27, 2002, which amendment designated shares of preferred stock in excess of the total number of authorized shares of preferred stock set forth in the Certificate of Incorporation;

WHEREAS, the Board approved and declared advisable the Certificate of Designations of Series F Preferred Stock of the Company (the "***Series F Certificate of Designation***"), which was filed with the Secretary of State on December 27, 2004, which certificate of designation designated shares of preferred stock in excess of the total number of authorized shares of preferred stock set forth in the Certificate of Incorporation;

WHEREAS, the Board approved and declared advisable, the Amended Designation of Series F Preferred Stock of the Company (the "***First Series F Amendment***"), which was filed with the Secretary of State on January 31, 2005, which amendment designated shares of preferred stock in excess of the total number of authorized shares of preferred stock set forth in the Certificate of Incorporation;

WHEREAS, the Board approved and declared advisable, the Amended Designation of Series F Preferred Stock of the Company (the "***Second Series F Amendment***" and together with the First Series F Amendment, the "***Series F Amendments***"), which was filed with the Secretary of State on November 7, 2005, which amendment designated shares of preferred stock in excess of the total number of authorized shares of preferred stock set forth in the Certificate of Incorporation;

WHEREAS, on March 29, 2006, after previously approving the issuance of up to 550,000 shares of the Company's Preferred Stock in connection with a merger, the Company issued shares of Series D Preferred Stock in connection with said merger in excess of the total number of shares designated as Series D Preferred Stock in the Amended Designation of Series D Convertible Preferred Stock of the Company (the "***Third Series D Amendment***"), which was filed with the Secretary of State on February 19, 2004, and in excess of the total number of shares designated as Series D Preferred Stock in the Fourth Series D Amendment, which was filed on December 21, 2006 (the "***Series D Overissue***");

WHEREAS, the Company from time to time granted certain stock options and warrants and issued certain shares of its stock, each as set forth on **Attachment 1-A** hereto, without record of, or prior to, approval by the Board (collectively, the "***Securities Issuances***");

WHEREAS, for the avoidance of doubt, the Board has determined that it is advisable and in the best interests of the Company and its stockholders to address any potential issues that may arise in light thereof;

WHEREAS, the Board has determined that it is advisable and in the best interests of the Company and its stockholders to ratify all of the above corporate actions (the "***Ratification***"), in each case pursuant to and in accordance with Section 204 of the General Corporation Law; and

WHEREAS, any claim that any of the potentially defective corporate acts or putative stock referenced herein being ratified under Section 204 of the General Corporation Law is void or voidable due to the identified potential failure of authorization, or that the Delaware Court of Chancery should declare in its discretion that the ratification thereof in accordance with Section 204 of the General Corporation Law not be effective or be effective only on certain conditions must be brought within 120 days from the relevant validation effective time.

NOW, THEREFORE, BE IT RESOLVED, that (i) each of the Financings, (ii) the filing and effectiveness of each of the Series B Certificate of Designation, the Series E Certificate of Designation, the Early Series D Amendments, the Series F Certificate of Designation and the Series F Amendments with the Secretary of State, (iii) the Series D Overissue, and (iv) each of the Securities Issuances, are the potentially defective corporate acts to be ratified by the Ratification.

RESOLVED, FURTHER, that the time of the Initial Series B Financing was September 30, 1995, the time of the Subsequent Series B Financing was March 31, 1996, and the time of the Series D Financing was March 29, 2006.

RESOLVED, FURTHER, that the time of the filing and effectiveness of the Series B Certificate of Designation was November 8, 1995, the time of the filing and effectiveness of the Series E Certificate of Designation was May 16, 2000, the time of the filing and effectiveness of the First Series D Amendment was July 26, 2002, the time of the filing and effectiveness of the Second Series D Amendment was December 27, 2002, the time of the filing and effectiveness of the Series F Certificate of Designation was December 27, 2004, the time of the filing and effectiveness of the First Series F Amendment was January 31, 2005 and the time of the filing and effectiveness of the Second Series F Amendment was November 7, 2005.

RESOLVED, FURTHER, that the time of the Series D Overissue was March 29, 2006.

RESOLVED, FURTHER, that the time of each of the Securities Issuances is as set forth on **Attachment 1-A**.

RESOLVED, FURTHER, that the Initial Series B Financing involved the issuance of 2,207,693 shares of Series B Preferred Stock on September 30, 1995, the Subsequent Series B Financing involved the issuance of 2,061,401 shares of Series B Preferred Stock on March 31, 1996 and the Series D Financing involved the issuance of 279,999 shares of Series D Preferred Stock on March 29, 2006, all of which shares are putative stock.

RESOLVED, FURTHER, that the Series D Overissue involved the issuance of 54 shares of Series D Preferred Stock on March 29, 2006, which shares are putative stock.

RESOLVED, FURTHER, that the Securities Issuances involved the issuance of shares of putative stock (or options or warrants in respect thereof), the number and type of shares of putative stock issued, and the date or dates upon which such shares of stock were purported to have been issued is as set forth on **Attachment 1-A**, together with the vesting terms and grant or issuance price, as applicable.

RESOLVED, FURTHER, that the Board hereby identifies the following as the failures of authorization in respect of the Financings: (i) the failure of each of the Series B Certificate of Designation, Series B Amendment and the Fourth Series D Amendment, as the case may be, to have been filed and to have become effective with the Secretary of State prior to the issuance of shares in connection with each such Financing, and (ii) solely in respect of the Initial Series B Financing, the potential failure of the Board to have approved and declared advisable the Series

B Certificate of Designation prior to the filing and effectiveness thereof with the Secretary of State and to have validly authorized the issuance of shares of Series B Preferred Stock prior to such issuance.

RESOLVED, FURTHER, that the Board hereby identifies the potential failure of the Board to have approved and declared advisable the Series B Certificate of Designation prior to the filing and effectiveness thereof with the Secretary of State as the failure of authorization in respect of the Series B Certificate of Designation.

RESOLVED, FURTHER, that the Board hereby identifies the following as the failure of authorization in respect of the filing and effectiveness of the Series E Certificate of Designation, the Early Series D Amendments, the Series F Certificate of Designation and the Series F Amendments: the failure of the total number of authorized shares of preferred stock in the Certificate of Incorporation to have been increased pursuant to an amendment thereto or an amendment and restatement thereof, prior to the Board's approval of the Series E Certificate of Designation, the Early Series D Amendments, the Series F Certificate of Designation and the Series F Amendments, as the case may be, and the filing and effectiveness thereof with the Secretary of State.

RESOLVED, FURTHER, that the Board hereby identifies the following as the failures of authorization in respect of the Series D Overissue: the failure of the total number of shares designated as Series D Preferred Stock to have been increased pursuant to an amendment to the Third Series D Amendment prior to the issuance thereof;

RESOLVED, FURTHER, that the Board hereby identifies the following as the failure of authorization in respect of the Securities Issuances: the failure of the Board to have validly authorized the issuance thereof prior to such issuance.

RESOLVED, FURTHER, that, pursuant to and in accordance with Section 204 of the General Corporation Law, the Ratification be, and hereby is, approved, adopted and confirmed in all respects.

RESOLVED, FURTHER, that these resolutions authorizing the Ratification shall be submitted to the holders of valid stock (as defined in Section 204(h) of the General Corporation Law) of the Company entitled to vote thereon for adoption thereby, and the Board of Directors recommends that such stockholders adopt these resolutions authorizing the Ratification.

RESOLVED FURTHER, that the record date (the "***Record Date***") for determining the stockholders of the Company entitled to vote on these resolutions authorizing the Ratification shall be the close of business on the date hereof.

RESOLVED, FURTHER, that the officers of the Company be, and each hereby is, authorized, empowered and directed, for and on behalf of the Company, to deliver a notice of the Ratification in the form and containing the information required by Section 204 of the General Corporation Law and, if the resolutions authorizing the Ratification are adopted by written consent of stockholders in lieu of a meeting, Section 228(e) of the General Corporation Law.

RESOLVED, FURTHER, that, subject to the adoption of the resolutions authorizing the Ratification by the stockholders, the officers of the Company be, and each hereby is, authorize, empowered and directed, for and on behalf of the Company, to execute and file or cause to be filed with the Secretary of State, a certificate of validation in respect of each of (i) the Initial Series B Financing, (ii) the Subsequent Series B Financing, (iii) the Series D Financing, (iv) the Series E Certificate of Designation, (v) the Early Series D Amendments, (vi) the Series F Certificate of Designation. (vii) the Series F Amendments, and (viii) the Series D Overissue in each case in the form prescribed by Section 204 of the General Corporation Law.

RESOLVED, FURTHER, that, any time before the validation effective time in respect of the ratification of the defective corporate acts set forth herein, the Board may abandon such ratification, as the case may be, before or after stockholder approval thereof, without further action by the stockholders.

RESOLVED, FURTHER, that the officers of the Company be, and each hereby is, authorized, empowered and directed, for and on behalf of the Company, to take any and all actions, to negotiate for and enter into agreements and amendments to agreements, to perform all such acts and things, to execute, file, deliver or record in the name and on behalf of the Company, all such certificates (including, but not limited to, a certificate of validation in respect of each of (i) the Initial Series B Financing, (ii) the Subsequent Series B Financing (iii) the Series D Financing, (iv) the Series E Certificate of Designation, (v) the Early Series D Amendments, (vi) the Series F Certificate of Designation, (vii) the Series F Amendments and (viii) the Series D Overissue), instruments, agreements or other documents, and to make all such payments as they, in their judgment, or in the judgment of any one or more of them, may deem necessary, advisable or appropriate in order to carry out the purpose and intent of, or consummate the transactions contemplated by the foregoing resolutions and/or all of the transactions contemplated therein or thereby, the authorization therefor to be conclusively evidenced by the taking of such action or the execution and delivery of such certificates, instruments, agreements or documents.

Exhibit B

Stockholder Resolutions

WHEREAS, the Board of Directors of the Company (the "***Board***") has identified certain potentially defective corporate acts in the resolutions attached hereto as **Attachment 1** (the "***Board Resolutions***"), which Board Resolutions are incorporated herein by reference;

WHEREAS, for the avoidance of doubt, the Board has determined that it is advisable and in the best interests of the Company and its stockholders to ratify all of the potentially defective corporate acts set forth in the Board Resolutions by approving and adopting the Ratification (as defined in the Board Resolutions) pursuant to and in accordance with Section 204 of the General Corporation Law;

WHEREAS, the Board has approved and adopted the Ratification and has directed that the Board Resolutions approving the Ratification be submitted to the holders of valid stock (as defined in Section 204(h) of the General Corporation Law) of the Company entitled to vote thereon for adoption thereby;

WHEREAS, the Board has recommended that the holders of valid stock of the Company entitled to vote on the adoption of the Board Resolutions adopt the Board Resolutions authorizing the Ratification; and

WHEREAS, any claim that any of the potentially defective corporate acts or putative stock referenced in the Board Resolutions being ratified under Section 204 of the General Corporation Law is void or voidable due to the identified potential failure of authorization, or that the Delaware Court of Chancery should declare in its discretion that the ratification thereof in accordance with Section 204 of the General Corporation Law not be effective or be effective only on certain conditions must be brought within 120 days from the relevant validation effective time.

NOW, THEREFORE, BE IT RESOLVED, that, pursuant to and in accordance with Section 204 of the General Corporation Law, the Board Resolutions authorizing the Ratification be, and hereby are, approved, adopted and confirmed in all respects.

RESOLVED, FURTHER, that the officers of the Company be, and each hereby is, authorized, empowered and directed, for and on behalf of the Company, to execute and file or cause to be filed with the Secretary of State of the State of Delaware, the certificates of validation referenced in the Board Resolutions.

RESOLVED, FURTHER, that, any time before the validation effective time, the Board of Directors may abandon the Board Resolutions effecting the Ratification, before or after stockholder approval thereof, without further action by the stockholders.

RESOLVED, FURTHER, that the officers of the Company be, and each hereby is, authorized, empowered and directed, for and on behalf of the Company, to take any and all actions, to negotiate for and enter into agreements and amendments to agreements, to perform all such acts and things, to execute, file, deliver or record in the name and on behalf of the Company, all such certificates (including, but not limited to, the certificates of validation referenced in the Board Resolutions), instruments, agreements or other documents, and to make all such payments as they, in their judgment, or in the judgment of any one or more of them, may deem necessary, advisable or appropriate in order to carry out the purpose and intent of, or consummate the transactions contemplated by the foregoing resolutions and/or all of the transactions contemplated therein or thereby, the authorization therefor to be conclusively evidenced by the taking of such action or the execution and delivery of such certificates, instruments, agreements or documents.

Exhibit C

Certificate of Increase of Series D Convertible Preferred Stock

CERTIFICATE OF INCREASE
OF
SERIES D CONVERTIBLE PREFERRED STOCK
OF
FIBROGEN, INC.

(Pursuant to Section 151 of the General Corporation Law of the State of Delaware)

FibroGen, Inc. (the "Corporation"), a corporation organized and existing under the General Corporation Law of the State of Delaware, in accordance with the provisions of Section 151(g) thereof, DOES HEREBY CERTIFY:

That pursuant to the authority conferred upon the Board of Directors by the certificate of incorporation of the Corporation, the Board of Directors of the Corporation has adopted a resolution authorizing and directing the increase in the number of authorized shares of Series D Convertible Preferred Stock of the Corporation to 7,098,182 shares of Series D Convertible Preferred Stock.

FIBROGEN, INC.

By: */s/ Michael Lowenstein*
Name: Michael Lowenstein
Title: Assistant Secretary

Exhibit D

Corrected Certificate

CORRECTED CERTIFICATE OF AMENDMENT OF THE
CERTIFICATE OF DESIGNATIONS
OF
SERIES D CONVERTIBLE PREFERRED STOCK
OF
FIBROGEN, INC.

FibroGen, Inc. (the "Corporation"), a corporation organized and existing under and by virtue of the General Corporation Law of the State of Delaware, DOES HEREBY CERTIFY that:

1. The name of the Corporation is FibroGen, Inc.

2. The Certificate of Amendment of the Certificate of Designations of Series D Convertible Preferred Stock of the Corporation (the "Amended Designation") was filed in the office of the Secretary of State of the State of Delaware on December 21, 2006 and the Amended Designation requires correction as permitted by subsection (f) of Section 103 of the General Corporation Law of the State of Delaware.

3. The inaccuracy or defect of the Amended Designation to be corrected is that the Amended Designation is an inaccurate record of the corporate action referred to therein. The increase in the authorized number of shares of Series D Preferred Stock referred to therein and effected thereby was not an amendment to the certificate of incorporation of the Corporation adopted in accordance with the provisions of Sections 228 and 242 of the General Corporation Law of the State of Delaware, but was instead duly authorized and directed by a resolution adopted by the Board of Directors of the Corporation in accordance with Section 151(g) of the General Corporation Law of the State of Delaware.

4. The Instrument is corrected to read in its entirety as follows:

CERTIFICATE OF INCREASE
OF
SERIES D CONVERTIBLE PREFERRED STOCK
OF
FIBROGEN, INC.

(Pursuant to Section 151 of the General Corporation Law of the State of Delaware)

FibroGen, Inc. (the "Corporation"), a corporation organized and existing under the General Corporation Law of the State of Delaware, in accordance with the provisions of Section 151(g) thereof, DOES HEREBY CERTIFY:

That pursuant to the authority conferred upon the Board of Directors by the certificate of incorporation of the Corporation, the Board of Directors of the Corporation has adopted a resolution authorizing and directing the increase in the number of authorized shares of Series D Convertible Preferred Stock of the Corporation to 7,098,128 shares of Series D Preferred Stock.

IN WITNESS WHEREOF, the Corporation has caused this Certificate to be executed by the undersigned, a duly authorized officer of the Corporation, this 16 day of October, 2014.

FIBROGEN, INC.

By: */s/ Michael Lowenstein*
Name: Michael Lowenstein
Title: Assistant Secretary

CERTIFICATE OF AMENDMENT OF
CERTIFICATE OF INCORPORATION
OF
FIBROGEN, INC.

FIBROGEN, INC., a corporation organized and existing under and by virtue of the General Corporation Law of the State of Delaware (the "***Corporation***"), hereby certifies that:

FIRST: The name of the Corporation is **FIBROGEN, INC.**

SECOND: The date on which the Certificate of Incorporation of the Corporation was originally filed with the Secretary of State of the State of Delaware is September 29, 1993.

THIRD: The Board of Directors of the Corporation, acting in accordance with the provisions of Sections 141 and 242 of the General Corporation Law of the State of Delaware, adopted resolutions to amend Article FOURTH of the Corporation's Certificate of Incorporation (as amended and/or restated from time to time) to strike out the first paragraph of Article FOURTH and substituting in lieu of said paragraph the following two paragraphs:

"FOURTH. The total number of shares of all classes of capital stock which the corporation shall have the authority to issue is Three Hundred Fifty Million (350,000,000) shares, comprised of Two Hundred Twenty-Five Million (225,000,000) shares of Common Stock with a par value of One Cent ($.01) per share (the "Common Stock") and One Hundred Twenty-Five Million (125,000,000) shares of Preferred Stock with a par value of One Cent ($.01) per share (the "Preferred Stock").

Effective when this Certificate of Amendment of Certificate of Incorporation is filed with the Secretary of State of the State of Delaware, each two and a half (2.5) shares of Common Stock, par value $0.01 per share, issued and outstanding shall, automatically and without any action on the part of the respective holders thereof, be combined and converted into one (1) share of Common Stock, par value $0.01 per share; provided, however, that the Corporation shall issue no fractional shares as a result of the actions set forth herein but shall instead pay to the holder of such fractional share a sum in cash equal to such fraction multiplied by the fair market value of one share of Common Stock on the day before the date this Certificate of Amendment of Certificate of Incorporation is filed with the Secretary of State of the State of Delaware."

FOURTH: This Certificate of Amendment was duly adopted by the stockholders of the Corporation in accordance with the provisions of Sections 228 and 242 of the General Corporation Law of the State of Delaware.

IN WITNESS WHEREOF, the Corporation has caused this Certificate of Amendment to be signed by its Chief Executive Officer this 10th day of November, 2014.

FIBROGEN, INC.

By: /s/ Thomas B. Neff
Thomas B. Neff, Chief Executive Officer

NUMBER

SHARES

FIBROGEN

INCORPORATED UNDER THE LAWS OF THE STATE OF DELAWARE

SEE REVERSE SIDE FOR CERTAIN DEFINITIONS

CUSIP 31572Q 80 8

THIS CERTIFIES THAT

is the owner of

SHARES OF COMMON STOCK

FibroGen, Inc.

transferable on the books of the Corporation by the holder hereof in person or by Attorney upon surrender of this certificate properly endorsed. This certificate is not valid until countersigned and registered by the Transfer Agent and Registrar.

IN WITNESS WHEREOF, the said Corporation has caused this certificate to be signed by facsimile signatures of its duly authorized officers.

Dated:

COUNTERSIGNED AND REGISTERED:
WELLS FARGO BANK, N.A.

BY

AUTHORIZED SIGNATURE

TRANSFER AGENT AND REGISTRAR

SECRETARY

CHIEF EXECUTIVE OFFICER

AMERICAN FINANCIAL PRINTING INCORPORATED - MINNEAPOLIS

The following abbreviations, when used in the inscription on the face of this certificate, shall be construed as though they were written out in full according to applicable laws or regulations:

TEN COM – as tenants in common

TEN ENT – as tenants by entireties

JT TEN – as joint tenants with right of survivorship and not as tenants in common

UTMA – _____ Custodian _____
(Cust) (Minor)
under Uniform Transfers to Minors Act _____
(State)

Additional abbreviations may also be used though not in the above list.

For value received ____ *hereby sell, assign, and transfer unto*

PLEASE INSERT SOCIAL SECURITY OR OTHER IDENTIFYING NUMBER OF ASSIGNEE

_____

(PLEASE PRINT OR TYPEWRITE NAME AND ADDRESS INCLUDING POSTAL ZIP CODE OF ASSIGNEE)

_____

_____

_____ *Shares*

of the capital stock represented by the within Certificate, and do hereby irrevocably constitute and appoint _____

_____ *Attorney*

to transfer the said stock on the books of the within-named Corporation with full power of substitution in the premises.

Dated _____ _____

NOTICE: THE SIGNATURE TO THIS ASSIGNMENT MUST CORRESPOND WITH THE NAME AS WRITTEN UPON THE FACE OF THE CERTIFICATE IN EVERY PARTICULAR WITHOUT ALTERATION OR ENLARGEMENT OR ANY CHANGE WHATEVER.

SIGNATURE GUARANTEED

ALL GUARANTEES MUST BE MADE BY A FINANCIAL INSTITUTION (SUCH AS A BANK OR BROKER) WHICH IS A PARTICIPANT IN THE MEDALLION SIGNATURE GUARANTEE PROGRAM ("STAMP"), THE NEW YORK STOCK EXCHANGE, INC. MEDALLION SIGNATURE PROGRAM ("MSP"), OR THE STOCK EXCHANGES MEDALLION PROGRAM ("SEMP") AND MUST NOT BE DATED. GUARANTEES BY A NOTARY PUBLIC ARE NOT ACCEPTABLE.

FIBROGEN, INC.

2014 EQUITY INCENTIVE PLAN

ADOPTED BY THE BOARD OF DIRECTORS: SEPTEMBER 09, 2014
APPROVED BY THE STOCKHOLDERS: SEPTEMBER 30, 2014
IPO DATE/EFFECTIVE DATE: [ ], **2014**

1. GENERAL.

(a) Successor to and Continuation of Prior Plan.

(i) The Plan is the successor to and continuation of the FibroGen Amended and Restated 2005 Stock Plan, as amended (the "***Prior Plan***"). From and after 12:01 a.m. Pacific time on the Effective Date, no additional stock awards will be granted under the Prior Plan. All stock awards granted under the Prior Plan remain subject to the terms of the Prior Plan. All Awards granted on or after 12:01 a.m. Pacific Time on the Effective Date will be granted under the Plan.

(ii) Any shares that would otherwise remain available for future grants under the Prior Plan as of 12:01 a.m. Pacific Time on the Effective Date ceased to be available under the Prior Plan at such time. Instead, that number of shares of Common Stock equal to the number of shares of Common Stock of the Company then available for future grants under the Prior Plan (the "***Prior Plan's Available Reserve***") was added to the Share Reserve (as further described in Section 3(a) below) and became immediately available for grants and issuance pursuant to Stock Awards under the Plan, up to the maximum number set forth in Section 3(a) below.

(iii) From and after 12:01 a.m. Pacific time on the Effective Date, a number of shares of Common Stock equal to the total number of shares of Common Stock subject, at such time, to outstanding stock options granted under the Prior Plan that: (A) expire or terminate for any reason prior to exercise or settlement; (B) are forfeited or reacquired because of the failure to meet a contingency or condition required to vest such shares or are repurchased at the original issuance price; or (C) are otherwise reacquired or withheld (or not issued) to satisfy a tax withholding obligation in connection with an award (the "***Returning Shares***") will immediately be added to the Share Reserve (as further described in Section 3(a) below) as and when such shares become Returning Shares (up to the maximum number set forth in Section 3(a)), and become available for issuance pursuant to Stock Awards granted hereunder.

(b) Eligible Award Recipients. Employees, Directors and Consultants are eligible to receive Awards.

(c) Available Awards. The Plan provides for the grant of the following Awards: (i) Incentive Stock Options, (ii) Nonstatutory Stock Options, (iii) Stock Appreciation Rights (iv) Restricted Stock Awards, (v) Restricted Stock Unit Awards, (vi) Performance Stock Awards, (vii) Performance Cash Awards, and (viii) Other Stock Awards.

(d) Purpose. The Plan, through the granting of Awards, is intended to help the Company secure and retain the services of eligible award recipients, provide incentives for such persons to exert maximum efforts for the success of the Company and any Affiliate, and provide a means by which the eligible recipients may benefit from increases in value of the Common Stock.

2. ADMINISTRATION.

(a) Administration by Board. The Board will administer the Plan. The Board may delegate administration of the Plan to a Committee or Committees, as provided in Section 2(c).

(b) Powers of Board. The Board will have the power, subject to, and within the limitations of, the express provisions of the Plan:

(i) To determine: (A) who will be granted Awards; (B) when and how each Award will be granted; (C) what type of Award will be granted; (D) the provisions of each Award (which need not be identical), including when a person will be permitted to exercise or otherwise receive cash or Common Stock under the Award; (E) the number of shares of Common Stock subject to, or the cash value of, an Award; and (F) the Fair Market Value applicable to a Stock Award.

(ii) To construe and interpret the Plan and Awards granted under it, and to establish, amend and revoke rules and regulations for administration of the Plan and Awards. The Board, in the exercise of these powers, may correct any defect, omission or inconsistency in the Plan or in any Award Agreement or in the written terms of a Performance Cash Award, in a manner and to the extent it will deem necessary or expedient to make the Plan or Award fully effective.

(iii) To settle all controversies regarding the Plan and Awards granted under it.

(iv) To accelerate, in whole or in part, the time at which an Award may be exercised or vest (or at which cash or shares of Common Stock may be issued).

(v) To suspend or terminate the Plan at any time. Except as otherwise provided in the Plan or an Award Agreement, suspension or termination of the Plan will not materially impair a Participant's rights under his or her then-outstanding Award without his or her written consent, except as provided in subsection (viii) below.

(vi) To amend the Plan in any respect the Board deems necessary or advisable, including, without limitation, by adopting amendments relating to Incentive Stock Options and certain nonqualified deferred compensation under Section 409A of the Code and/or to bring the Plan or Awards granted under the Plan into compliance therewith, subject to the limitations, if any, of applicable law. If required by applicable law or listing requirements, and except as provided in Section 9(a) relating to Capitalization Adjustments, the Company will seek stockholder approval of any amendment of the Plan that (A) materially increases the number of shares of Common Stock available for issuance under the Plan, (B) materially expands the class of individuals eligible to receive Awards under the Plan, (C) materially increases the benefits accruing to Participants under the Plan, (D) materially extends the term of the Plan, or (E)

materially expands the types of Awards available for issuance under the Plan. Except as otherwise provided in the Plan or an Award Agreement, no amendment of the Plan will materially impair that Participant's rights under an outstanding Award without his or her written consent.

(vii) To submit any amendment to the Plan for stockholder approval, including, but not limited to, amendments to the Plan intended to satisfy the requirements of (A) Section 162(m) of the Code regarding the exclusion of performance-based compensation from the limit on corporate deductibility of compensation paid to Covered Employees, (B) Section 422 of the Code regarding "incentive stock options" or (C) Rule 16b-3.

(viii) To approve forms of Award Agreements for use under the Plan and to amend the terms of any one or more outstanding Awards. Except with respect to amendments that disqualify or impair the status of an Incentive Stock Option or as otherwise provided in the Plan or an Award Agreement, no amendment of an outstanding Award will materially impair that Participant's rights under his or her outstanding Award without his or her written consent. To be clear, unless prohibited by applicable law, the Board may amend the terms of an Award without the affected Participant's consent if necessary (A) to maintain the qualified status of the Award as an Incentive Stock Option, (B) to clarify the manner of exemption from, or to bring the Award into compliance with, Section 409A of the Code, or (C) to comply with other applicable laws or listing requirements.

(ix) Generally, to exercise such powers and to perform such acts as the Board deems necessary or expedient to promote the best interests of the Company and that are not in conflict with the provisions of the Plan or Awards.

(x) To adopt such procedures and sub-plans as are necessary or appropriate to permit or facilitate participation in the Plan by Employees, Directors or Consultants who are foreign nationals or employed outside the United States or allow Awards to qualify for special tax treatment in a foreign jurisdiction; *provided*, that Board approval will not be necessary for immaterial modifications to the Plan or any Award Agreement that are required for compliance with the laws of the relevant foreign jurisdiction.

(c) Delegation to Committee.

(i) General. The Board may delegate some or all of the administration of the Plan to a Committee or Committees. If administration of the Plan is delegated to a Committee, the Committee will have, in connection with the administration of the Plan, the powers theretofore possessed by the Board that have been delegated to the Committee, including the power to delegate to a subcommittee of the Committee any of the administrative powers the Committee is authorized to exercise (and references in this Plan to the Board will thereafter be to the Committee or subcommittee, as applicable). Any delegation of administrative powers will be reflected in resolutions, not inconsistent with the provisions of the Plan, adopted from time to time by the Board or Committee (as applicable). The Committee may, at any time, abolish the subcommittee and/or revest in the Committee any powers delegated to the subcommittee. The Board may retain the authority to concurrently administer the Plan with the Committee and may, at any time, revest in the Board some or all of the powers previously delegated.

(ii) Section 162(m) and Rule 16b-3 Compliance. The Committee may consist solely of two or more Outside Directors, in accordance with Section 162(m) of the Code, or solely of two or more Non-Employee Directors, in accordance with Rule 16b-3.

(d) Delegation to an Officer. The Board may delegate to one or more Officers the authority to do one or both of the following (i) designate Employees who are not Officers to be recipients of Options and SARs (and, to the extent permitted by applicable law, other Stock Awards) and, to the extent permitted by applicable law, the terms of such rights and options, and (ii) determine the number of shares of Common Stock to be subject to such Stock Awards granted to such Employees; *provided*, *however*, that the Board resolutions regarding such delegation will specify the total number of shares of Common Stock that may be subject to the Stock Awards granted by such Officer and that such Officer may not grant a Stock Award to himself or herself. Any such Stock Awards will be granted on the form of Stock Award Agreement most recently approved for use by the Committee or the Board, unless otherwise provided in the resolutions approving the delegation authority. The Board may not delegate authority to an Officer who is acting solely in the capacity of an Officer (and not also as a Director) to determine the Fair Market Value (as defined below).

(e) Effect of Board's Decision. All determinations, interpretations and constructions made by the Board in good faith will not be subject to review by any person and will be final, binding and conclusive on all persons.

3. SHARES SUBJECT TO THE PLAN.

(a) Share Reserve.

(i) Subject to Section 9(a) relating to Capitalization Adjustments and the "evergreen" provision in Section 3(a)(ii), the aggregate number of shares of Common Stock that may be issued pursuant to Stock Awards from and after the Effective Date (the "***Share Reserve***") will not exceed the Prior Plan's Available Reserve, which was 7,603,509[1] shares as of September 09, 2014, as increased from time to time by any Returning Shares in an amount not to exceed 12,972,999[2] shares.

(ii) In addition, the Share Reserve will automatically increase on January 1st of each year, for the period commencing on (and including) January 1, 2016 and ending on (and including) January 1, 2024, in an amount equal to 4.0% of the total number of shares of Capital Stock outstanding on December 31st of the preceding calendar year. Notwithstanding the foregoing, the Board may act prior to January 1st of a given year to provide that there will be no January 1st increase in the Share Reserve for such year or that the increase in the Share Reserve for such year will be a lesser number of shares of Common Stock than would otherwise occur pursuant to the preceding sentence.

(iii) For clarity, the Share Reserve is a limitation on the number of shares of Common Stock that may be issued under the Plan. As a single share may be subject to grant more than once (e.g., if a share subject to a Stock Award is forfeited, it may be made subject to

1 The initial 19,008,777 shares reserved for issuance were adjusted to 7,603,509 pursuant to the 1-for-2.5 reverse split of the Company's Common Stock, effective November 10, 2014.

2 The maximum number of Returning Shares was adjusted from 32,432,460 to 12,972,999 pursuant to the 1-for-2.5 reverse split of the Company's Common Stock, effective November 10, 2014.

grant again as provided in Section 3(b) below), the Share Reserve is not a limit on the number of Stock Awards that can be granted.

(iv) Shares may be issued in connection with a merger or acquisition as permitted by NASDAQ Listing Rule 5635(c) or, if applicable, NYSE Listed Company Manual Section 303A.08, AMEX Company Guide Section 711 or other applicable rule, and such issuance will not reduce the number of shares available for issuance under the Plan.

(b) Reversion of Shares to the Share Reserve. If a Stock Award or any portion of a Stock Award (i) expires or otherwise terminates without all of the shares covered by such Stock Award having been issued or (ii) is settled in cash (*i.e.*, the Participant receives cash rather than stock), such expiration, termination or settlement will not reduce (or otherwise offset) the number of shares of Common Stock that may be available for issuance under the Plan. If any shares of Common Stock issued pursuant to a Stock Award are forfeited back to or repurchased by the Company because of the failure to meet a contingency or condition required to vest such shares in the Participant, then the shares that are forfeited or repurchased will revert to and again become available for issuance under the Plan. Any shares reacquired by the Company in satisfaction of tax withholding obligations on a Stock Award or as consideration for the exercise or purchase price of a Stock Award will again become available for issuance under the Plan.

(c) Incentive Stock Option Limit. Subject to the provisions of Section 9(a) relating to Capitalization Adjustments, the aggregate maximum number of shares of Common Stock that may be issued pursuant to the exercise of Incentive Stock Options will be 24,000,000[3] shares of Common Stock.

(d) Section 162(m) Limitations. Subject to the provisions of Section 9(a) relating to Capitalization Adjustments, at such time as the Company may be subject to the applicable provisions of Section 162(m) of the Code: (i) a maximum of 2,000,000[4] shares of Common Stock subject to Options, SARs and Other Stock Awards whose value is determined by reference to an increase over an exercise or strike price of at least 100% of the Fair Market Value on the date the Stock Award is granted may be granted to any one Participant during any one calendar year, (ii) a maximum of 2,000,000[5] shares of Common Stock subject to Performance Stock Awards may be granted to any one Participant during any one calendar year (whether the grant, vesting or exercise is contingent upon the attainment during the Performance Period of the Performance Goals) and (iii) a maximum of $2,000,000 may be granted as a Performance Cash Award to any one Participant during any one calendar year. If a Performance Stock Award is in the form of an Option, it will count only against the Performance Stock Award limit. If a Performance Stock Award could (but is not required to) be paid out in cash, it will count only against the Performance Stock Award limit.

(e) Source of Shares. The stock issuable under the Plan will be shares of authorized but unissued or reacquired Common Stock, including shares repurchased by the Company on the open market or otherwise.

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3 The share limit was adjusted from 60,000,000 to 24,000,000 pursuant to the 1-for-2.5 reverse split of the Company's Common Stock, effective November 10, 2014.

4 The share limit reflects the 1-for-2.5 reverse split of the Company's Common Stock, effective November 10, 2014.

5 The share limit reflects the 1-for-2.5 reverse split of the Company's Common Stock, effective November 10, 2014.

4. ELIGIBILITY.

(a) Eligibility for Specific Stock Awards. Incentive Stock Options may be granted only to employees of the Company or a "parent corporation" or "subsidiary corporation" thereof (as such terms are defined in Sections 424(e) and 424(f) of the Code). Stock Awards other than Incentive Stock Options may be granted to Employees, Directors and Consultants; *provided, however*, that Stock Awards may not be granted to Employees, Directors and Consultants who are providing Continuous Service only to any "parent" of the Company, as such term is defined in Rule 405 of the Securities Act, unless (i) the stock underlying such Stock Awards is treated as "service recipient stock" under Section 409A of the Code (for example, because the Stock Awards are granted pursuant to a corporate transaction such as a spin off transaction), (ii) the Company, in consultation with its legal counsel, has determined that such Stock Awards are otherwise exempt from Section 409A of the Code, or (iii) the Company, in consultation with its legal counsel, has determined that such Stock Awards comply with the distribution requirements of Section 409A of the Code.

(b) Ten Percent Stockholders. A Ten Percent Stockholder will not be granted an Incentive Stock Option unless the exercise price of such Option is at least 110% of the Fair Market Value on the date of grant and the Option is not exercisable after the expiration of five years from the date of grant.

5. PROVISIONS RELATING TO OPTIONS AND STOCK APPRECIATION RIGHTS.

Each Option or SAR will be in such form and will contain such terms and conditions as the Board deems appropriate. All Options will be separately designated Incentive Stock Options or Nonstatutory Stock Options at the time of grant, and, if certificates are issued, a separate certificate or certificates will be issued for shares of Common Stock purchased on exercise of each type of Option. If an Option is not specifically designated as an Incentive Stock Option, or if an Option is designated as an Incentive Stock Option but some portion or all of the Option fails to qualify as an Incentive Stock Option under the applicable rules, then the Option (or portion thereof) will be a Nonstatutory Stock Option. The provisions of separate Options or SARs need not be identical; *provided*, *however*, that each Award Agreement will conform to (through incorporation of provisions hereof by reference in the applicable Award Agreement or otherwise) the substance of each of the following provisions:

(a) Term. Subject to the provisions of Section 4(b) regarding Ten Percent Stockholders, no Option or SAR will be exercisable after the expiration of ten years from the date of its grant or such shorter period specified in the Award Agreement.

(b) Exercise Price. Subject to the provisions of Section 4(b) regarding Ten Percent Stockholders, the exercise or strike price of each Option or SAR will be not less than 100% of the Fair Market Value of the Common Stock subject to the Option or SAR on the date the Award is granted. Notwithstanding the foregoing, an Option or SAR may be granted with an exercise or strike price lower than 100% of the Fair Market Value of the Common Stock subject to the Award if such Award is granted pursuant to an assumption of or substitution for another option or stock appreciation right pursuant to a Corporate Transaction and in a manner consistent

with the provisions of Section 409A of the Code and, if applicable, Section 424(a) of the Code. Each SAR will be denominated in shares of Common Stock equivalents.

(c) Purchase Price for Options. The purchase price of Common Stock acquired pursuant to the exercise of an Option may be paid, to the extent permitted by applicable law and as determined by the Board in its sole discretion, by any combination of the methods of payment set forth below. The Board will have the authority to grant Options that do not permit all of the following methods of payment (or otherwise restrict the ability to use certain methods) and to grant Options that require the consent of the Company to use a particular method of payment. The permitted methods of payment are as follows:

(i) by cash, check, bank draft or money order payable to the Company;

(ii) pursuant to a program developed under Regulation T as promulgated by the Federal Reserve Board that, prior to the issuance of the stock subject to the Option, results in either the receipt of cash (or check) by the Company or the receipt of irrevocable instructions to pay the aggregate exercise price to the Company from the sales proceeds;

(iii) by delivery to the Company (either by actual delivery or attestation) of shares of Common Stock;

(iv) if an Option is a Nonstatutory Stock Option, by a "net exercise" arrangement pursuant to which the Company will reduce the number of shares of Common Stock issuable upon exercise by the largest whole number of shares with a Fair Market Value that does not exceed the aggregate exercise price; *provided*, *however*, that the Company will accept a cash or other payment from the Participant to the extent of any remaining balance of the aggregate exercise price not satisfied by such reduction in the number of whole shares to be issued. Shares of Common Stock will no longer be subject to an Option and will not be exercisable thereafter to the extent that (A) shares issuable upon exercise are reduced to pay the exercise price pursuant to the "net exercise," (B) shares are delivered to the Participant as a result of such exercise, and (C) shares are withheld to satisfy tax withholding obligations; or

(v) in any other form of legal consideration that may be acceptable to the Board and specified in the applicable Award Agreement.

(d) Exercise and Payment of a SAR. To exercise any outstanding SAR, the Participant must provide written notice of exercise to the Company in compliance with the provisions of the Stock Appreciation Right Agreement evidencing such SAR. The appreciation distribution payable on the exercise of a SAR will be not greater than an amount equal to the excess of (A) the aggregate Fair Market Value (on the date of the exercise of the SAR) of a number of shares of Common Stock equal to the number of Common Stock equivalents in which the Participant is vested under such SAR, and with respect to which the Participant is exercising the SAR on such date, over (B) the aggregate strike price of the number of Common Stock equivalents with respect to which the Participant is exercising the SAR on such date. The appreciation distribution may be paid in Common Stock, in cash, in any combination of the two or in any other form of consideration, as determined by the Board and contained in the Award Agreement evidencing such SAR.

(e) Transferability of Options and SARs. The Board may, in its sole discretion, impose such limitations on the transferability of Options and SARs as the Board will determine. In the absence of such a determination by the Board to the contrary, the following restrictions on the transferability of Options and SARs will apply:

(i) Restrictions on Transfer. An Option or SAR will not be transferable except by will or by the laws of descent and distribution (or pursuant to subsections (ii) and (iii) below), and will be exercisable during the lifetime of the Participant only by the Participant. The Board may permit transfer of the Option or SAR in a manner that is not prohibited by applicable tax and securities laws. Except as explicitly provided in the Plan, neither an Option nor a SAR may be transferred for consideration.

(ii) Domestic Relations Orders. Subject to the approval of the Board or a duly authorized Officer, an Option or SAR may be transferred pursuant to the terms of a domestic relations order or official marital settlement agreement or other divorce or separation instrument as permitted by Treasury Regulations Section 1.421-1(b)(2). If an Option is an Incentive Stock Option, such Option may be deemed to be a Nonstatutory Stock Option as a result of such transfer.

(iii) Beneficiary Designation. Subject to the approval of the Board or a duly authorized Officer, a Participant may, by delivering written notice to the Company, in a form approved by the Company (or the designated broker), designate a third party who, on the death of the Participant, will thereafter be entitled to exercise the Option or SAR and receive the Common Stock or other consideration resulting from such exercise. In the absence of such a designation, the executor or administrator of the Participant's estate will be entitled to exercise the Option or SAR and receive the Common Stock or other consideration resulting from such exercise. However, the Company may prohibit designation of a beneficiary at any time, including due to any conclusion by the Company that such designation would be inconsistent with the provisions of applicable laws.

(f) Vesting Generally. The total number of shares of Common Stock subject to an Option or SAR may vest and therefore become exercisable in periodic installments that may or may not be equal. The Option or SAR may be subject to such other terms and conditions on the time or times when it may or may not be exercised (which may be based on the satisfaction of Performance Goals or other criteria) as the Board may deem appropriate. The vesting provisions of individual Options or SARs may vary. The provisions of this Section 5(f) are subject to any Option or SAR provisions governing the minimum number of shares of Common Stock as to which an Option or SAR may be exercised.

(g) Termination of Continuous Service. Except as otherwise provided in the applicable Award Agreement or other agreement between the Participant and the Company, if a Participant's Continuous Service terminates (other than for Cause and other than upon the Participant's death or Disability), the Participant may exercise his or her Option or SAR (to the extent that the Participant was entitled to exercise such Award as of the date of termination of Continuous Service) within the period of time ending on the earlier of (i) the date which occurs three months following the termination of the Participant's Continuous Service (or such longer or shorter period specified in the applicable Award Agreement) and (ii) the expiration of the term

of the Option or SAR as set forth in the Award Agreement. If, after termination of Continuous Service, the Participant does not exercise his or her Option or SAR within the applicable time frame, the Option or SAR will terminate.

(h) Extension of Termination Date. Except as otherwise provided in the applicable Award Agreement, if the exercise of an Option or SAR following the termination of the Participant's Continuous Service (other than for Cause and other than upon the Participant's death or Disability) would be prohibited at any time solely because the issuance of shares of Common Stock would violate the registration requirements under the Securities Act, then the Option or SAR will terminate on the earlier of (i) the expiration of a total period of three months (that need not be consecutive) equal to the applicable post-termination exercise period after the termination of the Participant's Continuous Service during which the exercise of the Option or SAR would not be in violation of such registration requirements, and (ii) the expiration of the term of the Option or SAR as set forth in the applicable Award Agreement. In addition, unless otherwise provided in a Participant's Award Agreement, if the sale of any Common Stock received upon exercise of an Option or SAR following the termination of the Participant's Continuous Service (other than for Cause) would violate the Company's insider trading policy, then the Option or SAR will terminate on the earlier of (i) the expiration of a period of days or months (that need not be consecutive) equal to the applicable post-termination exercise period after the termination of the Participant's Continuous Service during which the sale of the Common Stock received upon exercise of the Option or SAR would not be in violation of the Company's insider trading policy, or (ii) the expiration of the term of the Option or SAR as set forth in the applicable Award Agreement.

(i) Disability of Participant. Except as otherwise provided in the applicable Award Agreement or other agreement between the Participant and the Company, if a Participant's Continuous Service terminates as a result of the Participant's Disability, the Participant may exercise his or her Option or SAR (to the extent that the Participant was entitled to exercise such Option or SAR as of the date of termination of Continuous Service), but only within such period of time ending on the earlier of (i) the date which occurs 12 months following such termination of Continuous Service (or such longer or shorter period specified in the Award Agreement), and (ii) the expiration of the term of the Option or SAR as set forth in the Award Agreement. If, after termination of Continuous Service, the Participant does not exercise his or her Option or SAR within the applicable time frame, the Option or SAR (as applicable) will terminate.

(j) Death of Participant. Except as otherwise provided in the applicable Award Agreement or other agreement between the Participant and the Company, if (i) a Participant's Continuous Service terminates as a result of the Participant's death, or (ii) the Participant dies within the period (if any) specified in the Award Agreement for exercisability after the termination of the Participant's Continuous Service for a reason other than death, then the Option or SAR may be exercised (to the extent the Participant was entitled to exercise such Option or SAR as of the date of death) by the Participant's estate, by a person who acquired the right to exercise the Option or SAR by bequest or inheritance or by a person designated to exercise the Option or SAR upon the Participant's death, but only within the period ending on the earlier of (i) the date which occurs 18 months following the date of death (or such longer or shorter period specified in the Award Agreement), and (ii) the expiration of the term of such Option or SAR as

set forth in the Award Agreement. If, after the Participant's death, the Option or SAR is not exercised within the applicable time frame, the Option or SAR will terminate.

(k) Termination for Cause. Except as explicitly provided otherwise in a Participant's Award Agreement or other individual written agreement between the Company or any Affiliate and the Participant, if a Participant's Continuous Service is terminated for Cause, the Option or SAR will terminate immediately upon the date on which the event giving rise to the termination for Cause first occurred, and the Participant will be prohibited from exercising his or her Option or SAR from and after the date on which the event giving rise to the termination for Cause first occurred (or, if required by law, the date of termination of Continuous Service). If a Participant's Continuous Service is suspended pending an investigation of the existence of Cause, all of the Participant's rights under the Option or SAR will also be suspended during the investigation period.

(l) Non-Exempt Employees. If an Option or SAR is granted to an Employee who is a non-exempt employee for purposes of the Fair Labor Standards Act of 1938, as amended, the Option or SAR will not be first exercisable for any shares of Common Stock until at least six (6) months following the date of grant of the Option or SAR (although the Award may vest prior to such date). Consistent with the provisions of the Worker Economic Opportunity Act, (i) if such non-exempt Employee dies or suffers a Disability, (ii) upon a Corporate Transaction in which such Option or SAR is not assumed, continued, or substituted, (iii) upon a Change in Control, or (iv) upon the Participant's retirement (as such term may be defined in the Participant's Award Agreement in another agreement between the Participant and the Company, or, if no such definition, in accordance with the Company's then current employment policies and guidelines), the vested portion of any Options and SARs may be exercised earlier than six (6) months following the date of grant. The foregoing provision is intended to operate so that any income derived by a non-exempt employee in connection with the exercise or vesting of an Option or SAR will be exempt from his or her regular rate of pay. To the extent permitted and/or required for compliance with the Worker Economic Opportunity Act to ensure that any income derived by a non-exempt employee in connection with the exercise, vesting or issuance of any shares under any other Stock Award will be exempt from the employee's regular rate of pay, the provisions of this Section 5(l) will apply to all Stock Awards and are hereby incorporated by reference into such Stock Award Agreements.

6. PROVISIONS OF STOCK AWARDS OTHER THAN OPTIONS AND SARS.

(a) Restricted Stock Awards. Each Restricted Stock Award Agreement will be in such form and will contain such terms and conditions as the Board will deem appropriate. To the extent consistent with the Company's bylaws, at the Board's election, shares of Common Stock may be (x) held in book entry form subject to the Company's instructions until any restrictions relating to the Restricted Stock Award lapse; or (y) evidenced by a certificate, which certificate will be held in such form and manner as determined by the Board. The terms and conditions of Restricted Stock Award Agreements may change from time to time, and the terms and conditions of separate Restricted Stock Award Agreements need not be identical. Each Restricted Stock Award Agreement will conform to (through incorporation of the provisions hereof by reference in the agreement or otherwise) the substance of each of the following provisions:

(i) Consideration. A Restricted Stock Award may be awarded in consideration for (A) cash, check, bank draft or money order payable to the Company, (B) past services to the Company or an Affiliate, or (C) any other form of legal consideration (including future services) that may be acceptable to the Board, in its sole discretion, and permissible under applicable law.

(ii) Vesting. Shares of Common Stock awarded under the Restricted Stock Award Agreement may be subject to forfeiture to the Company in accordance with a vesting schedule to be determined by the Board.

(iii) Termination of Participant's Continuous Service. If a Participant's Continuous Service terminates, the Company may receive through a forfeiture condition or a repurchase right any or all of the shares of Common Stock held by the Participant that have not vested as of the date of termination of Continuous Service under the terms of the Restricted Stock Award Agreement.

(iv) Transferability. Rights to acquire shares of Common Stock under the Restricted Stock Award Agreement will be transferable by the Participant only upon such terms and conditions as are set forth in the Restricted Stock Award Agreement, as the Board will determine in its sole discretion, so long as Common Stock awarded under the Restricted Stock Award Agreement remains subject to the terms of the Restricted Stock Award Agreement.

(v) Dividends. A Restricted Stock Award Agreement may provide that any dividends paid on Restricted Stock will be subject to the same vesting and forfeiture restrictions as apply to the shares subject to the Restricted Stock Award to which they relate.

(b) Restricted Stock Unit Awards. Each Restricted Stock Unit Award Agreement will be in such form and will contain such terms and conditions as the Board will deem appropriate. The terms and conditions of Restricted Stock Unit Award Agreements may change from time to time, and the terms and conditions of separate Restricted Stock Unit Award Agreements need not be identical. Each Restricted Stock Unit Award Agreement will conform to (through incorporation of the provisions hereof by reference in the Agreement or otherwise) the substance of each of the following provisions:

(i) Consideration. At the time of grant of a Restricted Stock Unit Award, the Board will determine the consideration, if any, to be paid by the Participant upon delivery of each share of Common Stock subject to the Restricted Stock Unit Award. The consideration to be paid (if any) by the Participant for each share of Common Stock subject to a Restricted Stock Unit Award may be paid in any form of legal consideration that may be acceptable to the Board, in its sole discretion, and permissible under applicable law.

(ii) Vesting. At the time of the grant of a Restricted Stock Unit Award, the Board may impose such restrictions on or conditions to the vesting of the Restricted Stock Unit Award as it, in its sole discretion, deems appropriate.

(iii) Payment. A Restricted Stock Unit Award may be settled by the delivery of shares of Common Stock, their cash equivalent, any combination thereof or in any other form

of consideration, as determined by the Board and contained in the Restricted Stock Unit Award Agreement.

(iv) Additional Restrictions. At the time of the grant of a Restricted Stock Unit Award, the Board, as it deems appropriate, may impose such restrictions or conditions that delay the delivery of the shares of Common Stock (or their cash equivalent) subject to a Restricted Stock Unit Award to a time after the vesting of such Restricted Stock Unit Award.

(v) Dividend Equivalents. Dividend equivalents may be credited in respect of shares of Common Stock covered by a Restricted Stock Unit Award, as determined by the Board and contained in the Restricted Stock Unit Award Agreement. At the sole discretion of the Board, such dividend equivalents may be converted into additional shares of Common Stock covered by the Restricted Stock Unit Award in such manner as determined by the Board. Any additional shares covered by the Restricted Stock Unit Award credited by reason of such dividend equivalents will be subject to all of the same terms and conditions of the underlying Restricted Stock Unit Award Agreement to which they relate.

(vi) Termination of Participant's Continuous Service. Except as otherwise provided in the applicable Restricted Stock Unit Award Agreement, such portion of the Restricted Stock Unit Award that has not vested will be forfeited upon the Participant's termination of Continuous Service.

(c) Performance Awards.

(i) Performance Stock Awards. A Performance Stock Award is a Stock Award (covering a number of shares not in excess of that set forth in Section 3(d) above) that is payable or that may be granted, may vest or may be exercised, contingent upon the attainment during a Performance Period of certain Performance Goals. A Performance Stock Award may, but need not, require the completion of a specified period of Continuous Service. The length of any Performance Period, the Performance Goals to be achieved during the Performance Period, and the measure of whether and to what degree such Performance Goals have been attained will be conclusively determined by the Committee (or, if not required for compliance with Section 162(m) of the Code, the Board), in its sole discretion. In addition, to the extent permitted by applicable law and the applicable Award Agreement, the Board may determine that cash may be used in payment of Performance Stock Awards.

(ii) Performance Cash Awards. A Performance Cash Award is a cash award (for a dollar value not in excess of that set forth in Section 3(d) above) that is payable contingent upon the attainment during a Performance Period of certain Performance Goals. A Performance Cash Award may also require the completion of a specified period of Continuous Service. At the time of grant of a Performance Cash Award, the length of any Performance Period, the Performance Goals to be achieved during the Performance Period, and the measure of whether and to what degree such Performance Goals have been attained will be conclusively determined by the Committee (or, if not required for compliance with Section 162(m) of the Code, the Board), in its sole discretion. The Board may specify the form of payment of Performance Cash Awards, which may be cash or other property, or may provide for a Participant to have the

option for his or her Performance Cash Award, or such portion thereof as the Board may specify, to be paid in whole or in part in cash or other property.

(iii) Section 162(m) Compliance. Unless otherwise permitted in compliance with the requirements of Section 162(m) of the Code with respect to an Award intended to qualify as "performance-based compensation" thereunder, the Committee will establish the Performance Goals applicable to, and the formula for calculating the amount payable under, the Award no later than the earlier of (a) the date 90 days after the commencement of the applicable Performance Period, and (b) the date on which 25% of the Performance Period has elapsed, and in any event at a time when the achievement of the applicable Performance Goals remains substantially uncertain. Prior to the payment of any compensation under an Award intended to qualify as "performance-based compensation" under Section 162(m) of the Code, the Committee will certify the extent to which any Performance Goals and any other material terms under such Award have been satisfied (other than in cases where such relate solely to the increase in the value of the Common Stock). Notwithstanding satisfaction of any completion of any Performance Goals, the number of shares of Common Stock, Options, cash or other benefits granted, issued, retainable and/or vested under an Award on account of satisfaction of such Performance Goals may be reduced by the Committee on the basis of such further considerations as the Committee, in its sole discretion, will determine.

(d) Other Stock Awards. Other forms of Stock Awards valued in whole or in part by reference to, or otherwise based on, Common Stock, including the appreciation in value thereof, may be granted either alone or in addition to Stock Awards provided for under Section 5 and the preceding provisions of this Section 6. Subject to the provisions of the Plan, the Board will have sole and complete authority to determine the persons to whom and the time or times at which such Other Stock Awards will be granted, the number of shares of Common Stock (or the cash equivalent thereof) to be granted pursuant to such Other Stock Awards and all other terms and conditions of such Other Stock Awards.

7. COVENANTS OF THE COMPANY.

(a) Availability of Shares. The Company will keep available at all times the number of shares of Common Stock reasonably required to satisfy then-outstanding Awards.

(b) Securities Law Compliance. The Company will seek to obtain from each regulatory commission or agency having jurisdiction over the Plan such authority as may be required to grant Stock Awards and to issue and sell shares of Common Stock upon exercise of the Stock Awards; *provided*, *however*, that this undertaking will not require the Company to register under the Securities Act the Plan, any Stock Award or any Common Stock issued or issuable pursuant to any such Stock Award. If, after reasonable efforts and at a reasonable cost, the Company is unable to obtain from any such regulatory commission or agency the authority that counsel for the Company deems necessary for the lawful issuance and sale of Common Stock under the Plan, the Company will be relieved from any liability for failure to issue and sell Common Stock upon exercise of such Stock Awards unless and until such authority is obtained. A Participant will not be eligible for the grant of an Award or the subsequent issuance of cash or Common Stock pursuant to the Award if such grant or issuance would be in violation of any applicable securities law.

(c) No Obligation to Notify or Minimize Taxes. The Company will have no duty or obligation to any Participant to advise such holder as to the time or manner of exercising such Stock Award. Furthermore, the Company will have no duty or obligation to warn or otherwise advise such holder of a pending termination or expiration of an Award or a possible period in which the Award may not be exercised. The Company has no duty or obligation to minimize the tax consequences of an Award to the holder of such Award.

8. MISCELLANEOUS.

(a) Use of Proceeds from Sales of Common Stock. Proceeds from the sale of shares of Common Stock pursuant to Awards will constitute general funds of the Company.

(b) Corporate Action Constituting Grant of Awards. Corporate action constituting a grant by the Company of an Award to any Participant will be deemed completed as of the date of such corporate action, unless otherwise determined by the Board, regardless of when the instrument, certificate, or letter evidencing the Award is communicated to, or actually received or accepted by, the Participant. In the event that the corporate records (e.g., Board consents, resolutions or minutes) documenting the corporate action constituting the grant contain terms (e.g., exercise price, vesting schedule or number of shares) that are inconsistent with those in the Award Agreement or related grant documents as a result of a clerical error in the papering of the Award Agreement or related grant documents, the corporate records will control and the Participant will have no legally binding right to the incorrect term in the Award Agreement or related grant documents.

(c) Stockholder Rights. No Participant will be deemed to be the holder of, or to have any of the rights of a holder with respect to, any shares of Common Stock subject to an Award unless and until (i) such Participant has satisfied all requirements for exercise of, or the issuance of shares of Common Stock under, the Award pursuant to its terms, and (ii) the issuance of the Common Stock subject to such Award has been entered into the books and records of the Company.

(d) No Employment or Other Service Rights. Nothing in the Plan, any Award Agreement or any other instrument executed thereunder or in connection with any Award granted pursuant thereto will confer upon any Participant any right to continue to serve the Company or an Affiliate in the capacity in effect at the time the Award was granted or will affect the right of the Company or an Affiliate to terminate (i) the employment of an Employee with or without notice and with or without Cause, (ii) the service of a Consultant pursuant to the terms of such Consultant's agreement with the Company or an Affiliate, or (iii) the service of a Director pursuant to the bylaws of the Company or an Affiliate, and any applicable provisions of the corporate law of the state in which the Company or the Affiliate is incorporated, as the case may be.

(e) Change in Time Commitment. In the event a Participant's regular level of time commitment in the performance of his or her services for the Company and any Affiliates is reduced (for example, and without limitation, if the Participant is an Employee of the Company and the Employee has a change in status from a full-time Employee to a part-time Employee or takes an extended leave of absence) after the date of grant of any Award to the Participant, the

Board has the right in its sole discretion to (x) make a corresponding reduction in the number of shares or cash amount subject to any portion of such Award that is scheduled to vest or become payable after the date of such change in time commitment, and (y) in lieu of or in combination with such a reduction, extend the vesting or payment schedule applicable to such Award. In the event of any such reduction, the Participant will have no right with respect to any portion of the Award that is so reduced or extended.

(f) Incentive Stock Option Limitations. To the extent that the aggregate Fair Market Value (determined at the time of grant) of Common Stock with respect to which Incentive Stock Options are exercisable for the first time by any Optionholder during any calendar year (under all plans of the Company and any Affiliates) exceeds $100,000 (or such other limit established in the Code) or otherwise does not comply with the rules governing Incentive Stock Options, the Options or portions thereof that exceed such limit (according to the order in which they were granted) or otherwise do not comply with the rules will be treated as Nonstatutory Stock Options, notwithstanding any contrary provision of the applicable Option Agreement(s).

(g) Investment Assurances. The Company may require a Participant, as a condition of exercising or acquiring Common Stock under any Award, (i) to give written assurances satisfactory to the Company as to the Participant's knowledge and experience in financial and business matters and/or to employ a purchaser representative reasonably satisfactory to the Company who is knowledgeable and experienced in financial and business matters and that he or she is capable of evaluating, alone or together with the purchaser representative, the merits and risks of exercising the Award; and (ii) to give written assurances satisfactory to the Company stating that the Participant is acquiring Common Stock subject to the Award for the Participant's own account and not with any present intention of selling or otherwise distributing the Common Stock. The foregoing requirements, and any assurances given pursuant to such requirements, will be inoperative if (A) the issuance of the shares upon the exercise or acquisition of Common Stock under the Award has been registered under a then currently effective registration statement under the Securities Act, or (B) as to any particular requirement, a determination is made by counsel for the Company that such requirement need not be met in the circumstances under the then applicable securities laws. The Company may, upon advice of counsel to the Company, place legends on stock certificates issued under the Plan as such counsel deems necessary or appropriate in order to comply with applicable securities laws, including, but not limited to, legends restricting the transfer of the Common Stock.

(h) Withholding Obligations. Unless prohibited by the terms of an Award Agreement, the Company may, in its sole discretion, satisfy any federal, state or local tax withholding obligation relating to an Award by any of the following means or by a combination of such means: (i) causing the Participant to tender a cash payment; (ii) withholding shares of Common Stock from the shares of Common Stock issued or otherwise issuable to the Participant in connection with the Award; *provided*, *however*, that no shares of Common Stock are withheld with a value exceeding the minimum amount of tax required to be withheld by law (or such lesser amount as may be necessary to avoid classification of the Stock Award as a liability for financial accounting purposes); (iii) withholding cash from an Award settled in cash; (iv) withholding payment from any amounts otherwise payable to the Participant, including proceeds

from the sale of shares of Common Stock issued pursuant to a Stock Award; or (v) by such other method as may be set forth in the Award Agreement.

(i) Electronic Delivery. Any reference herein to a "written" agreement or document will include any agreement or document delivered electronically, filed publicly at www.sec.gov (or any successor website thereto) or posted on the Company's intranet (or other shared electronic medium controlled by the Company to which the Participant has access).

(j) Deferrals. To the extent permitted by applicable law, the Board, in its sole discretion, may determine that the delivery of Common Stock or the payment of cash, upon the exercise, vesting or settlement of all or a portion of any Award may be deferred and may establish programs and procedures for deferral elections to be made by Participants. Deferrals by Participants will be made in accordance with Section 409A of the Code (to the extent applicable to a Participant). Consistent with Section 409A of the Code, the Board may provide for distributions while a Participant is still an employee or otherwise providing services to the Company. The Board is authorized to make deferrals of Awards and determine when, and in what annual percentages, Participants may receive payments, including lump sum payments, following the Participant's termination of Continuous Service, and implement such other terms and conditions consistent with the provisions of the Plan and in accordance with applicable law.

(k) Compliance with Section 409A. Unless otherwise expressly provided for in an Award Agreement, the Plan and Award Agreements will be interpreted to the greatest extent possible in a manner that makes the Plan and the Awards granted hereunder exempt from Section 409A of the Code, and, to the extent not so exempt, in compliance with Section 409A of the Code. If the Board determines that any Award granted hereunder is not exempt from and is therefore subject to Section 409A of the Code, the Award Agreement evidencing such Award will incorporate the terms and conditions necessary to avoid the consequences specified in Section 409A(a)(1) of the Code, and to the extent an Award Agreement is silent on terms necessary for compliance, such terms are hereby incorporated by reference into the Award Agreement. Notwithstanding anything to the contrary in this Plan (and unless the Award Agreement specifically provides otherwise), if the shares of Common Stock are publicly traded, and if a Participant holding an Award that constitutes "deferred compensation" under Section 409A of the Code is a "specified employee" for purposes of Section 409A of the Code, no distribution or payment of any amount that is due because of a "separation from service" (as defined in Section 409A of the Code without regard to alternative definitions thereunder) will be issued or paid before the date that is six (6) months following the date of such Participant's "separation from service" or, if earlier, the date of the Participant's death, unless such distribution or payment can be made in a manner that complies with Section 409A of the Code, and any amounts so deferred will be paid in a lump sum on the day after such six (6) month period elapses, with the balance paid thereafter on the original schedule.

(l) Clawback/Recovery. All Awards granted under the Plan will be subject to recoupment in accordance with any clawback policy that the Company is required to adopt pursuant to the listing standards of any national securities exchange or association on which the Company's securities are listed or as is otherwise required by the Dodd-Frank Wall Street Reform and Consumer Protection Act or other applicable law. In addition, the Board may impose such other clawback, recovery or recoupment provisions in an Award Agreement as the Board

determines necessary or appropriate, including but not limited to a reacquisition right in respect of previously acquired shares of Common Stock or other cash or property upon the occurrence of an event constituting Cause. No recovery of compensation under such a clawback policy will be an event giving rise to a right to resign for "good reason" or "constructive termination" (or similar term) under any agreement with the Company or an Affiliate.

9. ADJUSTMENTS UPON CHANGES IN COMMON STOCK; OTHER CORPORATE EVENTS.

(a) Capitalization Adjustments. In the event of a Capitalization Adjustment, the Board will appropriately and proportionately adjust: (i) the class(es) and maximum number of securities subject to the Plan pursuant to Section 3(a), (ii) the class(es) and maximum number of securities that may be issued pursuant to the exercise of Incentive Stock Options pursuant to Section 3(c), (iii) the class(es) and maximum number of securities that may be awarded to any person pursuant to Sections 3(d), and (iv) the class(es) and number of securities and price per share of stock subject to outstanding Stock Awards. The Board will make such adjustments, and its determination will be final, binding and conclusive.

(b) Dissolution or Liquidation. Except as otherwise provided in the Stock Award Agreement, in the event of a dissolution or liquidation of the Company, all outstanding Stock Awards (other than Stock Awards consisting of vested and outstanding shares of Common Stock not subject to a forfeiture condition or the Company's right of repurchase) will terminate immediately prior to the completion of such dissolution or liquidation, and the shares of Common Stock subject to the Company's repurchase rights or subject to a forfeiture condition may be repurchased or reacquired by the Company notwithstanding the fact that the holder of such Stock Award is providing Continuous Service; *provided*, *however*, that the Board may, in its sole discretion, cause some or all Stock Awards to become fully vested, exercisable and/or no longer subject to repurchase or forfeiture (to the extent such Stock Awards have not previously expired or terminated) before the dissolution or liquidation is completed but contingent on its completion.

(c) Corporate Transaction. The following provisions will apply to Stock Awards in the event of a Corporate Transaction unless otherwise provided in the instrument evidencing the Stock Award or any other written agreement between the Company or any Affiliate and the Participant or unless otherwise expressly provided by the Board at the time of grant of a Stock Award. In the event of a Corporate Transaction, then, notwithstanding any other provision of the Plan, the Board will take one or more of the following actions with respect to Stock Awards, contingent upon the closing or completion of the Corporate Transaction:

(i) arrange for the surviving corporation or acquiring corporation (or the surviving or acquiring corporation's parent company) to assume or continue the Stock Award or to substitute a similar stock award for the Stock Award (including, but not limited to, an award to acquire the same consideration paid to the stockholders of the Company pursuant to the Corporate Transaction);

(ii) arrange for the assignment of any reacquisition or repurchase rights held by the Company in respect of Common Stock issued pursuant to the Stock Award to the

surviving corporation or acquiring corporation (or the surviving or acquiring corporation's parent company);

(iii) accelerate the vesting, in whole or in part, of the Stock Award (and, if applicable, the time at which the Stock Award may be exercised) to a date prior to the effective time of such Corporate Transaction as the Board determines (or, if the Board does not determine such a date, to the date that is five (5) days prior to the effective date of the Corporate Transaction), with such Stock Award terminating if not exercised (if applicable) at or prior to the effective time of the Corporate Transaction;

(iv) arrange for the lapse, in whole or in part, of any reacquisition or repurchase rights held by the Company with respect to the Stock Award;

(v) cancel or arrange for the cancellation of the Stock Award, to the extent not vested or not exercised prior to the effective time of the Corporate Transaction, in exchange for such cash consideration, if any, as the Board, in its sole discretion, may consider appropriate; and

(vi) cancel or arrange for the cancellation of the Stock Award, to the extent not vested or not exercised prior to the effective time of the Corporate Transaction, in exchange for a payment, in such form as may be determined by the Board, equal to the excess, if any, of (A) the value of the property the Participant would have received upon the exercise of the Stock Award immediately prior to the effective time of the Corporate Transaction, over (B) any exercise price payable by such holder in connection with such exercise.

(vii) The Board need not take the same action or actions with respect to all Stock Awards or portions thereof or with respect to all Participants. The Board may take different actions with respect to the vested and unvested portions of a Stock Award.

(d) Change in Control. A Stock Award may be subject to additional acceleration of vesting and exercisability upon or after a Change in Control as may be provided in the Stock Award Agreement for such Stock Award or as may be provided in any other written agreement between the Company or any Affiliate and the Participant, but in the absence of such provision, no such acceleration will occur.

10. TERMINATION OR SUSPENSION OF THE PLAN.

(a) The Board may suspend or terminate the Plan at any time. No Incentive Stock Options may be granted after the tenth anniversary of the earlier of (i) the date the Plan is adopted by the Board (the "***Adoption Date***"), and (ii) the date the Plan is approved by the stockholders of the Company. No Awards may be granted under the Plan while the Plan is suspended or after it is terminated.

11. EXISTENCE OF THE PLAN; TIMING OF FIRST GRANT OR EXERCISE.

The Plan will come into existence on the Adoption Date; *provided*, *however*, that no Award may be granted prior to the IPO Date (that is, the Effective Date). In addition, no Stock Award will be exercised (or, in the case of a Restricted Stock Award, Restricted Stock Unit Award, Performance Stock Award, or Other Stock Award, will be granted) and no Performance

Cash Award will be settled unless and until the Plan has been approved by the stockholders of the Company, which approval will be within 12 months after the Adoption Date.

12. CHOICE OF LAW.

The law of the State of Delaware will govern all questions concerning the construction, validity and interpretation of this Plan, without regard to that state's conflict of laws rules.

13. DEFINITIONS. As used in the Plan, the following definitions will apply to the capitalized terms indicated below:

(a) "***Affiliate***" means, at the time of determination, any "parent" or "subsidiary" of the Company as such terms are defined in Rule 405 of the Securities Act. The Board will have the authority to determine the time or times at which "parent" or "subsidiary" status is determined within the foregoing definition.

(b) "***Award***" means a Stock Award or a Performance Cash Award.

(c) "***Award Agreement***" means a written agreement between the Company and a Participant evidencing the terms and conditions of an Award.

(d) "***Board***" means the Board of Directors of the Company.

(e) "***Capitalization Adjustment***" means any change that is made in, or other events that occur with respect to, the Common Stock subject to the Plan or subject to any Stock Award after the Adoption Date without the receipt of consideration by the Company through merger, consolidation, reorganization, recapitalization, reincorporation, stock dividend, dividend in property other than cash, large non-recurring cash dividend, stock split, reverse stock split, liquidating dividend, combination of shares, exchange of shares, change in corporate structure or any similar equity restructuring transaction, as that term is used in Financial Accounting Standards Board Accounting Standards Codification Topic 718 (or any successor thereto). Notwithstanding the foregoing, the conversion of any convertible securities of the Company will not be treated as a Capitalization Adjustment.

(f) ***"Capital Stock"*** means each and every class of common stock of the Company, regardless of the number of votes per share.

(g) "***Cause***" will have the meaning ascribed to such term in any written agreement between the Participant and the Company defining such term and, in the absence of such agreement, such term means, with respect to a Participant, the occurrence of any one or more of the following events: (i) the Participant's commission of any felony or any crime involving fraud, dishonesty or moral turpitude; (ii) the Participant's attempted commission of or participation in a fraud or act of dishonesty against the Company that results in (or might have reasonably resulted in) material harm to the business of the Company; (iii) the Participant's intentional, material violation of any contract or agreement between the Participant and the Company or any statutory duty that the Participant owes to the Company; or (iv) the Participant's unauthorized use or disclosure of the Company's confidential information or trade secrets; or (v) the Participant's conduct that constitutes gross insubordination, incompetence or

habitual neglect of duties and that results in (or might have reasonably resulted in) material harm to the business of the Company. The determination that a termination of the Participant's Continuous Service is either for Cause or without Cause will be made by the Company, in its sole discretion. Any determination by the Company that the Continuous Service of a Participant was terminated with or without Cause for the purposes of outstanding Awards held by such Participant will have no effect upon any determination of the rights or obligations of the Company or the Participant for any other purpose.

(h) "***Change in Control***" means the occurrence, in a single transaction or in a series of related transactions, of any one or more of the following events:

(i) any Exchange Act Person becomes the Owner, directly or indirectly, of securities of the Company representing more than 50% of the combined voting power of the Company's then outstanding securities other than by virtue of a merger, consolidation or similar transaction. Notwithstanding the foregoing, a Change in Control will not be deemed to occur (A) on account of the acquisition of securities of the Company directly from the Company; (B) on account of the acquisition of securities of the Company by an investor, any affiliate thereof or any other Exchange Act Person that acquires the Company's securities in a transaction or series of related transactions the primary purpose of which is to obtain financing for the Company through the issuance of equity securities; or (C) solely because the level of Ownership held by any Exchange Act Person (the "***Subject Person***") exceeds the designated percentage threshold of the outstanding voting securities as a result of a repurchase or other acquisition of voting securities by the Company reducing the number of shares outstanding, provided that if a Change in Control would occur (but for the operation of this sentence) as a result of the acquisition of voting securities by the Company, and after such share acquisition, the Subject Person becomes the Owner of any additional voting securities that, assuming the repurchase or other acquisition had not occurred, increases the percentage of the then outstanding voting securities Owned by the Subject Person over the designated percentage threshold, then a Change in Control will be deemed to occur;

(ii) there is consummated a merger, consolidation or similar transaction involving (directly or indirectly) the Company and, immediately after the consummation of such merger, consolidation or similar transaction, the stockholders of the Company immediately prior thereto do not Own, directly or indirectly, either (A) outstanding voting securities representing more than 50% of the combined outstanding voting power of the surviving Entity in such merger, consolidation or similar transaction or (B) more than 50% of the combined outstanding voting power of the parent of the surviving Entity in such merger, consolidation or similar transaction, in each case in substantially the same proportions as their Ownership of the outstanding voting securities of the Company immediately prior to such transaction;

(iii) there is consummated a sale, lease, exclusive license or other disposition of all or substantially all of the consolidated assets of the Company and its Subsidiaries, other than a sale, lease, license or other disposition of all or substantially all of the consolidated assets of the Company and its Subsidiaries to an Entity, more than fifty percent (50%) of the combined voting power of the voting securities of which are Owned by stockholders of the Company in substantially the same proportions as their Ownership of the outstanding voting securities of the Company immediately prior to such sale, lease, license or other disposition; or

(iv) individuals who, on the date the Plan is adopted by the Board, are members of the Board (the "***Incumbent Board***") cease for any reason to constitute at least a majority of the members of the Board; *provided*, *however*, that if the appointment or election (or nomination for election) of any new Board member was approved or recommended by a majority vote of the members of the Incumbent Board then still in office, such new member will, for purposes of this Plan, be considered as a member of the Incumbent Board.

For purposes of determining voting power under the term Change in Control, voting power shall be calculated by assuming the conversion of all equity securities convertible (immediately or at some future time) into shares entitled to vote, but not assuming the exercise of any warrant or right to subscribe to or purchase those shares. In addition, (A) the term Change in Control will not include a sale of assets, merger or other transaction effected exclusively for the purpose of changing the domicile of the Company, (B) the term Change in Control will not include a change in the voting power of any one or more stockholders as a result of the conversion of any class of the Company's securities into another class of the Company's securities having a different number of votes per share pursuant to the conversion provisions set forth in the Company's Amended and Restated Certificate of Incorporation, and (C) the definition of Change in Control (or any analogous term) in an individual written agreement between the Company or any Affiliate and the Participant will supersede the foregoing definition with respect to Awards subject to such agreement; *provided*, *however*, that if no definition of Change in Control or any analogous term is set forth in such an individual written agreement, the foregoing definition will apply. If required for compliance with Section 409A of the Code, in no event will a Change in Control be deemed to have occurred if such transaction is not also a "change in the ownership or effective control of" the Company or "a change in the ownership of a substantial portion of the assets of" the Company as determined under Treasury Regulation Section 1.409A-3(i)(5) (without regard to any alternative definition thereunder). The Board may, in its sole discretion and without a Participant's consent, amend the definition of "Change in Control" to conform to the definition of "Change in Control" under Section 409A of the Code, and the regulations thereunder.

(i) "***Code***" means the Internal Revenue Code of 1986, as amended, including any applicable regulations and guidance thereunder.

(j) "***Committee***" means a committee of one or more Directors to whom authority has been delegated by the Board in accordance with Section 2(c).

(k) "***Common Stock***" means, as of the IPO Date, the common stock of the Company, having one vote per share.

(l) "***Company***" means FibroGen, Inc., a Delaware corporation.

(m) "***Consultant***" means any person, including an advisor, who is (i) engaged by the Company or an Affiliate to render consulting or advisory services and is compensated for such services, or (ii) serving as a member of the board of directors of an Affiliate and is compensated for such services. However, service solely as a Director, or payment of a fee for such service, will not cause a Director to be considered a "Consultant" for purposes of the Plan. Notwithstanding the foregoing, a person is treated as a Consultant under this Plan only if a Form

S-8 Registration Statement under the Securities Act is available to register either the offer or the sale of the Company's securities to such person.

(n) "***Continuous Service***" means that the Participant's service with the Company or an Affiliate, whether as an Employee, Director or Consultant, is not interrupted or terminated. A change in the capacity in which the Participant renders service to the Company or an Affiliate as an Employee, Consultant or Director or a change in the entity for which the Participant renders such service, provided that there is no interruption or termination of the Participant's service with the Company or an Affiliate, will not terminate a Participant's Continuous Service; *provided*, *however*, that if the Entity for which a Participant is rendering services ceases to qualify as an Affiliate, as determined by the Board, in its sole discretion, such Participant's Continuous Service will be considered to have terminated on the date such Entity ceases to qualify as an Affiliate. To the extent permitted by law, the Board or the chief executive officer of the Company, in that party's sole discretion, may determine whether Continuous Service will be considered interrupted in the case of (i) any leave of absence approved by the Board or chief executive officer, including sick leave, military leave or any other personal leave, or (ii) transfers between the Company, an Affiliate, or their successors. Notwithstanding the foregoing, a leave of absence will be treated as Continuous Service for purposes of vesting in an Award only to such extent as may be provided in the Company's leave of absence policy, in the written terms of any leave of absence agreement or policy applicable to the Participant, or as otherwise required by law. In addition, to the extent required for exemption from or compliance with Section 409A of the Code, the determination of whether there has been a termination of Continuous Service will be made, and such term will be construed, in a manner that is consistent with the definition of "separation from service" as defined under Treasury Regulation Section 1.409A-1(h) (without regard to any alternative definition thereunder).

(o) "***Corporate Transaction***" means the occurrence, in a single transaction or in a series of related transactions, of any one or more of the following events:

(i) the consummation of a sale or other disposition of all or substantially all, as determined by the Board, in its sole discretion, of the consolidated assets of the Company and its Subsidiaries;

(ii) the consummation of a sale or other disposition of at least 90% of the outstanding securities of the Company;

(iii) the consummation of a merger, consolidation or similar transaction following which the Company is not the surviving corporation; or

(iv) the consummation of a merger, consolidation or similar transaction following which the Company is the surviving corporation but the shares of Common Stock outstanding immediately preceding the merger, consolidation or similar transaction are converted or exchanged by virtue of the merger, consolidation or similar transaction into other property, whether in the form of securities, cash or otherwise.

To the extent required for compliance with Section 409A of the Code, in no event will an event be deemed a Corporate Transaction if such transaction is not also a "change in the

ownership or effective control of" the Company or "a change in the ownership of a substantial portion of the assets of" the Company as determined under Treasury Regulation Section 1.409A-3(i)(5) (without regard to any alternative definition thereunder).

(p) "***Covered Employee***" will have the meaning provided in Section 162(m)(3) of the Code.

(q) "***Director***" means a member of the Board.

(r) "***Disability***" means, with respect to a Participant, the inability of such Participant to engage in any substantial gainful activity by reason of any medically determinable physical or mental impairment that can be expected to result in death or that has lasted or can be expected to last for a continuous period of not less than 12 months, as provided in Sections 22(e)(3) and 409A(a)(2)(c)(i) of the Code, and will be determined by the Board on the basis of such medical evidence as the Board deems warranted under the circumstances.

(s) "***Effective Date***" means the IPO Date.

(t) "***Employee***" means any person employed by the Company or an Affiliate. However, service solely as a Director, or payment of a fee for such services, will not cause a Director to be considered an "Employee" for purposes of the Plan.

(u) "***Entity***" means a corporation, partnership, limited liability company or other entity.

(v) "***Exchange Act***" means the Securities Exchange Act of 1934, as amended, and the rules and regulations promulgated thereunder.

(w) "***Exchange Act Person***" means any natural person, Entity or "group" (within the meaning of Section 13(d) or 14(d) of the Exchange Act), except that "Exchange Act Person" will not include (i) the Company or any Subsidiary of the Company, (ii) any employee benefit plan of the Company or any Subsidiary of the Company or any trustee or other fiduciary holding securities under an employee benefit plan of the Company or any Subsidiary of the Company, (iii) an underwriter temporarily holding securities pursuant to a registered public offering of such securities, (iv) an Entity Owned, directly or indirectly, by the stockholders of the Company in substantially the same proportions as their Ownership of stock of the Company; or (v) any natural person, Entity or "group" (within the meaning of Section 13(d) or 14(d) of the Exchange Act) that, as of the Effective Date, is the Owner, directly or indirectly, of securities of the Company representing more than 50% of the combined voting power of the Company's then outstanding securities.

(x) "***Fair Market Value***" means, as of any date, the value of the Common Stock determined as follows:

(i) If the Common Stock is listed on any established stock exchange or traded on any established market, the Fair Market Value of a share of Common Stock will be, unless otherwise determined by the Board, the closing sales price for such stock as quoted on such

exchange or market (or the exchange or market with the greatest volume of trading in the Common Stock) on the date of determination, as reported in a source the Board deems reliable.

(ii) Unless otherwise provided by the Board, if there is no closing sales price for the Common Stock on the date of determination, then the Fair Market Value will be the closing selling price on the last preceding date for which such quotation exists.

(iii) In the absence of such markets for the Common Stock, the Fair Market Value will be determined by the Board in good faith and in a manner that complies with Sections 409A and 422 of the Code.

(y) "***Incentive Stock Option***" means an option granted pursuant to Section 5 of the Plan that is intended to be, and qualifies as, an "incentive stock option" within the meaning of Section 422 of the Code.

(z) "***IPO Date***" means the date of the underwriting agreement between the Company and the underwriter(s) managing the initial public offering of the Common Stock, pursuant to which the Common Stock is priced for the initial public offering.

(aa) "***Non-Employee Director***" means a Director who either (i) is not a current employee or officer of the Company or an Affiliate, does not receive compensation, either directly or indirectly, from the Company or an Affiliate for services rendered as a consultant or in any capacity other than as a Director (except for an amount as to which disclosure would not be required under Item 404(a) of Regulation S-K promulgated pursuant to the Securities Act ("***Regulation S-K***")), does not possess an interest in any other transaction for which disclosure would be required under Item 404(a) of Regulation S-K, and is not engaged in a business relationship for which disclosure would be required pursuant to Item 404(b) of Regulation S-K; or (ii) is otherwise considered a "non-employee director" for purposes of Rule 16b-3.

(bb) "***Nonstatutory Stock Option***" means any option granted pursuant to Section 5 of the Plan that does not qualify as an Incentive Stock Option.

(cc) "***Officer***" means a person who is an officer of the Company within the meaning of Section 16 of the Exchange Act.

(dd) "***Option***" means an Incentive Stock Option or a Nonstatutory Stock Option to purchase shares of Common Stock granted pursuant to the Plan.

(ee) "***Option Agreement***" means a written agreement between the Company and an Optionholder evidencing the terms and conditions of an Option grant. Each Option Agreement will be subject to the terms and conditions of the Plan.

(ff) "***Optionholder***" means a person to whom an Option is granted pursuant to the Plan or, if applicable, such other person who holds an outstanding Option.

(gg) "***Other Stock Award***" means an award based in whole or in part by reference to the Common Stock which is granted pursuant to the terms and conditions of Section 6(d).

(hh) "***Other Stock Award Agreement***" means a written agreement between the Company and a holder of an Other Stock Award evidencing the terms and conditions of an Other Stock Award grant. Each Other Stock Award Agreement will be subject to the terms and conditions of the Plan.

(ii) "***Outside Director***" means a Director who either (i) is not a current employee of the Company or an "affiliated corporation" (within the meaning of Treasury Regulations promulgated under Section 162(m) of the Code), is not a former employee of the Company or an "affiliated corporation" who receives compensation for prior services (other than benefits under a tax-qualified retirement plan) during the taxable year, has not been an officer of the Company or an "affiliated corporation," and does not receive remuneration from the Company or an "affiliated corporation," either directly or indirectly, in any capacity other than as a Director, or (ii) is otherwise considered an "outside director" for purposes of Section 162(m) of the Code.

(jj) "***Own,***" "***Owned,***" "***Owner,***" "***Ownership***" A person or Entity will be deemed to "Own," to have "Owned," to be the "Owner" of, or to have acquired "Ownership" of securities if such person or Entity, directly or indirectly, through any contract, arrangement, understanding, relationship or otherwise, has or shares voting power, which includes the power to vote or to direct the voting, with respect to such securities.

(kk) "***Parent***" means any corporation (other than the Company) in an unbroken chain of corporations ending with the Company, if each of the corporations other than the Company owns stock possessing 50% or more of the total combined voting power of all classes of stock in one of the other corporations in such chain. A corporation that attains the status of a Parent on a date after the adoption of the Plan shall be considered a Parent commencing as of such date.

(ll) "***Participant***" means a person to whom an Award is granted pursuant to the Plan or, if applicable, such other person who holds an outstanding Stock Award.

(mm) "***Performance Cash Award***" means an award of cash granted pursuant to the terms and conditions of Section 6(c)(ii).

(nn) "***Performance Criteria***" means the one or more criteria that the Committee (which to the extent that an Award is intended to comply with Section 162(m) of the Code shall consist solely of two or more Outside Directors in accordance with Section 162(m) of the Code) will select for purposes of establishing the Performance Goals for a Performance Period. The Performance Criteria that will be used to establish such Performance Goals may be based on any one of, or combination of, the following as determined by the Committee (which to the extent that an Award is intended to comply with Section 162(m) of the Code shall consist solely of two or more Outside Directors in accordance with Section 162(m) of the Code): (i) earnings (including earnings per share and net earnings); (ii) earnings before interest, taxes and depreciation; (iii) earnings before interest, taxes, depreciation and amortization; (iv) earnings before interest, taxes, depreciation, amortization and legal settlements; (v) earnings before interest, taxes, depreciation, amortization, legal settlements and other income (expense); (vi) earnings before interest, taxes, depreciation, amortization, legal settlements, other income (expense) and stock-based compensation; (vii) earnings before interest, taxes, depreciation, amortization, legal settlements, other income (expense), stock-based compensation and changes

in deferred revenue; (viii) total stockholder return; (ix) return on equity or average stockholder's equity; (x) return on assets, investment, or capital employed; (xi) stock price; (xii) margin (including gross margin); (xiii) income (before or after taxes); (xiv) operating income; (xv) operating income after taxes; (xvi) pre-tax profit; (xvii) operating cash flow; (xviii) sales or revenue targets; (xix) increases in revenue or product revenue; (xx) expenses and cost reduction goals; (xxi) improvement in or attainment of working capital levels; (xxii) economic value added (or an equivalent metric); (xxiii) market share; (xxiv) cash flow; (xxv) cash flow per share; (xxvi) share price performance; (xxvii) debt reduction; (xxviii) implementation or completion of projects or processes; (xxix) employee retention; (xxx) stockholders' equity; (xxxi) capital expenditures; (xxxii) debt levels; (xxxiii) operating profit or net operating profit; (xxxiv) workforce diversity; (xxxv) growth of net income or operating income; (xxxvi) billings; (xxxvii) bookings; (xxxviii) initiation or completion of phases of clinical trials and/or studies by specified dates; (xxxix) patient enrollment rates, (xxxx) budget management; (xxxxi) regulatory body approval with respect to products, studies and/or trials; (xxxxii) commercial launch of products; and (xxxxiii) to the extent that an Award is not intended to comply with Section 162(m) of the Code, other measures of performance selected by the Board.

(oo) "***Performance Goals***" means, for a Performance Period, the one or more goals established by the Board for the Performance Period based upon the Performance Criteria. Performance Goals may be based on a Company-wide basis, with respect to one or more business units, divisions, Affiliates, or business segments, and in either absolute terms or relative to the performance of one or more comparable companies or the performance of one or more relevant indices. Unless specified otherwise by the Board (i) in the Award Agreement at the time the Award is granted or (ii) in such other document setting forth the Performance Goals at the time the Performance Goals are established, the Board will appropriately make adjustments in the method of calculating the attainment of Performance Goals for a Performance Period as follows: (1) to exclude restructuring and/or other nonrecurring charges; (2) to exclude exchange rate effects; (3) to exclude the effects of changes to generally accepted accounting principles; (4) to exclude the effects of any statutory adjustments to corporate tax rates; (5) to exclude the effects of any "extraordinary items" as determined under generally accepted accounting principles; (6) to exclude the dilutive effects of acquisitions or joint ventures; (7) to assume that any business divested by the Company achieved performance objectives at targeted levels during the balance of a Performance Period following such divestiture; (8) to exclude the effect of any change in the outstanding shares of common stock of the Company by reason of any stock dividend or split, stock repurchase, reorganization, recapitalization, merger, consolidation, spin-off, combination or exchange of shares or other similar corporate change, or any distributions to common stockholders other than regular cash dividends; (9) to exclude the effects of stock based compensation and the award of bonuses under the Company's bonus plans; (10) to exclude costs incurred in connection with potential acquisitions or divestitures that are required to expensed under generally accepted accounting principles; (11) to exclude the goodwill and intangible asset impairment charges that are required to be recorded under generally accepted accounting principles; (12) to exclude the effect of any other unusual, non-recurring gain or loss or other extraordinary item; (13) to exclude the effects of the timing of acceptance for review and/or approval of submissions to the Food and Drug Administration or any other regulatory body and (14) to exclude the effects of entering into or achieving milestones involved in licensing joint ventures. In addition, the Board retains the discretion to reduce or eliminate the compensation or economic benefit due upon attainment of Performance Goals and to define the manner of

calculating the Performance Criteria it selects to use for such Performance Period. Partial achievement of the specified criteria may result in the payment or vesting corresponding to the degree of achievement as specified in the Stock Award Agreement or the written terms of a Performance Cash Award.

(pp) "***Performance Period***" means the period of time selected by the Board over which the attainment of one or more Performance Goals will be measured for the purpose of determining a Participant's right to and the payment of a Stock Award or a Performance Cash Award. Performance Periods may be of varying and overlapping duration, at the sole discretion of the Board.

(qq) "***Performance Stock Award***" means a Stock Award granted under the terms and conditions of Section 6(c)(i).

(rr) "***Plan***" means this FibroGen, Inc. 2014 Equity Incentive Plan.

(ss) "***Restricted Stock Award***" means an award of shares of Common Stock which is granted pursuant to the terms and conditions of Section 6(a).

(tt) "***Restricted Stock Award Agreement***" means a written agreement between the Company and a holder of a Restricted Stock Award evidencing the terms and conditions of a Restricted Stock Award grant. Each Restricted Stock Award Agreement will be subject to the terms and conditions of the Plan.

(uu) "***Restricted Stock Unit Award***" means a right to receive shares of Common Stock which is granted pursuant to the terms and conditions of Section 6(b).

(vv) "***Restricted Stock Unit Award Agreement***" means a written agreement between the Company and a holder of a Restricted Stock Unit Award evidencing the terms and conditions of a Restricted Stock Unit Award grant. Each Restricted Stock Unit Award Agreement will be subject to the terms and conditions of the Plan.

(ww) "***Rule 16b-3***" means Rule 16b-3 promulgated under the Exchange Act or any successor to Rule 16b-3, as in effect from time to time.

(xx) "***Securities Act***" means the Securities Act of 1933, as amended.

(yy) "***Stock Appreciation Right***" or "***SAR***" means a right to receive the appreciation on Common Stock that is granted pursuant to the terms and conditions of Section 5.

(zz) "***Stock Appreciation Right Agreement***" means a written agreement between the Company and a holder of a Stock Appreciation Right evidencing the terms and conditions of a Stock Appreciation Right grant. Each Stock Appreciation Right Agreement will be subject to the terms and conditions of the Plan.

(aaa) "***Stock Award***" means any right to receive Common Stock granted under the Plan, including an Incentive Stock Option, a Nonstatutory Stock Option, a Restricted Stock Award, a

Restricted Stock Unit Award, a Stock Appreciation Right, a Performance Stock Award or any Other Stock Award.

(bbb) "***Stock Award Agreement***" means a written agreement between the Company and a Participant evidencing the terms and conditions of a Stock Award grant. Each Stock Award Agreement will be subject to the terms and conditions of the Plan.

(ccc) "***Subsidiary***" means, with respect to the Company, (i) any corporation of which more than 50% of the outstanding capital stock having ordinary voting power to elect a majority of the board of directors of such corporation (irrespective of whether, at the time, stock of any other class or classes of such corporation will have or might have voting power by reason of the happening of any contingency) is at the time, directly or indirectly, Owned by the Company, and (ii) any partnership, limited liability company or other entity in which the Company has a direct or indirect interest (whether in the form of voting or participation in profits or capital contribution) of more than 50%.

(ddd) "***Ten Percent Stockholder***" means a person who Owns (or is deemed to Own pursuant to Section 424(d) of the Code) stock possessing more than ten percent of the total combined voting power of all classes of stock of the Company or any Affiliate.

FIBROGEN, INC.
STOCK OPTION GRANT NOTICE
(2014 EQUITY INCENTIVE PLAN)

FibroGen, Inc. (the "***Company***"), pursuant to its 2014 Equity Incentive Plan (the "***Plan***"), hereby grants to Optionholder an option to purchase the number of shares of the Company's Common Stock set forth below. This option is subject to all of the terms and conditions as set forth in this notice, in the Option Agreement, the Plan and the Notice of Exercise, all of which are attached hereto and incorporated herein in their entirety. Capitalized terms not explicitly defined herein but defined in the Plan or the Option Agreement will have the same definitions as in the Plan or the Option Agreement. If there is any conflict between the terms in this notice and the Plan, the terms of the Plan will control.

Optionholder:	
Date of Grant:	
Vesting Commencement Date:	
Number of Shares Subject to Option:	
Exercise Price (Per Share):	
Total Exercise Price:	
Expiration Date:	

Type of Grant: ☐ Incentive Stock Option[1] ☐ Nonstatutory Stock Option

Exercise Schedule: ☐ Same as Vesting Schedule ☐ Early Exercise Permitted

Vesting Schedule: [One-fourth **(**1/4th) of the shares vest one year after the Vesting Commencement Date; the balance of the shares vest in a series of twelve (12) successive substantially equal quarterly installments measured from the first anniversary of the Vesting Commencement Date, subject to Optionholder's Continuous Service as of each such vesting date.]

Payment: By one or a combination of the following items (described in the Option Agreement):

☒ By cash, check, bank draft or money order payable to the Company
☒ Pursuant to a Regulation T Program if the shares are publicly traded
☒ By delivery of already-owned shares if the shares are publicly traded
☐ If and only to the extent this option is a Nonstatutory Stock Option, and subject to the Company's consent at the time of exercise, by a "net exercise" arrangement

Additional Terms/Acknowledgements: Optionholder acknowledges receipt of, and understands and agrees to, this Stock Option Grant Notice, the Option Agreement and the Plan. Optionholder acknowledges and agrees that this Stock Option Grant Notice and the Option Agreement may not be modified, amended or revised except as provided in the Plan. Optionholder further acknowledges that as of the Date of Grant, this Stock Option Grant Notice, the Option Agreement, and the Plan set forth the entire understanding between Optionholder and the Company regarding this option award and supersede all prior oral and written agreements, promises and/or representations on that subject with the exception of (i) options previously granted and delivered to Optionholder, (ii) any compensation recovery policy that is adopted by the Company or is otherwise required by applicable law and (iii) any written employment or severance arrangement that would provide for vesting acceleration of this option upon the terms and conditions set forth therein.

[1] If this is an Incentive Stock Option, it (plus other outstanding Incentive Stock Options) cannot be first *exercisable* for more than $100,000 in value (measured by exercise price) in any calendar year. Any excess over $100,000 is a Nonstatutory Stock Option.

By accepting this option, Optionholder consents to receive such documents by electronic delivery and to participate in the Plan through an online or electronic system established and maintained by the Company or another third party designated by the Company.

FIBROGEN, INC.

By: _____
Signature

Title: _____

Date: _____

OPTIONHOLDER:

_____
Signature

Date: _____

ATTACHMENTS: Option Agreement, 2014 Equity Incentive Plan and Notice of Exercise

ATTACHMENT I

OPTION AGREEMENT

FIBROGEN, INC.
2014 EQUITY INCENTIVE PLAN

OPTION AGREEMENT
(INCENTIVE STOCK OPTION OR NONSTATUTORY STOCK OPTION)

Pursuant to your Stock Option Grant Notice ("***Grant Notice***") and this Option Agreement, FibroGen, Inc. (the "***Company***") has granted you an option under its 2014 Equity Incentive Plan (the "***Plan***") to purchase the number of shares of the Company's Common Stock indicated in your Grant Notice at the exercise price indicated in your Grant Notice. The option is granted to you effective as of the date of grant set forth in the Grant Notice (the "***Date of Grant***"). If there is any conflict between the terms in this Option Agreement and the Plan, the terms of the Plan will control. Capitalized terms not explicitly defined in this Option Agreement or in the Grant Notice but defined in the Plan will have the same definitions as in the Plan.

The details of your option, in addition to those set forth in the Grant Notice and the Plan, are as follows:

1. VESTING. Subject to the provisions contained herein, your option will vest as provided in your Grant Notice. Vesting will cease upon the termination of your Continuous Service.

2. NUMBER OF SHARES AND EXERCISE PRICE. The number of shares of Common Stock subject to your option and your exercise price per share in your Grant Notice will be adjusted for Capitalization Adjustments.

3. EXERCISE RESTRICTION FOR NON-EXEMPT EMPLOYEES. If you are an Employee eligible for overtime compensation under the Fair Labor Standards Act of 1938, as amended (that is, a "***Non-Exempt Employee***"), and except as otherwise provided in the Plan, you may not exercise your option until you have completed at least six (6) months of Continuous Service measured from the Date of Grant, even if you have already been an employee for more than six (6) months. Consistent with the provisions of the Worker Economic Opportunity Act, you may exercise your option as to any vested portion prior to such six (6) month anniversary in the case of (i) your death or disability, (ii) a Corporate Transaction in which your option is not assumed, continued or substituted, (iii) a Change in Control or (iv) your termination of Continuous Service on your "retirement" (as defined in the Company's benefit plans).

4. EXERCISE PRIOR TO VESTING ("EARLY EXERCISE"). If permitted in your Grant Notice (*i.e.*, the "Exercise Schedule" indicates "Early Exercise Permitted") and subject to the provisions of your option, you may elect at any time that is both (i) during the period of your Continuous Service and (ii) during the term of your option, to exercise all or part of your option, including the unvested portion of your option; *provided, however,* that:

(a) a partial exercise of your option will be deemed to cover first vested shares of Common Stock and then the earliest vesting installment of unvested shares of Common Stock;

(b) any shares of Common Stock so purchased from installments that have not vested as of the date of exercise will be subject to the purchase option in favor of the Company as described in the Company's form of Early Exercise Stock Purchase Agreement;

(c) you will enter into the Company's form of Early Exercise Stock Purchase Agreement with a vesting schedule that will result in the same vesting as if no early exercise had occurred; and

(d) if your option is an Incentive Stock Option, then, to the extent that the aggregate Fair Market Value (determined at the Date of Grant) of the shares of Common Stock with respect to which your option plus all other Incentive Stock Options you hold are exercisable for the first time by you during any calendar year (under all plans of the Company and its Affiliates) exceeds one hundred thousand dollars ($100,000), your option(s) or portions thereof that exceed such limit (according to the order in which they were granted) will be treated as Nonstatutory Stock Options.

5. METHOD OF PAYMENT. You must pay the full amount of the exercise price for the shares you wish to exercise. You may pay the exercise price in cash or by check, bank draft or money order payable to the Company or in any other manner permitted by your Grant Notice, which may include one or more of the following:

(a) Provided that at the time of exercise the Common Stock is publicly traded, pursuant to a program developed under Regulation T as promulgated by the Federal Reserve Board that, prior to the issuance of Common Stock, results in either the receipt of cash (or check) by the Company or the receipt of irrevocable instructions to pay the aggregate exercise price to the Company from the sales proceeds. This manner of payment is also known as a "broker-assisted exercise", "same day sale", or "sell to cover".

(b) Provided that at the time of exercise the Common Stock is publicly traded, by delivery to the Company (either by actual delivery or attestation) of already-owned shares of Common Stock that are owned free and clear of any liens, claims, encumbrances or security interests, and that are valued at Fair Market Value on the date of exercise. "Delivery" for these purposes, in the sole discretion of the Company at the time you exercise your option, will include delivery to the Company of your attestation of ownership of such shares of Common Stock in a form approved by the Company. You may not exercise your option by delivery to the Company of Common Stock if doing so would violate the provisions of any law, regulation or agreement restricting the redemption of the Company's stock.

(c) If this option is a Nonstatutory Stock Option, subject to the consent of the Company at the time of exercise, by a "net exercise" arrangement pursuant to which the Company will reduce the number of shares of Common Stock issued upon exercise of your option by the largest whole number of shares with a Fair Market Value that does not exceed the aggregate exercise price. You must pay any remaining balance of the aggregate exercise price

not satisfied by the "net exercise" in cash or other permitted form of payment. Shares of Common Stock will no longer be outstanding under your option and will not be exercisable thereafter if those shares (i) are used to pay the exercise price pursuant to the "net exercise," (ii) are delivered to you as a result of such exercise, and (iii) are withheld to satisfy your tax withholding obligations.

6. WHOLE SHARES. You may exercise your option only for whole shares of Common Stock.

7. SECURITIES LAW COMPLIANCE. In no event may you exercise your option unless the shares of Common Stock issuable upon exercise are then registered under the Securities Act or, if not registered, the Company has determined that your exercise and the issuance of the shares would be exempt from the registration requirements of the Securities Act. The exercise of your option also must comply with all other applicable laws and regulations governing your option, and you may not exercise your option if the Company determines that such exercise would not be in material compliance with such laws and regulations (including any restrictions on exercise required for compliance with Treas. Reg. 1.401(k)-1(d)(3), if applicable).

8. TERM. You may not exercise your option before the Date of Grant or after the expiration of the option's term. The term of your option expires, subject to the provisions of Section 5(h) of the Plan, upon the earliest of the following:

(a) immediately upon the date on which the event giving rise to your termination of Continuous Service for Cause occurs (or, if required by law, the date of termination of Continuous Service for Cause);

(b) three (3) months after the termination of your Continuous Service for any reason other than Cause, your Disability or your death (except as otherwise provided in Section 8(d) below); *provided*, *however*, that if during any part of such three (3) month period your option is not exercisable solely because of the condition set forth in the section above relating to "Securities Law Compliance," your option will not expire until the earlier of the Expiration Date or until it has been exercisable for an aggregate period of three (3) months after the termination of your Continuous Service; *provided further*, if during any part of such three (3) month period, the sale of any Common Stock received upon exercise of your option would violate the Company's insider trading policy, then your option will not expire until the earlier of the Expiration Date or until it has been exercisable for an aggregate period of three (3) months after the termination of your Continuous Service during which the sale of the Common Stock received upon exercise of your option would not be in violation of the Company's insider trading policy. Notwithstanding the foregoing, if (i) you are a Non-Exempt Employee, (ii) your Continuous Service terminates within six (6) months after the Date of Grant, and (iii) you have vested in a portion of your option at the time of your termination of Continuous Service, your option will not expire until the earlier of (x) the later of (A) the date that is seven (7) months after the Date of Grant, and (B) the date that is three (3) months after the termination of your Continuous Service, and (y) the Expiration Date;

(c) twelve (12) months after the termination of your Continuous Service due to your Disability (except as otherwise provided in Section 8(d)) below;

(d) eighteen (18) months after your death if you die either during your Continuous Service or within three (3) months after your Continuous Service terminates for any reason other than Cause or Disability;

(e) the Expiration Date indicated in your Grant Notice; or

(f) the day before the tenth (10th) anniversary of the Date of Grant.

If your option is an Incentive Stock Option, note that to obtain the federal income tax advantages associated with an Incentive Stock Option, the Code requires that at all times beginning on the Date of Grant and ending on the day three (3) months before the date of your option's exercise, you must be an employee of the Company or an Affiliate, except in the event of your death or Disability. The Company has provided for extended exercisability of your option under certain circumstances for your benefit but cannot guarantee that your option will necessarily be treated as an Incentive Stock Option if you continue to provide services to the Company or an Affiliate as a Consultant or Director after your employment terminates or if you otherwise exercise your option more than three (3) months after the date your employment with the Company or an Affiliate terminates.

9. EXERCISE.

(a) You may exercise the vested portion of your option (and the unvested portion of your option if your Grant Notice so permits) during its term by (i) delivering a Notice of Exercise (in a form designated by the Company) or completing such other documents and/or procedures designated by the Company for exercise and (ii) paying the exercise price and any applicable withholding taxes to the Company's Secretary, stock plan administrator, or such other person as the Company may designate, together with such additional documents as the Company may then require.

(b) By exercising your option you agree that, as a condition to any exercise of your option, the Company may require you to enter into an arrangement providing for the payment by you to the Company of any tax withholding obligation of the Company arising by reason of (i) the exercise of your option, (ii) the lapse of any substantial risk of forfeiture to which the shares of Common Stock are subject at the time of exercise, or (iii) the disposition of shares of Common Stock acquired upon such exercise.

(c) If your option is an Incentive Stock Option, by exercising your option you agree that you will notify the Company in writing within fifteen (15) days after the date of any disposition of any of the shares of the Common Stock issued upon exercise of your option that occurs within two (2) years after the Date of Grant or within one (1) year after such shares of Common Stock are transferred upon exercise of your option.

10. TRANSFERABILITY. Except as otherwise provided in this Section 10, your option is not transferable, except by will or by the laws of descent and distribution, and is exercisable during your life only by you.

(a) Certain Trusts. Upon receiving written permission from the Board or its duly authorized designee, you may transfer your option to a trust if you are considered to be the

sole beneficial owner (determined under Section 671 of the Code and applicable state law) while the option is held in the trust. You and the trustee must enter into transfer and other agreements required by the Company.

(b) Domestic Relations Orders. Upon receiving written permission from the Board or its duly authorized designee, and provided that you and the designated transferee enter into transfer and other agreements required by the Company, you may transfer your option pursuant to the terms of a domestic relations order, official marital settlement agreement or other divorce or separation instrument as permitted by Treasury Regulation 1.421-1(b)(2) that contains the information required by the Company to effectuate the transfer. You are encouraged to discuss the proposed terms of any division of this option with the Company prior to finalizing the domestic relations order or marital settlement agreement to help ensure the required information is contained within the domestic relations order or marital settlement agreement. If this option is an Incentive Stock Option, this option may be deemed to be a Nonstatutory Stock Option as a result of such transfer.

(c) Beneficiary Designation. Upon receiving written permission from the Board or its duly authorized designee, you may, by delivering written notice to the Company, in a form approved by the Company and any broker designated by the Company to handle option exercises, designate a third party who, on your death, will thereafter be entitled to exercise this option and receive the Common Stock or other consideration resulting from such exercise. In the absence of such a designation, your executor or administrator of your estate will be entitled to exercise this option and receive, on behalf of your estate, the Common Stock or other consideration resulting from such exercise.

11. OPTION NOT A SERVICE CONTRACT. Your option is not an employment or service contract, and nothing in your option will be deemed to create in any way whatsoever any obligation on your part to continue in the employ of the Company or an Affiliate, or of the Company or an Affiliate to continue your employment. In addition, nothing in your option will obligate the Company or an Affiliate, their respective stockholders, boards of directors, officers or employees to continue any relationship that you might have as a Director or Consultant for the Company or an Affiliate.

12. WITHHOLDING OBLIGATIONS.

(a) At the time you exercise your option, in whole or in part, and at any time thereafter as requested by the Company, you hereby authorize withholding from payroll and any other amounts payable to you, and otherwise agree to make adequate provision for (including by means of a “same day sale” pursuant to a program developed under Regulation T as promulgated by the Federal Reserve Board to the extent permitted by the Company), any sums required to satisfy the federal, state, local and foreign tax withholding obligations of the Company or an Affiliate, if any, which arise in connection with the exercise of your option.

(b) If this option is a Nonstatutory Stock Option, then upon your request and subject to approval by the Company, and compliance with any applicable legal conditions or restrictions, the Company may withhold from fully vested shares of Common Stock otherwise issuable to you upon the exercise of your option a number of whole shares of Common Stock

having a Fair Market Value, determined by the Company as of the date of exercise, not in excess of the minimum amount of tax required to be withheld by law (or such lower amount as may be necessary to avoid classification of your option as a liability for financial accounting purposes). If the date of determination of any tax withholding obligation is deferred to a date later than the date of exercise of your option, share withholding pursuant to the preceding sentence shall not be permitted unless you make a proper and timely election under Section 83(b) of the Code, covering the aggregate number of shares of Common Stock acquired upon such exercise with respect to which such determination is otherwise deferred, to accelerate the determination of such tax withholding obligation to the date of exercise of your option. Notwithstanding the filing of such election, shares of Common Stock shall be withheld solely from fully vested shares of Common Stock determined as of the date of exercise of your option that are otherwise issuable to you upon such exercise. Any adverse consequences to you arising in connection with such share withholding procedure shall be your sole responsibility.

(c) You may not exercise your option unless the tax withholding obligations of the Company and/or any Affiliate are satisfied. Accordingly, you may not be able to exercise your option when desired even though your option is vested, and the Company will have no obligation to issue a certificate for such shares of Common Stock or release such shares of Common Stock from any escrow provided for herein, if applicable, unless such obligations are satisfied.

13. TAX CONSEQUENCES. You hereby agree that the Company does not have a duty to design or administer the Plan or its other compensation programs in a manner that minimizes your tax liabilities. You will not make any claim against the Company, or any of its Officers, Directors, Employees or Affiliates related to tax liabilities arising from your option or your other compensation. In particular, you acknowledge that this option is exempt from Section 409A of the Code only if the exercise price per share specified in the Grant Notice is at least equal to the "fair market value" per share of the Common Stock on the Date of Grant and there is no other impermissible deferral of compensation associated with the option.

14. NOTICES. Any notices provided for in your option or the Plan will be given in writing (including electronically) and will be deemed effectively given upon receipt or, in the case of notices delivered by mail by the Company to you, five (5) days after deposit in the United States mail, postage prepaid, addressed to you at the last address you provided to the Company. The Company may, in its sole discretion, decide to deliver any documents related to participation in the Plan and this option by electronic means or to request your consent to participate in the Plan by electronic means. By accepting this option, you consent to receive such documents by electronic delivery and to participate in the Plan through an on-line or electronic system established and maintained by the Company or another third party designated by the Company.

15. GOVERNING PLAN DOCUMENT. Your option is subject to all the provisions of the Plan, the provisions of which are hereby made a part of your option, and is further subject to all interpretations, amendments, rules and regulations, which may from time to time be promulgated and adopted pursuant to the Plan. If there is any conflict between the provisions of your option and those of the Plan, the provisions of the Plan will control. In addition, your option (and any compensation paid or shares issued under your option) is subject to recoupment in accordance

with The Dodd–Frank Wall Street Reform and Consumer Protection Act and any implementing regulations thereunder, any clawback policy adopted by the Company and any compensation recovery policy otherwise required by applicable law.

16. OTHER DOCUMENTS. You hereby acknowledge receipt of and the right to receive a document providing the information required by Rule 428(b)(1) promulgated under the Securities Act, which includes the Plan prospectus. In addition, you acknowledge receipt of the Company's policy permitting certain individuals to sell shares only during certain "window" periods and the Company's insider trading policy, in effect from time to time.

17. EFFECT ON OTHER EMPLOYEE BENEFIT PLANS. The value of this option will not be included as compensation, earnings, salaries, or other similar terms used when calculating your benefits under any employee benefit plan sponsored by the Company or any Affiliate, except as such plan otherwise expressly provides. The Company expressly reserves its rights to amend, modify, or terminate any of the Company's or any Affiliate's employee benefit plans.

18. VOTING RIGHTS. You will not have voting or any other rights as a stockholder of the Company with respect to the shares to be issued pursuant to this option until such shares are issued to you. Upon such issuance, you will obtain full voting and other rights as a stockholder of the Company. Nothing contained in this option, and no action taken pursuant to its provisions, will create or be construed to create a trust of any kind or a fiduciary relationship between you and the Company or any other person.

19. SEVERABILITY. If all or any part of this Option Agreement or the Plan is declared by any court or governmental authority to be unlawful or invalid, such unlawfulness or invalidity will not invalidate any portion of this Option Agreement or the Plan not declared to be unlawful or invalid. Any Section of this Option Agreement (or part of such a Section) so declared to be unlawful or invalid shall, if possible, be construed in a manner which will give effect to the terms of such Section or part of a Section to the fullest extent possible while remaining lawful and valid.

20. MISCELLANEOUS.

(a) The rights and obligations of the Company under your option will be transferable to any one or more persons or entities, and all covenants and agreements hereunder will inure to the benefit of, and be enforceable by the Company's successors and assigns.

(b) You agree upon request to execute any further documents or instruments necessary or desirable in the sole determination of the Company to carry out the purposes or intent of your option.

(c) You acknowledge and agree that you have reviewed your option in its entirety, have had an opportunity to obtain the advice of counsel prior to executing and accepting your option, and fully understand all provisions of your option.

(d) This Option Agreement will be subject to all applicable laws, rules, and regulations, and to such approvals by any governmental agencies or national securities exchanges as may be required.

(e) All obligations of the Company under the Plan and this Option Agreement will be binding on any successor to the Company, whether the existence of such successor is the result of a direct or indirect purchase, merger, consolidation, or otherwise, of all or substantially all of the business and/or assets of the Company.

* * *

This Option Agreement will be deemed to be signed by you upon the signing by you of the Grant Notice to which it is attached.

ATTACHMENT II

2014 EQUITY INCENTIVE PLAN

ATTACHMENT III

NOTICE OF EXERCISE

NOTICE OF EXERCISE

FibroGen, Inc.
Attention: [Stock Plan Administrator]
409 Illinois St.
San Francisco, CA 94158

Date of Exercise:

This constitutes notice to FibroGen, Inc. (the "***Company***") under my stock option that I elect to purchase the below number of shares of Common Stock of the Company (the "***Shares***") for the price set forth below.

Type of option (check one):	Incentive ☐	Nonstatutory ☐
Stock option dated:		
Number of Shares as to which option is exercised:		
Certificates to be issued in name of:		
Total exercise price:	$	$
Cash payment delivered herewith:	$	$
Value of Shares delivered herewith:	$	$
Value of Shares pursuant to net exercise:	$	$
Regulation T Program (cashless exercise):	$	$

By this exercise, I agree (i) to provide such additional documents as you may require pursuant to the terms of the FibroGen, Inc. 2014 Equity Incentive Plan, (ii) to provide for the payment by me to you (in the manner designated by you) of your withholding obligation, if any, relating to the exercise of this option, and (iii) if this exercise relates to an Incentive Stock Option, to notify you in writing within fifteen (15) days after the date of any disposition of any of the Shares issued upon exercise of this option that occurs within two (2) years after the date of grant of this option or within one (1) year after such Shares are issued upon exercise of this option.

[Signature Follows]

Very truly yours,

Signature

Print Name

FIBROGEN, INC.
STOCK OPTION GRANT NOTICE
(2014 EQUITY INCENTIVE PLAN)

FibroGen, Inc. (the "***Company***"), pursuant to its 2014 Equity Incentive Plan (the "***Plan***"), hereby grants to Optionholder an option to purchase the number of shares of the Company's Common Stock set forth below. This option is subject to all of the terms and conditions as set forth in this notice, in the Option Agreement, the Plan and the Notice of Exercise, all of which are attached hereto and incorporated herein in their entirety. Capitalized terms not explicitly defined herein but defined in the Plan or the Option Agreement will have the same definitions as in the Plan or the Option Agreement. If there is any conflict between the terms in this notice and the Plan, the terms of the Plan will control.

Optionholder:	_____
Date of Grant:	_____
Vesting Commencement Date:	_____
Number of Shares Subject to Option:	_____
Exercise Price (Per Share):	_____
Total Exercise Price:	_____
Expiration Date:	_____

Type of Grant: ☐ Incentive Stock Option[1] ☐ Nonstatutory Stock Option

Exercise Schedule: ☐ Same as Vesting Schedule ☐ Early Exercise Permitted

Vesting Schedule: [Subject to Section 9 of the Option Agreement, one-fourth **(**1/4th) of the shares vest one year after the Vesting Commencement Date; the balance of the shares vest in a series of twelve (12) successive substantially equal quarterly installments measured from the first anniversary of the Vesting Commencement Date, subject to Optionholder's Continuous Service as of each such vesting date.]

Payment: By one or a combination of the following items (described in the Option Agreement):

☒ By cash, check, bank draft or money order payable to the Company
☒ Pursuant to a Regulation T Program if the shares are publicly traded
☒ By delivery of already-owned shares if the shares are publicly traded
☐ If and only to the extent this option is a Nonstatutory Stock Option, and subject to the Company's consent at the time of exercise, by a "net exercise" arrangement

Additional Terms/Acknowledgements: Optionholder acknowledges receipt of, and understands and agrees to, this Stock Option Grant Notice, the Option Agreement and the Plan. Optionholder acknowledges and agrees that this Stock Option Grant Notice and the Option Agreement may not be modified, amended or revised except as provided in the Plan. Optionholder further acknowledges that as of the Date of Grant, this Stock Option Grant Notice, the Option Agreement, and the Plan set forth the entire understanding between Optionholder and the Company regarding this option award and supersede all prior oral and written agreements, promises and/or representations on that subject with the exception of (i) options previously granted and delivered to Optionholder, (ii) any compensation recovery policy that is adopted by the Company or is otherwise required by applicable law and (iii) any written employment or severance arrangement that would provide for vesting acceleration of this option upon the terms and conditions set forth therein.

1 If this is an Incentive Stock Option, it (plus other outstanding Incentive Stock Options) cannot be first *exercisable* for more than $100,000 in value (measured by exercise price) in any calendar year. Any excess over $100,000 is a Nonstatutory Stock Option.

By accepting this option, Optionholder consents to receive such documents by electronic delivery and to participate in the Plan through an online or electronic system established and maintained by the Company or another third party designated by the Company.

FIBROGEN, INC.

By: _____
Signature

Title: _____
Date: _____

OPTIONHOLDER:

_____
Signature

Date: _____

ATTACHMENTS: Option Agreement, 2014 Equity Incentive Plan and Notice of Exercise

ATTACHMENT I

OPTION AGREEMENT

FIBROGEN, INC.
2014 EQUITY INCENTIVE PLAN

OPTION AGREEMENT
(INCENTIVE STOCK OPTION OR NONSTATUTORY STOCK OPTION)

Pursuant to your Stock Option Grant Notice ("***Grant Notice***") and this Option Agreement, FibroGen, Inc. (the "***Company***") has granted you an option under its 2014 Equity Incentive Plan (the "***Plan***") to purchase the number of shares of the Company's Common Stock indicated in your Grant Notice at the exercise price indicated in your Grant Notice. The option is granted to you effective as of the date of grant set forth in the Grant Notice (the "***Date of Grant***"). If there is any conflict between the terms in this Option Agreement and the Plan, the terms of the Plan will control. Capitalized terms not explicitly defined in this Option Agreement or in the Grant Notice but defined in the Plan will have the same definitions as in the Plan.

The details of your option, in addition to those set forth in the Grant Notice and the Plan, are as follows:

1. VESTING. Subject to the provisions contained herein, your option will vest as provided in your Grant Notice. Vesting will cease upon the termination of your Continuous Service.

2. NUMBER OF SHARES AND EXERCISE PRICE. The number of shares of Common Stock subject to your option and your exercise price per share in your Grant Notice will be adjusted for Capitalization Adjustments.

3. EXERCISE RESTRICTION FOR NON-EXEMPT EMPLOYEES. If you are an Employee eligible for overtime compensation under the Fair Labor Standards Act of 1938, as amended (that is, a "***Non-Exempt Employee***"), and except as otherwise provided in the Plan, you may not exercise your option until you have completed at least six (6) months of Continuous Service measured from the Date of Grant, even if you have already been an employee for more than six (6) months. Consistent with the provisions of the Worker Economic Opportunity Act, you may exercise your option as to any vested portion prior to such six (6) month anniversary in the case of (i) your death or disability, (ii) a Corporate Transaction in which your option is not assumed, continued or substituted, (iii) a Change in Control or (iv) your termination of Continuous Service on your "retirement" (as defined in the Company's benefit plans).

4. EXERCISE PRIOR TO VESTING ("EARLY EXERCISE"). If permitted in your Grant Notice (*i.e.*, the "Exercise Schedule" indicates "Early Exercise Permitted") and subject to the provisions of your option, you may elect at any time that is both (i) during the period of your Continuous Service and (ii) during the term of your option, to exercise all or part of your option, including the unvested portion of your option; *provided*, *however*, that:

(a) a partial exercise of your option will be deemed to cover first vested shares of Common Stock and then the earliest vesting installment of unvested shares of Common Stock;

(b) any shares of Common Stock so purchased from installments that have not vested as of the date of exercise will be subject to the purchase option in favor of the Company as described in the Company's form of Early Exercise Stock Purchase Agreement;

(c) you will enter into the Company's form of Early Exercise Stock Purchase Agreement with a vesting schedule that will result in the same vesting as if no early exercise had occurred; and

(d) if your option is an Incentive Stock Option, then, to the extent that the aggregate Fair Market Value (determined at the Date of Grant) of the shares of Common Stock with respect to which your option plus all other Incentive Stock Options you hold are exercisable for the first time by you during any calendar year (under all plans of the Company and its Affiliates) exceeds one hundred thousand dollars ($100,000), your option(s) or portions thereof that exceed such limit (according to the order in which they were granted) will be treated as Nonstatutory Stock Options.

5. METHOD OF PAYMENT. You must pay the full amount of the exercise price for the shares you wish to exercise. You may pay the exercise price in cash or by check, bank draft or money order payable to the Company or in any other manner permitted by your Grant Notice, which may include one or more of the following:

(a) Provided that at the time of exercise the Common Stock is publicly traded, pursuant to a program developed under Regulation T as promulgated by the Federal Reserve Board that, prior to the issuance of Common Stock, results in either the receipt of cash (or check) by the Company or the receipt of irrevocable instructions to pay the aggregate exercise price to the Company from the sales proceeds. This manner of payment is also known as a "broker-assisted exercise", "same day sale", or "sell to cover".

(b) Provided that at the time of exercise the Common Stock is publicly traded, by delivery to the Company (either by actual delivery or attestation) of already-owned shares of Common Stock that are owned free and clear of any liens, claims, encumbrances or security interests, and that are valued at Fair Market Value on the date of exercise. "Delivery" for these purposes, in the sole discretion of the Company at the time you exercise your option, will include delivery to the Company of your attestation of ownership of such shares of Common Stock in a form approved by the Company. You may not exercise your option by delivery to the Company of Common Stock if doing so would violate the provisions of any law, regulation or agreement restricting the redemption of the Company's stock.

(c) If this option is a Nonstatutory Stock Option, subject to the consent of the Company at the time of exercise, by a "net exercise" arrangement pursuant to which the Company will reduce the number of shares of Common Stock issued upon exercise of your option by the largest whole number of shares with a Fair Market Value that does not exceed the aggregate exercise price. You must pay any remaining balance of the aggregate exercise price

not satisfied by the "net exercise" in cash or other permitted form of payment. Shares of Common Stock will no longer be outstanding under your option and will not be exercisable thereafter if those shares (i) are used to pay the exercise price pursuant to the "net exercise," (ii) are delivered to you as a result of such exercise, and (iii) are withheld to satisfy your tax withholding obligations.

6. WHOLE SHARES. You may exercise your option only for whole shares of Common Stock.

7. SECURITIES LAW COMPLIANCE. In no event may you exercise your option unless the shares of Common Stock issuable upon exercise are then registered under the Securities Act or, if not registered, the Company has determined that your exercise and the issuance of the shares would be exempt from the registration requirements of the Securities Act. The exercise of your option also must comply with all other applicable laws and regulations governing your option, and you may not exercise your option if the Company determines that such exercise would not be in material compliance with such laws and regulations (including any restrictions on exercise required for compliance with Treas. Reg. 1.401(k)-1(d)(3), if applicable).

8. TERM. You may not exercise your option before the Date of Grant or after the expiration of the option's term. The term of your option expires, subject to the provisions of Section 5(h) of the Plan, upon the earliest of the following:

(a) immediately upon the date on which the event giving rise to your termination of Continuous Service for Cause occurs (or, if required by law, the date of termination of Continuous Service for Cause);

(b) three (3) months after the termination of your Continuous Service for any reason other than Cause, your Disability or your death (except as otherwise provided in Section 8(d) below); *provided, however,* that if during any part of such three (3) month period your option is not exercisable solely because of the condition set forth in the section above relating to "Securities Law Compliance," your option will not expire until the earlier of the Expiration Date or until it has been exercisable for an aggregate period of three (3) months after the termination of your Continuous Service; *provided further,* if during any part of such three (3) month period, the sale of any Common Stock received upon exercise of your option would violate the Company's insider trading policy, then your option will not expire until the earlier of the Expiration Date or until it has been exercisable for an aggregate period of three (3) months after the termination of your Continuous Service during which the sale of the Common Stock received upon exercise of your option would not be in violation of the Company's insider trading policy. Notwithstanding the foregoing, if (i) you are a Non-Exempt Employee, (ii) your Continuous Service terminates within six (6) months after the Date of Grant, and (iii) you have vested in a portion of your option at the time of your termination of Continuous Service, your option will not expire until the earlier of (x) the later of (A) the date that is seven (7) months after the Date of Grant, and (B) the date that is three (3) months after the termination of your Continuous Service, and (y) the Expiration Date;

(c) twelve (12) months after the termination of your Continuous Service due to your Disability (except as otherwise provided in Section 8(d)) below;

(d) eighteen (18) months after your death if you die either during your Continuous Service or within three (3) months after your Continuous Service terminates for any reason other than Cause or Disability;

(e) the Expiration Date indicated in your Grant Notice; or

(f) the day before the tenth (10th) anniversary of the Date of Grant.

If your option is an Incentive Stock Option, note that to obtain the federal income tax advantages associated with an Incentive Stock Option, the Code requires that at all times beginning on the Date of Grant and ending on the day three (3) months before the date of your option's exercise, you must be an employee of the Company or an Affiliate, except in the event of your death or Disability. The Company has provided for extended exercisability of your option under certain circumstances for your benefit but cannot guarantee that your option will necessarily be treated as an Incentive Stock Option if you continue to provide services to the Company or an Affiliate as a Consultant or Director after your employment terminates or if you otherwise exercise your option more than three (3) months after the date your employment with the Company or an Affiliate terminates.

9. VESTING UPON A CHANGE IN CONTROL.

(a) In the event of a Change in Control (as defined in the Plan, except as set forth in Section 9(c) below), if your option is assumed, continued or otherwise substituted in the Change in Control, and your employment is involuntarily terminated by the Company or its successor corporation without Cause (and other than due to your death or disability) within twelve (12) months following the consummation of the Change in Control, or if you terminate your employment due to a Constructive Termination (as defined below) within twelve (12) months following the consummation of the Change in Control, the vesting and exercisability of the unvested portion of your option will accelerate in full on the date of your termination. Notwithstanding the foregoing, in the event of a Change in Control, if your option is not assumed, continued or otherwise substituted in the Change in Control transaction, the unvested portion of your option will vest and become exercisable as of immediately prior to the consummation of the Change in Control.

(b) For purposes of this Agreement, "***Constructive Termination***" means your termination of employment following the occurrence, without your written consent, of any one of the following events:

(i) a substantial reduction in your duties or responsibilities (and not simply a change in title or reporting relationships) in effect immediately prior to the effective date of the Change in Control; *provided*, *however*, that it shall not be a "Constructive Termination" if the Company is retained as a separate legal entity or business unit following the effective date of the Change in Control and you hold the same position in such legal entity or business unit as you held before the effective date of the Change in Control;

(ii) a material reduction by the Company (or its successor corporation) in your annual base salary, as in effect on the effective date of the Change in Control or as increased thereafter;

(iii) any failure by the Company (or its successor corporation) to continue in effect any benefit plan or program, including incentive plans or plans with respect to the receipt of securities of the Company, in which you were participating immediately prior to the effective date of the Change in Control (hereinafter referred to as "***Benefit Plans***"), or the taking of any action by the Company (or its successor corporation) that would adversely affect your participation in or reduce your benefits under the Benefit Plans or deprive you of any fringe benefit that you enjoyed immediately prior to the effective date of the Change in Control; *provided*, *however*, that a Constructive Termination shall not be deemed to have occurred if the Company (or its successor corporation) provides for your participation in benefit plans and programs that, taken as a whole, are comparable to the Benefit Plans;

(iv) a relocation of your business office location more than fifty (50) miles from the location at which you performed your duties as of the effective date of the Change in Control, except for required travel by you on the Company's (or its successor corporation's) business to an extent substantially consistent with your business travel obligations prior to the effective date of the Change in Control; or

(v) a material breach by the Company (or its successor corporation) of any provision of any material agreement between you and the Company concerning the terms and conditions of your employment.

(c) For purposes of this Agreement, notwithstanding anything to the contrary contained in the Plan, the term "Change in Control" shall be defined as in the Plan, except that the term shall not include the implementation of anti-takeover measures, including, without limitation, a recapitalization or reorganization of the Company's capital structure, whether by merger, amendment of the Company's certificate of incorporation or certificate(s) of designations, or otherwise, solely for the purposes of the implementation of a dual class stock structure, in which one class of securities has greater voting power on matters involving a change of control and other related issues, irrespective of (i) whether such anti-takeover measure includes a voting agreement or a proxy with respect to the Company's shares; or (ii) whether such recapitalization, reorganization or anti-takeover measure results in a change in Ownership of greater than fifty percent (50%) of the total voting power of the Company.

10. EXERCISE.

(a) You may exercise the vested portion of your option (and the unvested portion of your option if your Grant Notice so permits) during its term by (i) delivering a Notice of Exercise (in a form designated by the Company) or completing such other documents and/or procedures designated by the Company for exercise and (ii) paying the exercise price and any applicable withholding taxes to the Company's Secretary, stock plan administrator, or such other person as the Company may designate, together with such additional documents as the Company may then require.

(b) By exercising your option you agree that, as a condition to any exercise of your option, the Company may require you to enter into an arrangement providing for the payment by you to the Company of any tax withholding obligation of the Company arising by reason of (i) the exercise of your option, (ii) the lapse of any substantial risk of forfeiture

to which the shares of Common Stock are subject at the time of exercise, or (iii) the disposition of shares of Common Stock acquired upon such exercise.

(c) If your option is an Incentive Stock Option, by exercising your option you agree that you will notify the Company in writing within fifteen (15) days after the date of any disposition of any of the shares of the Common Stock issued upon exercise of your option that occurs within two (2) years after the Date of Grant or within one (1) year after such shares of Common Stock are transferred upon exercise of your option.

11. TRANSFERABILITY. Except as otherwise provided in this Section 11, your option is not transferable, except by will or by the laws of descent and distribution, and is exercisable during your life only by you.

(a) Certain Trusts. Upon receiving written permission from the Board or its duly authorized designee, you may transfer your option to a trust if you are considered to be the sole beneficial owner (determined under Section 671 of the Code and applicable state law) while the option is held in the trust. You and the trustee must enter into transfer and other agreements required by the Company.

(b) Domestic Relations Orders. Upon receiving written permission from the Board or its duly authorized designee, and provided that you and the designated transferee enter into transfer and other agreements required by the Company, you may transfer your option pursuant to the terms of a domestic relations order, official marital settlement agreement or other divorce or separation instrument as permitted by Treasury Regulation 1.421-1(b)(2) that contains the information required by the Company to effectuate the transfer. You are encouraged to discuss the proposed terms of any division of this option with the Company prior to finalizing the domestic relations order or marital settlement agreement to help ensure the required information is contained within the domestic relations order or marital settlement agreement. If this option is an Incentive Stock Option, this option may be deemed to be a Nonstatutory Stock Option as a result of such transfer.

(c) Beneficiary Designation. Upon receiving written permission from the Board or its duly authorized designee, you may, by delivering written notice to the Company, in a form approved by the Company and any broker designated by the Company to handle option exercises, designate a third party who, on your death, will thereafter be entitled to exercise this option and receive the Common Stock or other consideration resulting from such exercise. In the absence of such a designation, your executor or administrator of your estate will be entitled to exercise this option and receive, on behalf of your estate, the Common Stock or other consideration resulting from such exercise.

12. OPTION NOT A SERVICE CONTRACT. Your option is not an employment or service contract, and nothing in your option will be deemed to create in any way whatsoever any obligation on your part to continue in the employ of the Company or an Affiliate, or of the Company or an Affiliate to continue your employment. In addition, nothing in your option will obligate the Company or an Affiliate, their respective stockholders, boards of directors, officers or employees to continue any relationship that you might have as a Director or Consultant for the Company or an Affiliate.

13. WITHHOLDING OBLIGATIONS.

(a) At the time you exercise your option, in whole or in part, and at any time thereafter as requested by the Company, you hereby authorize withholding from payroll and any other amounts payable to you, and otherwise agree to make adequate provision for (including by means of a "same day sale" pursuant to a program developed under Regulation T as promulgated by the Federal Reserve Board to the extent permitted by the Company), any sums required to satisfy the federal, state, local and foreign tax withholding obligations of the Company or an Affiliate, if any, which arise in connection with the exercise of your option.

(b) If this option is a Nonstatutory Stock Option, then upon your request and subject to approval by the Company, and compliance with any applicable legal conditions or restrictions, the Company may withhold from fully vested shares of Common Stock otherwise issuable to you upon the exercise of your option a number of whole shares of Common Stock having a Fair Market Value, determined by the Company as of the date of exercise, not in excess of the minimum amount of tax required to be withheld by law (or such lower amount as may be necessary to avoid classification of your option as a liability for financial accounting purposes). If the date of determination of any tax withholding obligation is deferred to a date later than the date of exercise of your option, share withholding pursuant to the preceding sentence shall not be permitted unless you make a proper and timely election under Section 83(b) of the Code, covering the aggregate number of shares of Common Stock acquired upon such exercise with respect to which such determination is otherwise deferred, to accelerate the determination of such tax withholding obligation to the date of exercise of your option. Notwithstanding the filing of such election, shares of Common Stock shall be withheld solely from fully vested shares of Common Stock determined as of the date of exercise of your option that are otherwise issuable to you upon such exercise. Any adverse consequences to you arising in connection with such share withholding procedure shall be your sole responsibility.

(c) You may not exercise your option unless the tax withholding obligations of the Company and/or any Affiliate are satisfied. Accordingly, you may not be able to exercise your option when desired even though your option is vested, and the Company will have no obligation to issue a certificate for such shares of Common Stock or release such shares of Common Stock from any escrow provided for herein, if applicable, unless such obligations are satisfied.

14. TAX CONSEQUENCES. You hereby agree that the Company does not have a duty to design or administer the Plan or its other compensation programs in a manner that minimizes your tax liabilities. You will not make any claim against the Company, or any of its Officers, Directors, Employees or Affiliates related to tax liabilities arising from your option or your other compensation. In particular, you acknowledge that this option is exempt from Section 409A of the Code only if the exercise price per share specified in the Grant Notice is at least equal to the "fair market value" per share of the Common Stock on the Date of Grant and there is no other impermissible deferral of compensation associated with the option.

15. NOTICES. Any notices provided for in your option or the Plan will be given in writing (including electronically) and will be deemed effectively given upon receipt or, in the case of notices delivered by mail by the Company to you, five (5) days after deposit in the

United States mail, postage prepaid, addressed to you at the last address you provided to the Company. The Company may, in its sole discretion, decide to deliver any documents related to participation in the Plan and this option by electronic means or to request your consent to participate in the Plan by electronic means. By accepting this option, you consent to receive such documents by electronic delivery and to participate in the Plan through an on-line or electronic system established and maintained by the Company or another third party designated by the Company.

16. GOVERNING PLAN DOCUMENT. Your option is subject to all the provisions of the Plan, the provisions of which are hereby made a part of your option, and is further subject to all interpretations, amendments, rules and regulations, which may from time to time be promulgated and adopted pursuant to the Plan. If there is any conflict between the provisions of your option and those of the Plan, the provisions of the Plan will control. In addition, your option (and any compensation paid or shares issued under your option) is subject to recoupment in accordance with The Dodd–Frank Wall Street Reform and Consumer Protection Act and any implementing regulations thereunder, any clawback policy adopted by the Company and any compensation recovery policy otherwise required by applicable law.

17. OTHER DOCUMENTS. You hereby acknowledge receipt of and the right to receive a document providing the information required by Rule 428(b)(1) promulgated under the Securities Act, which includes the Plan prospectus. In addition, you acknowledge receipt of the Company's policy permitting certain individuals to sell shares only during certain "window" periods and the Company's insider trading policy, in effect from time to time.

18. EFFECT ON OTHER EMPLOYEE BENEFIT PLANS. The value of this option will not be included as compensation, earnings, salaries, or other similar terms used when calculating your benefits under any employee benefit plan sponsored by the Company or any Affiliate, except as such plan otherwise expressly provides. The Company expressly reserves its rights to amend, modify, or terminate any of the Company's or any Affiliate's employee benefit plans.

19. VOTING RIGHTS. You will not have voting or any other rights as a stockholder of the Company with respect to the shares to be issued pursuant to this option until such shares are issued to you. Upon such issuance, you will obtain full voting and other rights as a stockholder of the Company. Nothing contained in this option, and no action taken pursuant to its provisions, will create or be construed to create a trust of any kind or a fiduciary relationship between you and the Company or any other person.

20. SEVERABILITY. If all or any part of this Option Agreement or the Plan is declared by any court or governmental authority to be unlawful or invalid, such unlawfulness or invalidity will not invalidate any portion of this Option Agreement or the Plan not declared to be unlawful or invalid. Any Section of this Option Agreement (or part of such a Section) so declared to be unlawful or invalid shall, if possible, be construed in a manner which will give effect to the terms of such Section or part of a Section to the fullest extent possible while remaining lawful and valid.

21. MISCELLANEOUS.

(a) The rights and obligations of the Company under your option will be transferable to any one or more persons or entities, and all covenants and agreements hereunder will inure to the benefit of, and be enforceable by the Company's successors and assigns.

(b) You agree upon request to execute any further documents or instruments necessary or desirable in the sole determination of the Company to carry out the purposes or intent of your option.

(c) You acknowledge and agree that you have reviewed your option in its entirety, have had an opportunity to obtain the advice of counsel prior to executing and accepting your option, and fully understand all provisions of your option.

(d) This Option Agreement will be subject to all applicable laws, rules, and regulations, and to such approvals by any governmental agencies or national securities exchanges as may be required.

(e) All obligations of the Company under the Plan and this Option Agreement will be binding on any successor to the Company, whether the existence of such successor is the result of a direct or indirect purchase, merger, consolidation, or otherwise, of all or substantially all of the business and/or assets of the Company.

* * *

This Option Agreement will be deemed to be signed by you upon the signing by you of the Grant Notice to which it is attached.

ATTACHMENT II

2014 EQUITY INCENTIVE PLAN

ATTACHMENT III

NOTICE OF EXERCISE

NOTICE OF EXERCISE

FibroGen, Inc.
Attention: [Stock Plan Administrator]
409 Illinois St.
San Francisco, CA 94158

Date of Exercise:

This constitutes notice to FibroGen, Inc. (the "***Company***") under my stock option that I elect to purchase the below number of shares of Common Stock of the Company (the "***Shares***") for the price set forth below.

Type of option (check one):	Incentive ☐	Nonstatutory ☐
Stock option dated:		
Number of Shares as to which option is exercised:		
Certificates to be issued in name of:		
Total exercise price:	$	$
Cash payment delivered herewith:	$	$
Value of Shares delivered herewith:	$	$
Value of Shares pursuant to net exercise:	$	$
Regulation T Program (cashless exercise):	$	$

By this exercise, I agree (i) to provide such additional documents as you may require pursuant to the terms of the FibroGen, Inc. 2014 Equity Incentive Plan, (ii) to provide for the payment by me to you (in the manner designated by you) of your withholding obligation, if any, relating to the exercise of this option, and (iii) if this exercise relates to an Incentive Stock Option, to notify you in writing within fifteen (15) days after the date of any disposition of any of the Shares issued upon exercise of this option that occurs within two (2) years after the date of grant of this option or within one (1) year after such Shares are issued upon exercise of this option.

[Signature Follows]

Very truly yours,

Signature

Print Name

FIBROGEN, INC.
RESTRICTED STOCK UNIT GRANT NOTICE
(2014 EQUITY INCENTIVE PLAN)

FibroGen, Inc. (the "***Company***"), pursuant to its 2014 Equity Incentive Plan (the "***Plan***"), hereby awards to Participant a Restricted Stock Unit Award for the number of shares of the Company's Common Stock ("***Restricted Stock Units***") set forth below (the "***Award***"). The Award is subject to all of the terms and conditions as set forth in this notice of grant (this "***Restricted Stock Unit Grant Notice***") and in the Plan and the Restricted Stock Unit Award Agreement (the "***Award Agreement***"), which are incorporated herein in their entirety. Capitalized terms not otherwise defined herein shall have the meanings set forth in the Plan or the Award Agreement. In the event of any conflict between the terms in the Award Agreement and the Plan, the terms of the Plan shall control.

Participant:	_____
ID:	_____
Date of Grant:	_____
Grant Number:	_____
Vesting Commencement Date:	_____
Number of Restricted Stock Units/Shares:	_____

Vesting Schedule: Subject to Section 9(c) of the Plan, the shares subject to the Award shall vest as follows: [_____], subject to Participant's Continuous Service on each applicable vesting date.

Issuance Schedule: Subject to any change on a Capitalization Adjustment, one share of Common Stock will be issued for each Restricted Stock Unit that vests at the time set forth in Section 6 of the Award Agreement.

Additional Terms/Acknowledgements: Participant acknowledges receipt of, and understands and agrees to, this Restricted Stock Unit Grant Notice, the Award Agreement and the Plan. Participant further acknowledges that as of the Date of Grant, this Restricted Stock Unit Grant Notice, the Award Agreement and the Plan set forth the entire understanding between Participant and the Company regarding the acquisition of the Common Stock pursuant to the Award specified above and supersede all prior oral and written agreements on the terms of this Award with the exception, if applicable, of (i) the written employment agreement or offer letter agreement entered into between the Company and Participant specifying the terms that should govern this specific Award, and (ii) any compensation recovery policy that is adopted by the Company or is otherwise required by applicable law.

* * *

By accepting this Award, Participant acknowledges having received and read the Restricted Stock Unit Grant Notice, the Award Agreement and the Plan and agrees to all of the terms and conditions set forth in these documents. Participant consents to receive Plan documents by electronic delivery and to participate in the Plan through an on-line or electronic system established and maintained by the Company or another third party designated by the Company.

OTHER AGREEMENTS: _____

FIBROGEN, INC.

By: _____
Signature

Title: _____

Date: _____

PARTICIPANT

_____
Signature

Date: _____

ATTACHMENTS: Award Agreement

FIBROGEN, INC.
2014 EQUITY INCENTIVE PLAN
RESTRICTED STOCK UNIT AWARD AGREEMENT

Pursuant to the Restricted Stock Unit Grant Notice (the "***Grant Notice***") and this Restricted Stock Unit Award Agreement (the "***Agreement***"), FibroGen, Inc. (the "***Company***") has awarded you ("***Participant***") a Restricted Stock Unit Award (this "***Award***") pursuant to Section 6(b) of the Company's 2014 Equity Incentive Plan (the "***Plan***") for the number of Restricted Stock Units/shares indicated in the Grant Notice. Capitalized terms not explicitly defined in this Agreement or the Grant Notice shall have the same meanings given to them in the Plan. The terms of your Award, in addition to those set forth in the Grant Notice, are as follows.

1. GRANT OF THE AWARD. This Award represents the right to be issued on a future date one (1) share of Common Stock for each Restricted Stock Unit that vests on the applicable vesting date(s) (subject to any adjustment under Section 3 below) as indicated in the Grant Notice. As of the Date of Grant, the Company will credit to a bookkeeping account maintained by the Company for your benefit (the "***Account***") the number of Restricted Stock Units/shares of Common Stock subject to this Award. This Award was granted in consideration of your services to the Company.

2. VESTING. Subject to the limitations contained herein, your Award will vest, if at all, in accordance with the vesting schedule provided in the Grant Notice, provided that vesting will cease upon the termination of your Continuous Service. Upon such termination of your Continuous Service, the Restricted Stock Units/shares of Common Stock credited to the Account that were not vested on the date of such termination will be forfeited at no cost to the Company and you will have no further right, title or interest in or to such underlying shares of Common Stock.

3. NUMBER OF SHARES. The number of Restricted Stock Units/shares subject to your Award may be adjusted from time to time for Capitalization Adjustments, as provided in the Plan. Any additional Restricted Stock Units, shares, cash or other property that becomes subject to this Award pursuant to this Section 3, if any, shall be subject, in a manner determined by the Board, to the same forfeiture restrictions, restrictions on transferability, and time and manner of delivery as applicable to the other Restricted Stock Units and shares covered by your Award. Notwithstanding the provisions of this Section 3, no fractional shares or rights for fractional shares of Common Stock shall be created pursuant to this Section 3. Any fraction of a share will be rounded down to the nearest whole share.

4. SECURITIES LAW COMPLIANCE. You may not be issued any Common Stock under your Award unless the shares of Common Stock underlying the Restricted Stock Units are either (i) then registered under the Securities Act, or (ii) the Company has determined that such issuance would be exempt from the registration requirements of the Securities Act. Your Award must also comply with other applicable laws and regulations governing the Award, and you shall not receive such Common Stock if the Company determines that such receipt would not be in material compliance with such laws and regulations.

5. TRANSFER RESTRICTIONS. Prior to the time that shares of Common Stock have been delivered to you, you may not transfer, pledge, sell or otherwise dispose of this Award or the shares issuable in respect of your Award, except as expressly provided in this Section 5. For example, you may not use shares that may be issued in respect of your Restricted Stock Units as security for a loan. The restrictions on transfer set forth herein will lapse upon delivery to you of shares in respect of your vested Restricted Stock Units.

(a) Death. Your Award is transferable by will and by the laws of descent and distribution. At your death, vesting of your Award will cease and your executor or administrator of your estate shall be entitled to receive, on behalf of your estate, any Common Stock or other consideration that vested but was not issued before your death.

(b) Domestic Relations Orders. Upon receiving written permission from the Board or its duly authorized designee, and provided that you and the designated transferee enter into transfer and other agreements required by the Company, you may transfer your right to receive the distribution of Common Stock or other consideration hereunder, pursuant to a domestic relations order or marital settlement agreement that contains the information required by the Company to effectuate the transfer. You are encouraged to discuss the proposed terms of any division of this Award with the Company's stock plan administrator prior to finalizing the domestic relations order or marital settlement agreement to verify that you may make such transfer, and if so, to help ensure the required information is contained within the domestic relations order or marital settlement agreement.

6. DATE OF ISSUANCE.

(a) Subject to the satisfaction of the withholding obligations set forth in Section 11 of this Agreement and subject to Section 6(b) below, in the event that one or more Restricted Stock Units vests, the Company shall issue to you, on the applicable vesting date (subject to any adjustment under Section 3 above), one share of Common Stock for each Restricted Stock Unit that vests on the applicable vesting date; *provided*, that if such date falls on a date that is not a business day, delivery will instead occur on the next business day.

(b) Notwithstanding the foregoing, shares will be delivered on a date later than the applicable vesting date or its next following business day, if, to the extent applicable at a vesting date, (i) any shares covered by your Restricted Stock Units are scheduled to be delivered on a date (the "***Original Distribution Date***") that does not occur: (A) during an open "window period" applicable to you, as determined by the Company in accordance with the Company's then-effective policy on trading in Company securities (the "***Policy***"); (B) on a date on which you are permitted to sell shares of Common Stock pursuant to a written plan that meets the requirements of Rule 10b5-1 under the Exchange Act, as determined by the Company in accordance with the Policy; (C) on a date when you are otherwise permitted to sell shares of Common Stock on the open market; or (D) during any applicable lock-up period under any lock-up agreement or market standoff agreement covering shares of Common Stock held by you; and (ii) the Company elects not to satisfy its tax withholding obligations by withholding shares pursuant to one of the methods permitted under Section 11, withholding from other compensation otherwise payable to you by the Company, or by permitting you to pay your Withholding Taxes in cash, then such shares will not be delivered on such Original Distribution

Date and will instead be delivered on the first business day when you are not prohibited from selling shares of the Company's Common Stock in the open public market, but in no event later than the date that is the 15th day of the third calendar month of the year following the year in which the shares of Common Stock under this Award are no longer subject to a "substantial risk of forfeiture" within the meaning of Treasury Regulations Section 1.409A-1(d).

(c) Delivery of the shares pursuant to the provisions of this Section 6 is intended to comply with the requirements for the short-term deferral exemption available under Treasury Regulations Section 1.409A-1(b)(4) and will be construed and administered in such manner.

(d) If the Company elects to issue you cash in part or in full satisfaction of the shares of Common Stock issuable upon vesting of your Restricted Stock Units, then the foregoing provisions of this Section 6 will not apply and such cash will be paid to you in a lump sum at any time on after the vesting date of your Restricted Stock Units, but in no event later than the 15th day of the third calendar month of the year following the year in which the shares of Common Stock under the Restricted Stock Units are no longer subject to a "substantial risk of forfeiture" within the meaning of Treasury Regulations Section 1.409A-1(d).

(e) The form of delivery (e.g., a stock certificate or electronic entry evidencing such shares) shall be determined by the Company.

7. DIVIDENDS. You shall receive no benefit or adjustment to your Award with respect to any cash dividend, stock dividend or other distribution that does not result from a Capitalization Adjustment.

8. RESTRICTIVE LEGENDS. The shares of Common Stock issued under your Award shall be endorsed with appropriate legends as determined by the Company.

9. EXECUTION OF DOCUMENTS. You hereby acknowledge and agree that the manner selected by the Company by which you indicate your consent to your Grant Notice is also deemed to be your execution of your Grant Notice and of this Agreement. You further agree that such manner of indicating consent may be relied upon as your signature for establishing your execution of any documents to be executed in the future in connection with your Award.

10. AWARD NOT A SERVICE CONTRACT.

(a) Nothing in this Agreement (including, but not limited to, the vesting of your Award or the issuance of the shares subject to your Award), the Plan or any covenant of good faith and fair dealing that may be found implicit in this Agreement or the Plan shall: (i) confer upon you any right to continue in the employ of, or affiliation with, the Company or an Affiliate; (ii) constitute any promise or commitment by the Company or an Affiliate regarding the fact or nature of future positions, future work assignments, future compensation or any other term or condition of employment or affiliation; (iii) confer any right or benefit under this Agreement or the Plan unless such right or benefit has specifically accrued under the terms of this Agreement or Plan; or (iv) deprive the Company of the right to terminate you at will and without regard to any future vesting opportunity that you may have.

(b) The Company has the right to reorganize, sell, spin-out or otherwise restructure one or more of its businesses or Affiliates at any time or from time to time, as it deems appropriate (a "***reorganization***"). Such a reorganization could result in the termination of your Continuous Service, or the termination of Affiliate status of your employer and the loss of benefits available to you under this Agreement, including but not limited to, the termination of the right to continue vesting in the Award. This Agreement, the Plan, the transactions contemplated hereunder and the vesting schedule set forth herein or any covenant of good faith and fair dealing that may be found implicit in any of them do not constitute an express or implied promise of continued engagement as an employee or consultant for the term of this Agreement, for any period, or at all, and shall not interfere in any way with the Company's right to conduct a reorganization.

11. WITHHOLDING OBLIGATIONS.

(a) On the vesting date, and on or before the date on which you receive a distribution of the shares underlying your Restricted Stock Units, and at any other time as reasonably requested by the Company in accordance with applicable tax laws, you hereby authorize any required withholding from the Common Stock issuable to you and/or otherwise agree to make adequate provision in cash for any sums required to satisfy the federal, state, local and foreign tax withholding obligations of the Company or any Affiliate that arise in connection with the vesting and settlement of your Award (the "***Withholding Taxes***"). The Company or any Affiliate may, in its sole discretion, satisfy all or any portion of the Withholding Taxes obligation relating to your Award by any of the following means or by a combination of such means: (i) withholding from any compensation otherwise payable to you by the Company; (ii) causing you to tender a cash payment; (iii) permitting you to enter into a "same day sale" commitment, if applicable, with a broker-dealer that is a member of the Financial Industry Regulatory Authority (a "***FINRA Dealer***") whereby you irrevocably elect to sell a portion of the shares to be delivered in connection with your Restricted Stock Units to satisfy the Withholding Taxes and whereby the FINRA Dealer irrevocably commits to forward the proceeds necessary to satisfy the Withholding Taxes directly to the Company and/or its Affiliates; or (iv) withholding shares of Common Stock from the shares of Common Stock issued or otherwise issuable to you in connection with the Award with a Fair Market Value (measured as of the date shares of Common Stock are issued to pursuant to Section 6) equal to the amount of such Withholding Taxes; *provided*, *however*, that the number of such shares of Common Stock so withheld will not exceed the amount necessary to satisfy the Company's required tax withholding obligations using the minimum statutory withholding rates for federal, state, local and foreign tax purposes, including payroll taxes, that are applicable to supplemental taxable income; and *provided*, further, that to the extent necessary to qualify for an exemption from application of Section 16(b) of the Exchange Act, if applicable, such share withholding procedure will be subject to the express prior approval of the Company's Compensation Committee.

(b) Unless the tax withholding obligations of the Company and/or any Affiliate are satisfied, the Company shall have no obligation to deliver to you any shares of Common Stock in settlement of any vested portion of your Award.

(c) In the event the Company's obligation to withhold arises prior to the delivery to you of Common Stock or it is determined after the delivery of Common Stock to you

that the amount of the Company's withholding obligation was greater than the amount withheld by the Company, you agree to indemnify and hold the Company harmless from any failure by the Company to withhold the proper amount.

12. TAX CONSEQUENCES. The Company has no duty or obligation to minimize the tax consequences to you of this Award and shall not be liable to you for any adverse tax consequences to you arising in connection with this Award. You are hereby advised to consult with your own personal tax, financial and/or legal advisors regarding the tax consequences of this Award and by signing the Grant Notice, you have agreed that you have done so or knowingly and voluntarily declined to do so. You understand that you (and not the Company) shall be responsible for your own tax liability that may arise as a result of this investment or the transactions contemplated by this Agreement.

13. UNSECURED OBLIGATION. Your Award is unfunded, and as a holder of a vested Award, you shall be considered an unsecured creditor of the Company with respect to the Company's obligation, if any, to issue shares or other property pursuant to this Agreement. You shall not have voting or any other rights as a stockholder of the Company with respect to the shares to be issued pursuant to this Agreement until such shares are issued to you pursuant to Section 6 of this Agreement. Upon such issuance, you will obtain full voting and other rights as a stockholder of the Company. Nothing contained in this Agreement, and no action taken pursuant to its provisions, shall create or be construed to create a trust of any kind or a fiduciary relationship between you and the Company or any other person.

14. NOTICES. Any notice or request required or permitted hereunder shall be given in writing to each of the other parties hereto and shall be deemed effectively given on the earlier of (i) the date of personal delivery, including delivery by express courier, or delivery via electronic means, or (ii) the date that is five (5) days after deposit in the United States Post Office (whether or not actually received by the addressee), by registered or certified mail with postage and fees prepaid, addressed at the following addresses, or at such other address(es) as a party may designate by ten (10) days' advance written notice to each of the other parties hereto:

COMPANY:	FibroGen, Inc. Attn: General Counsel 409 Illinois Street San Francisco, CA 94158
PARTICIPANT:	Your address as on file with the Company at the time notice is given

15. HEADINGS. The headings of the Sections in this Agreement are inserted for convenience only and shall not be deemed to constitute a part of this Agreement or to affect the meaning of this Agreement.

16. MISCELLANEOUS.

(a) The rights and obligations of the Company under your Award shall be transferable by the Company to any one or more persons or entities, and all covenants and agreements hereunder shall inure to the benefit of, and be enforceable by, the Company's successors and assigns.

(b) You agree upon request to execute any further documents or instruments necessary or desirable in the sole determination of the Company to carry out the purposes or intent of your Award.

(c) You acknowledge and agree that you have reviewed your Award in its entirety, have had an opportunity to obtain the advice of counsel prior to executing and accepting your Award and fully understand all provisions of your Award.

(d) This Agreement shall be subject to all applicable laws, rules, and regulations, and to such approvals by any governmental agencies or national securities exchanges as may be required.

(e) All obligations of the Company under the Plan and this Agreement shall be binding on any successor to the Company, whether the existence of such successor is the result of a direct or indirect purchase, merger, consolidation, or otherwise, of all or substantially all of the business and/or assets of the Company.

17. GOVERNING PLAN DOCUMENT. Your Award is subject to all the provisions of the Plan, the provisions of which are hereby made a part of your Award, and is further subject to all interpretations, amendments, rules and regulations which may from time to time be promulgated and adopted pursuant to the Plan. Your Award (and any compensation paid or shares issued under your Award) is subject to recoupment in accordance with The Dodd–Frank Wall Street Reform and Consumer Protection Act and any implementing regulations thereunder, any clawback policy adopted by the Company and any compensation recovery policy otherwise required by applicable law. No recovery of compensation under such a clawback policy will be an event giving rise to a right to voluntarily terminate employment upon a resignation for "good reason," or for a "constructive termination" or any similar term under any plan of or agreement with the Company.

18. EFFECT ON OTHER EMPLOYEE BENEFIT PLANS. The value of the Award subject to this Agreement shall not be included as compensation, earnings, salaries, or other similar terms used when calculating benefits under any employee benefit plan (other than the Plan) sponsored by the Company or any Affiliate except as such plan otherwise expressly provides. The Company expressly reserves its rights to amend, modify, or terminate any or all of the employee benefit plans of the Company or any Affiliate.

19. CHOICE OF LAW. The interpretation, performance and enforcement of this Agreement shall be governed by the law of the State of Delaware without regard to that state's conflicts of laws rules.

20. SEVERABILITY. If all or any part of this Agreement or the Plan is declared by any court or governmental authority to be unlawful or invalid, such unlawfulness or invalidity shall not invalidate any portion of this Agreement or the Plan not declared to be unlawful or invalid. Any Section of this Agreement (or part of such a Section) so declared to be unlawful or invalid shall, if possible, be construed in a manner which will give effect to the terms of such Section or part of a Section to the fullest extent possible while remaining lawful and valid.

21. OTHER DOCUMENTS. You hereby acknowledge receipt or the right to receive a document providing the information required by Rule 428(b)(1) promulgated under the Securities Act. In addition, you acknowledge receipt of the Company's Policy.

22. AMENDMENT. This Agreement may not be modified, amended or terminated except by an instrument in writing, signed by you and by a duly authorized representative of the Company. Notwithstanding the foregoing, this Agreement may be amended solely by the Board by a writing which specifically states that it is amending this Agreement, so long as a copy of such amendment is delivered to you, and provided that, except as otherwise expressly provided in the Plan, no such amendment materially adversely affecting your rights hereunder may be made without your written consent. Without limiting the foregoing, the Board reserves the right to change, by written notice to you, the provisions of this Agreement in any way it may deem necessary or advisable to carry out the purpose of the Award as a result of any change in applicable laws or regulations or any future law, regulation, ruling, or judicial decision, provided that any such change shall be applicable only to rights relating to that portion of the Award which is then subject to restrictions as provided herein.

23. COMPLIANCE WITH SECTION 409A OF THE CODE. This Award is intended to comply with the "short-term deferral" rule set forth in Treasury Regulation Section 1.409A-1(b)(4). Notwithstanding the foregoing, if it is determined that the Award fails to satisfy the requirements of the short-term deferral rule and is otherwise deferred compensation subject to Section 409A, and if you are a "Specified Employee" (within the meaning set forth in Section 409A(a)(2)(B)(i) of the Code) as of the date of your "separation from service" (within the meaning of Treasury Regulation Section 1.409A-1(h) and without regard to any alternative definition thereunder), then the issuance of any shares that would otherwise be made upon the date of the separation from service or within the first six (6) months thereafter will not be made on the originally scheduled date(s) and will instead be issued in a lump sum on the date that is six (6) months and one day after the date of the separation from service (or the date of your death, if earlier), with the balance of the shares issued thereafter in accordance with the original vesting and issuance schedule set forth above, but if and only if such delay in the issuance of the shares is necessary to avoid the imposition of adverse taxation on you in respect of the shares under Section 409A of the Code. Each installment of shares that vests is intended to constitute a "separate payment" for purposes of Treasury Regulation Section 1.409A-2(b)(2).

* * * * *

This Restricted Stock Unit Award Agreement shall be deemed to be signed by the Company and the Participant upon the signing by the Participant of the Restricted Stock Unit Grant Notice to which it is attached.

FIBROGEN, INC.

2014 EMPLOYEE STOCK PURCHASE PLAN
ADOPTED BY THE BOARD OF DIRECTORS: SEPTEMBER 09, 2014
APPROVED BY THE STOCKHOLDERS: SEPTEMBER 30, 2014

1. GENERAL; PURPOSE.

(a) The Plan provides a means by which Eligible Employees of the Company and certain designated Related Corporations may be given an opportunity to purchase shares of Common Stock. The Plan permits the Company to grant a series of Purchase Rights to Eligible Employees under an Employee Stock Purchase Plan.

(b) The Company, by means of the Plan, seeks to retain the services of such Employees, to secure and retain the services of new Employees and to provide incentives for such persons to exert maximum efforts for the success of the Company and its Related Corporations.

2. ADMINISTRATION.

(a) The Board will administer the Plan unless and until the Board delegates administration of the Plan to a Committee or Committees, as provided in Section 2(c).

(b) The Board will have the power, subject to, and within the limitations of, the express provisions of the Plan:

(i) To determine how and when Purchase Rights will be granted and the provisions of each Offering (which need not be identical).

(ii) To designate from time to time which Related Corporations of the Company will be eligible to participate in the Plan.

(iii) To construe and interpret the Plan and Purchase Rights, and to establish, amend and revoke rules and regulations for its administration. The Board, in the exercise of this power, may correct any defect, omission or inconsistency in the Plan, in a manner and to the extent it deems necessary or expedient to make the Plan fully effective.

(iv) To settle all controversies regarding the Plan and Purchase Rights granted under the Plan.

(v) To suspend or terminate the Plan at any time as provided in Section 12.

(vi) To amend the Plan at any time as provided in Section 12.

(vii) Generally, to exercise such powers and to perform such acts as it deems necessary or expedient to promote the best interests of the Company and its Related Corporations and to carry out the intent that the Plan be treated as an Employee Stock Purchase Plan.

(viii) To adopt such procedures and sub-plans as are necessary or appropriate to permit participation in the Plan by Employees who are foreign nationals or employed outside the United States.

(c) The Board may delegate some or all of the administration of the Plan to a Committee or Committees. If administration is delegated to a Committee, the Committee will have, in connection with the administration of the Plan, the powers theretofore possessed by the Board that have been delegated to the Committee, including the power to delegate to a subcommittee any of the administrative powers the Committee is authorized to exercise (and references in this Plan to the Board will thereafter be to the Committee or subcommittee), subject, however, to such resolutions, not inconsistent with the provisions of the Plan, as may be adopted from time to time by the Board. The Board may retain the authority to concurrently administer the Plan with the Committee and may, at any time, revest in the Board some or all of the powers previously delegated. Whether or not the Board has delegated administration of the Plan to a Committee, the Board will have the final power to determine all questions of policy and expediency that may arise in the administration of the Plan.

(d) All determinations, interpretations and constructions made by the Board in good faith will not be subject to review by any person and will be final, binding and conclusive on all persons.

3. SHARES OF COMMON STOCK SUBJECT TO THE PLAN.

(a) Subject to the provisions of Section 11(a) relating to Capitalization Adjustments, the maximum number of shares of Common Stock that may be issued under the Plan will not exceed 1,600,000[1] shares of Common Stock, plus the number of shares of Common Stock that are automatically added on January 1 of each year, commencing on (and including) January 1, 2016 and ending on (and including) January 1, 2024, in an amount equal to the lesser of (i) 1.0% of the total number of shares of Capital Stock outstanding on December 31 of the preceding fiscal year, and (ii) 1,200,000[2] shares of Common Stock. Notwithstanding the foregoing, the Board may act prior to the first day of any fiscal year to provide that there will be no January 1 increase in the share reserve for such fiscal year or that the increase in the share reserve for such fiscal year will be a lesser number of shares of Common Stock than would otherwise occur pursuant to the preceding sentence.

(b) If any Purchase Right granted under the Plan terminates without having been exercised in full, the shares of Common Stock not purchased under such Purchase Right will again become available for issuance under the Plan.

(c) The stock purchasable under the Plan will be shares of authorized but unissued or reacquired Common Stock, including shares repurchased by the Company on the open market.

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1 The share limit was adjusted from 4,000,000 to 1,600,000 pursuant to the 1-for-2.5 reverse split of the Company's Common Stock, effective November 10, 2014.

2 The share limit was adjusted from 3,000,000 to 1,200,000 pursuant to the 1-for-2.5 reverse split of the Company's Common Stock, effective November 10, 2014.

4. GRANT OF PURCHASE RIGHTS; OFFERING.

(a) The Board may from time to time grant or provide for the grant of Purchase Rights to Eligible Employees under an Offering (consisting of one or more Purchase Periods) on an Offering Date or Offering Dates selected by the Board. Each Offering will be in such form and will contain such terms and conditions as the Board will deem appropriate, and will comply with the requirement of Section 423(b)(5) of the Code that all Employees granted Purchase Rights will have the same rights and privileges. The terms and conditions of an Offering shall be incorporated by reference into the Plan and treated as part of the Plan. The provisions of separate Offerings need not be identical, but each Offering will include (through incorporation of the provisions of this Plan by reference in the document comprising the Offering or otherwise) the period during which the Offering will be effective, which period will not exceed 27 months beginning with the Offering Date, and the substance of the provisions contained in Sections 5 through 8, inclusive.

(b) If a Participant has more than one Purchase Right outstanding under the Plan, unless he or she otherwise indicates in forms delivered to the Company: (i) each form will apply to all of his or her Purchase Rights under the Plan, and (ii) a Purchase Right with a lower exercise price (or an earlier-granted Purchase Right, if different Purchase Rights have identical exercise prices) will be exercised to the fullest possible extent before a Purchase Right with a higher exercise price (or a later-granted Purchase Right if different Purchase Rights have identical exercise prices) will be exercised.

(c) The Board will have the discretion to structure an Offering so that if the Fair Market Value of a share of Common Stock on the first Trading Day of a new Purchase Period within that Offering is less than or equal to the Fair Market Value of a share of Common Stock on the Offering Date for that Offering, then (i) that Offering will terminate immediately as of that first Trading Day, and (ii) the Participants in such terminated Offering will be automatically enrolled in a new Offering beginning on the first Trading Day of such new Purchase Period.

5. ELIGIBILITY.

(a) Purchase Rights may be granted only to Employees of the Company or, as the Board may designate in accordance with Section 2(b), to Employees of a Related Corporation. Except as provided in Section 5(b), an Employee will not be eligible to be granted Purchase Rights unless, on the Offering Date, the Employee has been in the employ of the Company or the Related Corporation, as the case may be, for such continuous period preceding such Offering Date as the Board may require, but in no event will the required period of continuous employment be equal to or greater than two years. In addition, the Board may provide that no Employee will be eligible to be granted Purchase Rights under the Plan unless, on the Offering Date, such Employee's customary employment with the Company or the Related Corporation is more than 20 hours per week and more than five months per calendar year or such other criteria as the Board may determine consistent with Section 423 of the Code.

(b) The Board may provide that each person who, during the course of an Offering, first becomes an Eligible Employee will, on a date or dates specified in the Offering which coincides with the day on which such person becomes an Eligible Employee or which occurs

thereafter, receive a Purchase Right under that Offering, which Purchase Right will thereafter be deemed to be a part of that Offering. Such Purchase Right will have the same characteristics as any Purchase Rights originally granted under that Offering, as described herein, except that:

(i) the date on which such Purchase Right is granted will be the "Offering Date" of such Purchase Right for all purposes, including determination of the exercise price of such Purchase Right;

(ii) the period of the Offering with respect to such Purchase Right will begin on its Offering Date and end coincident with the end of such Offering; and

(iii) the Board may provide that if such person first becomes an Eligible Employee within a specified period of time before the end of the Offering, he or she will not receive any Purchase Right under that Offering.

(c) No Employee will be eligible for the grant of any Purchase Rights if, immediately after any such Purchase Rights are granted, such Employee owns stock possessing five percent or more of the total combined voting power or value of all classes of stock of the Company or of any Related Corporation. For purposes of this Section 5(c), the rules of Section 424(d) of the Code will apply in determining the stock ownership of any Employee, and stock which such Employee may purchase under all outstanding Purchase Rights and options will be treated as stock owned by such Employee.

(d) As specified by Section 423(b)(8) of the Code, an Eligible Employee may be granted Purchase Rights only if such Purchase Rights, together with any other rights granted under all Employee Stock Purchase Plans of the Company and any Related Corporations, do not permit such Eligible Employee's rights to purchase stock of the Company or any Related Corporation to accrue at a rate which exceeds $25,000 of Fair Market Value of such stock (determined at the time such rights are granted, and which, with respect to the Plan, will be determined as of their respective Offering Dates) for each calendar year in which such rights are outstanding at any time.

(e) Officers of the Company and any designated Related Corporation, if they are otherwise Eligible Employees, will be eligible to participate in Offerings under the Plan. Notwithstanding the foregoing, the Board may provide in an Offering that Employees who are highly compensated Employees within the meaning of Section 423(b)(4)(D) of the Code will not be eligible to participate.

6. PURCHASE RIGHTS; PURCHASE PRICE.

(a) On each Offering Date, each Eligible Employee, pursuant to an Offering made under the Plan, will be granted a Purchase Right to purchase up to that number of shares of Common Stock purchasable either with a percentage or with a maximum dollar amount, as designated by the Board, but in either case not exceeding 15% of such Employee's earnings (as defined by the Board in each Offering) during the period that begins on the Offering Date (or such later date as the Board determines for a particular Offering) and ends on the date stated in the Offering, which date will be no later than the end of the Offering.

(b) The Board will establish one or more Purchase Dates during an Offering on which Purchase Rights granted for that Offering will be exercised and shares of Common Stock will be purchased in accordance with such Offering.

(c) In connection with each Offering made under the Plan, the Board may specify (i) a maximum number of shares of Common Stock that may be purchased by any Participant on any Purchase Date during such Offering, (ii) a maximum aggregate number of shares of Common Stock that may be purchased by all Participants pursuant to such Offering and/or (iii) a maximum aggregate number of shares of Common Stock that may be purchased by all Participants on any Purchase Date under the Offering. If the aggregate purchase of shares of Common Stock issuable upon exercise of Purchase Rights granted under the Offering would exceed any such maximum aggregate number, then, in the absence of any Board action otherwise, a pro rata (based on each Participant's accumulated Contributions) allocation of the shares of Common Stock available will be made in as nearly a uniform manner as will be practicable and equitable.

(d) The purchase price of shares of Common Stock acquired pursuant to Purchase Rights will be not less than the lesser of:

(i) an amount equal to 85% of the Fair Market Value of the shares of Common Stock on the Offering Date; and

(ii) an amount equal to 85% of the Fair Market Value of the shares of Common Stock on the applicable Purchase Date.

7. PARTICIPATION; WITHDRAWAL; TERMINATION.

(a) An Eligible Employee may elect to authorize payroll deductions as the means of making Contributions by completing and delivering to the Company, within the time specified in the Offering, an enrollment form provided by the Company. The enrollment form will specify the amount of Contributions not to exceed the maximum amount specified by the Board. Each Participant's Contributions will be credited to a bookkeeping account for such Participant under the Plan and will be deposited with the general funds of the Company except where applicable law requires that Contributions be deposited with a third party. If permitted in the Offering, a Participant may begin such Contributions with the first payroll occurring on or after the Offering Date (or, in the case of a payroll date that occurs after the end of the prior Offering but before the Offering Date of the next new Offering, Contributions from such payroll will be included in the new Offering). If permitted in the Offering, a Participant may thereafter reduce (including to zero) or increase his or her Contributions. If specifically provided in the Offering, in addition to making Contributions by payroll deductions, a Participant may make Contributions through the payment by cash or check prior to a Purchase Date.

(b) During an Offering, a Participant may cease making Contributions and withdraw from the Offering by delivering to the Company a withdrawal form provided by the Company. The Company may impose a deadline before a Purchase Date for withdrawing. Upon such withdrawal, such Participant's Purchase Right in that Offering will immediately terminate and the Company will distribute to such Participant all of his or her accumulated but unused

Contributions and such Participant's Purchase Right in that Offering shall thereupon terminate. A Participant's withdrawal from that Offering will have no effect upon his or her eligibility to participate in any other Offerings under the Plan, but such Participant will be required to deliver a new enrollment form to participate in subsequent Offerings.

(c) Purchase Rights granted pursuant to any Offering under the Plan will terminate immediately if the Participant either (i) is no longer an Employee for any reason or for no reason (subject to any post-employment participation period required by law) or (ii) is otherwise no longer eligible to participate. The Company will distribute to such individual all of his or her accumulated but unused Contributions.

(d) During a Participant's lifetime, Purchase Rights will be exercisable only by such Participant. Purchase Rights are not transferable by a Participant, except by will, by the laws of descent and distribution, or, if permitted by the Company, by a beneficiary designation as described in Section 10.

(e) Unless otherwise specified in the Offering, the Company will have no obligation to pay interest on Contributions.

8. EXERCISE OF PURCHASE RIGHTS.

(a) On each Purchase Date, each Participant's accumulated Contributions will be applied to the purchase of shares of Common Stock, up to the maximum number of shares of Common Stock permitted by the Plan and the applicable Offering, at the purchase price specified in the Offering. No fractional shares will be issued unless specifically provided for in the Offering.

(b) If any amount of accumulated Contributions remains in a Participant's account after the purchase of shares of Common Stock and such remaining amount is less than the amount required to purchase one share of Common Stock on the final Purchase Date of an Offering, then such remaining amount will be held in such Participant's account for the purchase of shares of Common Stock under the next Offering under the Plan, unless such Participant withdraws from or is not eligible to participate in such Offering, in which case such amount will be distributed to such Participant after the final Purchase Date, without interest. If the amount of Contributions remaining in a Participant's account after the purchase of shares of Common Stock is at least equal to the amount required to purchase one whole share of Common Stock on the final Purchase Date of an Offering, then such remaining amount will not roll over to the next Offering and will instead be distributed in full to such Participant after the final Purchase Date of such Offering without interest.

(c) No Purchase Rights may be exercised to any extent unless the shares of Common Stock to be issued upon such exercise under the Plan are covered by an effective registration statement pursuant to the Securities Act and the Plan is in material compliance with all applicable federal, state, foreign and other securities and other laws applicable to the Plan. If on a Purchase Date the shares of Common Stock are not so registered or the Plan is not in such compliance, no Purchase Rights will be exercised on such Purchase Date, and the Purchase Date will be delayed until the shares of Common Stock are subject to such an effective registration

statement and the Plan is in material compliance, except that the Purchase Date will in no event be more than 6 months from the Offering Date. If, on the Purchase Date, as delayed to the maximum extent permissible, the shares of Common Stock are not registered and the Plan is not in material compliance with all applicable laws, no Purchase Rights will be exercised and all accumulated but unused Contributions will be distributed to the Participants without interest.

9. COVENANTS OF THE COMPANY.

The Company will seek to obtain from each federal, state, foreign or other regulatory commission or agency having jurisdiction over the Plan such authority as may be required to grant Purchase Rights and issue and sell shares of Common Stock thereunder. If, after commercially reasonable efforts, the Company is unable to obtain the authority that counsel for the Company deems necessary for the grant of Purchase Rights or the lawful issuance and sale of Common Stock under the Plan, and at a commercially reasonable cost, the Company will be relieved from any liability for failure to grant Purchase Rights and/or to issue and sell Common Stock upon exercise of such Purchase Rights.

10. DESIGNATION OF BENEFICIARY.

(a) The Company may, but is not obligated to, permit a Participant to submit a form designating a beneficiary who will receive any shares of Common Stock and/or Contributions from the Participant's account under the Plan if the Participant dies before such shares and/or Contributions are delivered to the Participant. The Company may, but is not obligated to, permit the Participant to change such designation of beneficiary. Any such designation and/or change must be on a form approved by the Company.

(b) If a Participant dies, in the absence of a valid beneficiary designation, the Company will deliver any shares of Common Stock and/or Contributions to the executor or administrator of the estate of the Participant. If, to the knowledge of the Company, no executor or administrator has been appointed, the Company, in its sole discretion, may deliver such shares of Common Stock and/or Contributions to the Participant's spouse, dependents or relatives, or if no spouse, dependent or relative is known to the Company, then to such other person as the Company may designate.

11. ADJUSTMENTS UPON CHANGES IN COMMON STOCK; CORPORATE TRANSACTIONS.

(a) In the event of a Capitalization Adjustment, the Board will appropriately and proportionately adjust: (i) the class(es) and maximum number of securities subject to the Plan pursuant to Section 3(a), (ii) the class(es) and maximum number of securities by which the share reserve is to increase automatically each year pursuant to Section 3(a), (iii) the class(es) and number of securities subject to, and the purchase price applicable to outstanding Offerings and Purchase Rights, and (iv) the class(es) and number of securities that are the subject of the purchase limits under each ongoing Offering. The Board will make these adjustments, and its determination will be final, binding and conclusive.

(b) In the event of a Corporate Transaction, then: (i) any surviving corporation or acquiring corporation (or the surviving or acquiring corporation's parent company) may assume or continue outstanding Purchase Rights or may substitute similar rights (including a right to

acquire the same consideration paid to the stockholders in the Corporate Transaction) for outstanding Purchase Rights, or (ii) if any surviving or acquiring corporation (or its parent company) does not assume or continue such Purchase Rights or does not substitute similar rights for such Purchase Rights, then the Participants' accumulated Contributions will be used to purchase shares of Common Stock within ten business days prior to the Corporate Transaction under the outstanding Purchase Rights, and the Purchase Rights will terminate immediately after such purchase.

12. AMENDMENT, TERMINATION OR SUSPENSION OF THE PLAN.

(a) The Board may amend the Plan at any time in any respect the Board deems necessary or advisable. However, except as provided in Section 11(a) relating to Capitalization Adjustments, stockholder approval will be required for any amendment of the Plan for which stockholder approval is required by applicable law or listing requirements, including any amendment that either (i) materially increases the number of shares of Common Stock available for issuance under the Plan, (ii) materially expands the class of individuals eligible to become Participants and receive Purchase Rights, (iii) materially increases the benefits accruing to Participants under the Plan or materially reduces the price at which shares of Common Stock may be purchased under the Plan, (iv) materially extends the term of the Plan, or (v) expands the types of awards available for issuance under the Plan, but in each of (i) through (v) above only to the extent stockholder approval is required by applicable law or listing requirements.

(b) The Board may suspend or terminate the Plan at any time. No Purchase Rights may be granted under the Plan while the Plan is suspended or after it is terminated.

(c) Any benefits, privileges, entitlements and obligations under any outstanding Purchase Rights granted before an amendment, suspension or termination of the Plan will not be materially impaired by any such amendment, suspension or termination except (i) with the consent of the person to whom such Purchase Rights were granted, (ii) as necessary to comply with any laws, listing requirements, or governmental regulations (including, without limitation, the provisions of Section 423 of the Code and the regulations and other interpretive guidance issued thereunder relating to Employee Stock Purchase Plans) including without limitation any such regulations or other guidance that may be issued or amended after the date the Plan is adopted by the Board, or (iii) as necessary to obtain or maintain favorable tax, listing, or regulatory treatment. To be clear, the Board may amend outstanding Purchase Rights without a Participant's consent if such amendment is necessary to ensure that the Purchase Right and/or the Plan complies with the requirements of Section 423 of the Code.

13. EFFECTIVE DATE OF PLAN.

The Plan will become effective immediately prior to and contingent upon the IPO Date. No Purchase Rights will be exercised unless and until the Plan has been approved by the stockholders of the Company, which approval must be within 12 months before or after the date the Plan is adopted (or if required under Section 12(a) above, materially amended) by the Board.

14. MISCELLANEOUS PROVISIONS.

(a) Proceeds from the sale of shares of Common Stock pursuant to Purchase Rights will constitute general funds of the Company.

(b) A Participant will not be deemed to be the holder of, or to have any of the rights of a holder with respect to, shares of Common Stock subject to Purchase Rights unless and until the Participant's shares of Common Stock acquired upon exercise of Purchase Rights are recorded in the books of the Company (or its transfer agent).

(c) The Plan and Offering do not constitute an employment contract. Nothing in the Plan or in the Offering will in any way alter the at will nature of a Participant's employment or be deemed to create in any way whatsoever any obligation on the part of any Participant to continue in the employ of the Company or a Related Corporation, or on the part of the Company or a Related Corporation to continue the employment of a Participant.

(d) The provisions of the Plan will be governed by the laws of the State of California without resort to that state's conflicts of laws rules.

15. DEFINITIONS.

As used in the Plan, the following definitions will apply to the capitalized terms indicated below:

(a) "***Board***" means the Board of Directors of the Company.

(b) "***Capital Stock***" means each and every class of common stock of the Company, regardless of the number of votes per share.

(c) "***Capitalization Adjustment***" means any change that is made in, or other events that occur with respect to, the Common Stock subject to the Plan or subject to any Purchase Right after the date the Plan is adopted by the Board without the receipt of consideration by the Company through merger, consolidation, reorganization, recapitalization, reincorporation, stock dividend, dividend in property other than cash, large nonrecurring cash dividend, stock split, liquidating dividend, combination of shares, exchange of shares, change in corporate structure or other similar equity restructuring transaction, as that term is used in Financial Accounting Standards Board Accounting Standards Codification Topic 718 (or any successor thereto). Notwithstanding the foregoing, the conversion of any convertible securities of the Company will not be treated as a Capitalization Adjustment.

(d) "***Code***" means the Internal Revenue Code of 1986, as amended, including any applicable regulations and guidance thereunder.

(e) "***Committee***" means a committee of one or more members of the Board to whom authority has been delegated by the Board in accordance with Section 2(c).

(f) "***Common Stock***" means, as of the IPO Date, the common stock of the Company.

(g) "***Company***" means FibroGen, Inc., a Delaware corporation.

(h) ***"Contributions***" means the payroll deductions and other additional payments specifically provided for in the Offering that a Participant contributes to fund the exercise of a Purchase Right. A Participant may make additional payments into his or her account if specifically provided for in the Offering, and then only if the Participant has not already had the maximum permitted amount withheld during the Offering through payroll deductions.

(i) "***Corporate Transaction***" means the consummation, in a single transaction or in a series of related transactions, of any one or more of the following events:

(i) a sale or other disposition of all or substantially all, as determined by the Board in its sole discretion, of the consolidated assets of the Company and its Subsidiaries;

(ii) a sale or other disposition of at least 90% of the outstanding securities of the Company;

(iii) a merger, consolidation or similar transaction following which the Company is not the surviving corporation; or

(iv) a merger, consolidation or similar transaction following which the Company is the surviving corporation but the shares of Common Stock outstanding immediately preceding the merger, consolidation or similar transaction are converted or exchanged by virtue of the merger, consolidation or similar transaction into other property, whether in the form of securities, cash or otherwise.

(j) "***Director***" means a member of the Board.

(k) "***Eligible Employee***" means an Employee who meets the requirements set forth in the document(s) governing the Offering for eligibility to participate in the Offering, provided that such Employee also meets the requirements for eligibility to participate set forth in the Plan.

(l) "***Employee***" means any person, including an Officer or Director, who is "employed" for purposes of Section 423(b)(4) of the Code by the Company or a Related Corporation. However, service solely as a Director, or payment of a fee for such services, will not cause a Director to be considered an "Employee" for purposes of the Plan.

(m) "***Employee Stock Purchase Plan***" means a plan that grants Purchase Rights intended to be options issued under an "employee stock purchase plan," as that term is defined in Section 423(b) of the Code.

(n) "***Exchange Act***" means the Securities Exchange Act of 1934, as amended and the rules and regulations promulgated thereunder.

(o) "***Fair Market Value***" means, as of any date, the value of the Common Stock determined as follows:

(i) If the Common Stock is listed on any established stock exchange or traded on any established market, the Fair Market Value of a share of Common Stock will be the closing sales price for such stock as quoted on such exchange or market (or the exchange or market with the greatest volume of trading in the Common Stock) on the date of determination, as reported in such source as the Board deems reliable. Unless otherwise provided by the Board, if there is no closing sales price for the Common Stock on the date of determination, then the Fair Market Value will be the closing sales price on the last preceding date for which such quotation exists.

(ii) In the absence of such markets for the Common Stock, the Fair Market Value will be determined by the Board in good faith in compliance with applicable laws and in a manner that complies with Sections 409A of the Code.

(iii) Notwithstanding the foregoing, for any Offering that commences on the IPO Date, the Fair Market Value of the shares of Common Stock on the Offering Date will be the price per share at which shares are first sold to the public in the Company's initial public offering as specified in the final prospectus for that initial public offering.

(p) "***IPO Date***" means the date of the underwriting agreement between the Company and the underwriter(s) managing the initial public offering of the Common Stock, pursuant to which the Common Stock is priced for the initial public offering.

(q) "***Offering***" means the grant to Eligible Employees of Purchase Rights, with the exercise of those Purchase Rights automatically occurring at the end of one or more Purchase Periods. The terms and conditions of an Offering will generally be set forth in the "***Offering Document***" approved by the Board for that Offering.

(r) "***Offering Date***" means a date selected by the Board for an Offering to commence.

(s) "***Officer***" means a person who is an officer of the Company or a Related Corporation within the meaning of Section 16 of the Exchange Act.

(t) "***Participant***" means an Eligible Employee who holds an outstanding Purchase Right.

(u) "***Plan***" means this FibroGen, Inc. 2014 Employee Stock Purchase Plan.

(v) "***Purchase Date***" means one or more dates during an Offering selected by the Board on which Purchase Rights will be exercised and on which purchases of shares of Common Stock will be carried out in accordance with such Offering.

(w) "***Purchase Period***" means a period of time specified within an Offering, generally beginning on the Offering Date or on the first Trading Day following a Purchase Date, and ending on a Purchase Date. An Offering may consist of one or more Purchase Periods.

(x) "***Purchase Right***" means an option to purchase shares of Common Stock granted pursuant to the Plan.

(y) "***Related Corporation***" means any "parent corporation" or "subsidiary corporation" of the Company whether now or subsequently established, as those terms are defined in Sections 424(e) and (f), respectively, of the Code.

(z) "***Securities Act***" means the Securities Act of 1933, as amended.

(aa) "***Trading Day***" means any day on which the exchange(s) or market(s) on which shares of Common Stock are listed, including but not limited to the NYSE, Nasdaq Global Select Market, the Nasdaq Global Market, the Nasdaq Capital Market or any successors thereto, is open for trading.

[*] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed separately with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

Exhibit 10.18

AMENDED AND RESTATED

LICENSE, DEVELOPMENT AND COMMERCIALIZATION AGREEMENT

(for the US and Certain Other Territories)

between

FIBROGEN, INC.

and

ASTRAZENECA AB

TABLE OF CONTENTS

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AMENDED AND RESTATED

LICENSE, DEVELOPMENT AND COMMERCIALIZATION AGREEMENT

THIS AMENDED AND RESTATED LICENSE, DEVELOPMENT AND COMMERCIALIZATION AGREEMENT (the "***Agreement***") is entered into as of October 16, 2014 (the "***Execution Date***"), and effective as of July 30, 2013 (the "***Effective Date***") by and between **FIBROGEN, INC.**, a Delaware corporation having its principal place of business at 409 Illinois St., San Francisco, California 94158, United States ("***FibroGen***") and **ASTRAZENECA AB**, a company incorporated in Sweden under no. 556011-7482 with offices at Pepparedsleden 1, 431 83 Mölndal, Gothenburg, Sweden ("***AstraZeneca***"). FibroGen and AstraZeneca are sometimes referred to herein individually as a "***Party***" and collectively as the "***Parties***".

BACKGROUND

A. AstraZeneca is a fully-integrated, global pharmaceutical company with expertise in the research, development, manufacture and commercialization of human therapeutic products.

B. FibroGen is a biotechnology company with expertise in the discovery, research, development and manufacture of small molecule prolyl hydroxylase inhibitors that modulate hypoxia-inducible factor for the treatment of anemia.

C. FibroGen is developing certain of such compounds in collaboration with Astellas Pharma Inc. ("***Astellas***"), its exclusive licensee for Japan, Europe, the Commonwealth of Independent States (CIS), the Middle East and South Africa pursuant to certain collaboration agreements between FibroGen and Astellas (collectively, the "***Astellas Collaboration***").

D. AstraZeneca and FibroGen desire to establish as of Effective Date a collaboration for the joint continued development, including regulatory submission, and, if successful, commercialization of certain of such compounds in the U.S. and all countries of the world other than those subject to the existing Astellas Collaboration.

E. With respect to the collaboration between the Parties in China, the development and commercialization activities are governed by that certain License, Development and Commercialization Agreement (China) by and between FibroGen China Anemia Holdings, Ltd., Beijing FibroGen Medical Technology Development Co., Ltd., and FibroGen International (Hong Kong) Limited, Affiliates of FibroGen, and AstraZeneca, of even date herewith (the "***China Agreement***"), except that a portion of the governance structure for China shall be as set forth in this Agreement, and the Parties' activities with respect to all other countries not licensed to Astellas are governed by this Agreement.

NOW, THEREFORE, in consideration of the foregoing premises and the mutual promises, covenants and conditions contained in this Agreement, the Parties agree as follows:

ARTICLE 1

DEFINITIONS

As used in this Agreement, the following initially capitalized terms, whether used in the singular or plural form, shall have the meanings set forth in this Article 1. Except where the context otherwise requires, the use of any gender shall be applicable to all genders and the word "or" is used in the inclusive sense (and/or). Whenever this Agreement refers to a number of days, unless otherwise specified, such number refers to calendar days. In addition, the terms "includes," "including," "include" and derivative forms of them shall be deemed followed by the phrase "without limitation" (regardless of whether it is actually written there (and drawing no implication from the actual inclusion of such phrase in some instances after such terms but not others)).

1.1 "***Acquiror***" has the meaning set forth in Section 15.5.

1.2 "***Affiliate***" means, with respect to a particular Party, a person, corporation, partnership, or other entity that controls, is controlled by or is under common control with such Party. For the purposes of this definition, the word "control" (including, with correlative meaning, the terms "controlled by" or "under the common control with") means the actual power, either directly or indirectly through one or more intermediaries, to direct or cause the direction of the management and policies of such entity, whether by the ownership of more than fifty percent (50%) of the voting stock of such entity, or by contract or otherwise.

1.3 "***Alliance Manager***" has the meaning set forth in Section 2.7.

1.4 "***Annual Net Sales***" means the Net Sales made during any given Calendar Year.

1.5 "***Anti-Corruption Laws***" means the U.S. Foreign Corrupt Practices Act, as amended, the UK Bribery Act 2010, as amended, and any other applicable anti-corruption laws and laws for the prevention of fraud, racketeering, money laundering or terrorism.

1.6 "***Astellas***" has the meaning set forth in Section C on the first page.

1.7 "***Astellas Agreements***" means the Astellas EU Agreement and the Astellas Japan Agreement.

1.8 "***Astellas Collaboration***" has the meaning set forth in Section C on the first page.

1.9 "***Astellas EU Agreement***" means the Anemia License and Collaboration Agreement between FibroGen and Astellas with respect to the countries listed on **Exhibit A** (other than Japan) effective April 28, 2006, as amended from time to time.

1.10 "***Astellas Japan Agreement***" means the Collaboration Agreement between FibroGen and Astellas with respect to Japan effective June 1, 2005, as amended from time to time.

1.11 "***AstraZeneca Inventions***" has the meaning set forth in Section 7.8(d).

1.12 "***AstraZeneca Know-How***" means all Information Controlled as of the Effective Date or thereafter during the Term by AstraZeneca and/or its Affiliate(s) that is reasonably necessary or useful for the research, development, manufacture, use, importation or sale of Products in the Field. For clarity, the use of "Affiliate" in this definition shall exclude any Third Party that becomes an Affiliate due to such Third Party's acquisition of or by AstraZeneca, except as provided in Section 15.5. For additional clarity, AstraZeneca Know-How shall exclude rights under any AstraZeneca Patents and AstraZeneca's interest in the Joint Patents and Joint Inventions.

1.13 "***AstraZeneca Patents***" means all Patents that are Controlled as of the Effective Date or thereafter during the Term by AstraZeneca and/or its Affiliate(s) and that claim the composition of matter, manufacture or use of one or more Collaboration Compounds or Products or that would otherwise be infringed (or with respect to patent applications, would be infringed if issued or granted with the then-currently pending claims), absent a license, by the manufacture, use or sale of any Collaboration Compounds or Product. For clarity, the use of "Affiliate" in this definition shall exclude any Third Party that becomes an Affiliate due to such Third Party's acquisition of or by, AstraZeneca except as provided in Section 15.5.

1.14 "***AstraZeneca Anti-Corruption Rules and Policies***" means the key principles from AstraZeneca's ABAC and External Interactions Policies regarding anti-bribery and corruption issues, attached as **Exhibit F** to this Agreement, as the same may be amended, modified or supplemented from time to time as notified by AstraZeneca to FibroGen.

1.15 "***AstraZeneca Technology***" means the AstraZeneca Patents, AstraZeneca Know-How, and AstraZeneca's interest in Joint Patents and Joint Inventions.

1.16 "***Bankrupt Party***" has the meaning set forth in Section 13.9(b).

1.17 "***Business Day***" means a day other than a Saturday, Sunday or bank or other public holiday in San Francisco, California, the UK or Sweden.

1.18 "***Calendar Quarter***" means each successive period of three (3) calendar months commencing on January 1, April 1, July 1 and October 1.

1.19 "***Calendar Year***" means each successive period of twelve (12) calendar months commencing on January 1.

1.20 "***Carcinogenicity Studies***" means the following carcinogenicity studies in rats and mice: (1) [*].

1.21 "***China Agreement***" has the meaning set forth in Section E on the first page.

1.22 "***China Committee***" means the governing committee established under the China Agreement, and any successor or other committee or governing body that serves the same functions under the China Agreement.

1.23 "***CKD Indications***" means (a) treatment of anemia in patients with chronic kidney disease undergoing dialysis, and (b) treatment of anemia in patients with chronic kidney disease not undergoing dialysis.

1.24 "***Clinical Trial***" means any human clinical trial of a Product.

1.25 "***Co-Commercialization Agreement***" has the meaning set forth in Section 5.10.

1.26 "***Collaboration***" has the meaning set forth in Section 2.1.

1.27 "***Collaboration Compound***" means any of the following: (a) FG-4592, (b) any HIF Compound (other than FG-4592) that is added to this Agreement pursuant to Section 3.6, and (c) any salts, esters, complexes, chelates, crystalline and amorphous morphic forms, pegylated forms, enantiomers (excluding regioisomers), prodrugs, solvates, metabolites and catabolites of any of the foregoing ((a) or (b)).

1.28 "***Collaboration Inventions***" has the meaning set forth in Section 9.2.

1.29 "***Combination Product***" means a Product that is comprised of or contains a Collaboration Compound as an active ingredient together with one (1) or more other active ingredients and is sold either as a fixed dose/unit or as separate doses/units in a single package.

1.30 "***Commercialization***" means the commercial manufacture, marketing, promotion, sale and/or distribution of Products in the Territory. Commercialization includes commercial activities conducted in preparation for Product launch in each indication. "***Commercialize***" has a correlative meaning.

1.31 "***Commercialization Costs***" means all costs incurred by or on behalf of FibroGen that are directly and reasonably allocable to the conduct of activities allocated to FibroGen under the U.S. Commercialization Plan or Co-Commercialization Agreement for the Commercialization of Products in the U.S.

1.32 "***Commercially Reasonable Efforts***" means, with respect to a Party's obligations under this Agreement to Develop or Commercialize a Product, the carrying out of such obligations or tasks with a level of efforts and resources consistent with the commercially reasonable practices of (a) in the case of AstraZeneca, a pharmaceutical company the size and geographical scope of AstraZeneca and (b) in the case of FibroGen, a biotechnology company the size and geographical scope of FibroGen, in each case (a) and (b) for the development or commercialization of similarly situated pharmaceutical products as such Product and at a similar stage of development or commercialization, taking into consideration their safety and efficacy, their cost to develop, the nature and extent of their market exclusivity (including patent coverage and regulatory exclusivity), the likelihood of Regulatory Approval, their expected profitability, including the amounts of marketing and promotional expenditures with respect to such products and generic products, and the competitiveness of alternative compounds and products. Commercially Reasonable Efforts requires that the Party: (a) promptly assign responsibility for such obligations or tasks to specific employee(s) who are held accountable for progress and monitor such progress on an on-going basis, (b) set and consistently seek to achieve specific and meaningful objectives for carrying out such obligations, and (c) consistently make and implement decisions and allocate

resources designed to advance progress with respect to such objectives. For the avoidance of doubt, the commitment to use "Commercially Reasonable Efforts" shall not preclude the suspension or discontinuance by AstraZeneca of any Product, if appropriate, based on the foregoing considerations.

1.33 "***Committee***" means the Joint Steering Committee, Joint Development Committee, Joint Commercialization Committee or IP Committee, or any other subcommittee established under Article 2, as applicable.

1.34 "***Compliance Audit***" has the meaning set forth in Section 10.3(e).

1.35 "***Confidential Information***" means, with respect to a Party, all Information of such Party that is disclosed to the other Party under this Agreement, which may include, without limitation, specifications, know-how, trade secrets, technical information, models, business information, inventions, discoveries, methods, procedures, formulae, protocols, techniques, data, and unpublished patent applications, whether disclosed in oral, written, graphic, or electronic form. All confidential Information disclosed by either Party pursuant to the Existing Confidentiality Agreement shall be deemed to be Confidential Information of the disclosing Party hereunder (with the mutual understanding and agreement that any use or disclosure thereof that is authorized under Article 12 shall not be restricted by, or be deemed a violation of, such Existing Confidentiality Agreement).

1.36 "***Control***" means, with respect to any material, Information, or intellectual property right, that a Party (a) owns such material, Information, or intellectual property right, or (b) has a license or right to use to such material, Information, or intellectual property right, in each case with the ability to grant to the other Party access, a right to use, or a license, or a sublicense (as applicable) to such material, Information, or intellectual property right on the terms and conditions set forth herein, without violating the terms of any agreement or other arrangement with any Third Party.

1.37 "***Core Indication***" means any of the following: (a) treatment of anemia in patients with chronic kidney disease undergoing dialysis, (b) treatment of anemia in patients with chronic kidney disease not undergoing dialysis, (c) [*]).

1.38 "***Covenant Period 1***" has the meaning set forth in Section 7.4(a)(ii).

1.39 "***Covenant Period 2***" has the meaning set forth in Section 7.4(a)(iii).

1.40 "***CPI-U***" means the Consumer Price Index for All Urban Consumers (All Items), or any successor to such published measure, not seasonally adjusted, as published by the U.S. Department of Labor Bureau of Labor Statistics.

1.41 "***Designated Indication***" has the meaning set forth in Section 3.5(a).

1.42 "***Designated Product***" has the meaning set forth in Section 8.4(a).

1.43 "***Development***" means all activities that relate to (a) obtaining, maintaining or expanding Regulatory Approval of a Product for one or more indications or (b) developing the

process for the manufacture of clinical and commercial quantities of drug substance or drug Product. This includes: (i) preclinical testing, toxicology and Clinical Trials; (ii) preparation, submission, review, statistical analysis, report writing and development of data or information for the purpose of submission to a governmental authority to obtain, maintain and/or expand Regulatory Approval of a Product, and outside counsel regulatory legal services related thereto; and (iii) manufacturing process development and scale-up for drug substance and drug product, test method development, packaging development, stability testing, qualification and validation, production of drug substance and drug product, in bulk for preclinical and clinical studies, and related quality assurance technical support activities; provided, however, that Development shall exclude Commercialization. For clarity, Development shall include those Phase 4 Clinical Trials that are included in clause (b) of the definition of Phase 4 Clinical Trials. "***Develop***" has a correlative meaning.

1.44 "***Development Budget***" means the budget associated with the activities conducted under the Development Plan for the U.S., detailing the anticipated Development Costs.

1.45 "***Development Costs***" means all costs incurred by or on behalf of FibroGen or AstraZeneca that are reasonably allocable to the Development of Products for the U.S. in accordance with the Development Plan, which shall equal the sum of (a) Personnel Costs, (b) the Fully Burdened Cost of Collaboration Compound or Product or comparator drug, concomitant drug, placebo or other materials used in any Clinical Trial or Nonclinical Studies, and (c) all other out-of-pocket costs, in each case for activities for the U.S.

1.46 "***Development Data***" has the meaning set forth in Section 3.10(a).

1.47 "***Development Plan***" means the plan for conducting collaborative Development of Products for approval and use in the U.S. and RoW, as set forth in Section 3.2(a).

1.48 "***Development Sharing Period***" means the time period commencing on August 1, 2013 and ending on the date on which the Parties have incurred two hundred thirty-three million Dollars ($233,000,000) in Development Costs.

1.49 "***Development Strategy***" has the meaning set forth in Section 3.2(c).

1.50 "***DFCI Agreement***" means the License Agreement between FibroGen and the Dana-Farber Cancer Institute, Inc. ("***DFCI***"), dated March 29, 2006, a redacted copy of which is attached hereto as **Exhibit B**.

1.51 "***Distributor***" has the meaning set forth in Section 7.3(c).

1.52 "***Dollar***" or "***$***" means United States dollar.

1.53 "***ESA Approved Indications***" means the following indications: (a) treatment of anemia in patients with chronic kidney disease undergoing dialysis, (b) treatment of anemia in patients with chronic kidney disease not undergoing dialysis, (c) [*].

1.54 "***EU***" means all of the European Union member states as of the applicable time during the Term.

1.55 "***Executive Officer***" means, in the case of AstraZeneca, AstraZeneca's Chief Executive Officer or any senior executive designated by and who reports directly to the Chief Executive Officer of AstraZeneca, and in the case of FibroGen, FibroGen's Chief Executive Officer.

1.56 "***Existing Confidentiality Agreement***" means, collectively, the Non-Disclosure Agreement between FibroGen and AstraZeneca dated June 21, 2012, as amended February 7, 2013, and May 23, 2013, and the Non-Disclosure Agreement between FibroGen and AstraZeneca dated April 1, 2013.

1.57 "***FCPA***" means the U.S. Foreign Corrupt Practices Act of 1977, as amended, including the rules and regulations thereunder.

1.58 "***FDA***" means the United States Food and Drug Administration or its successor.

1.59 "***FD&C Act***" means the United States Federal Food, Drug and Cosmetic Act, as amended.

1.60 "***FG-4592***" means the molecule with the chemical structure set forth on **Exhibit C**.

1.61 "***FibroGen IPO***" means the initial public offering of its securities by FibroGen in any of the U.S., United Kingdom, Spain, France, Italy, Germany, Japan, China or Hong Kong.

1.62 "***FibroGen Know-How***" means all Information Controlled as of the Effective Date or thereafter during the Term by FibroGen and/or its Affiliate(s) and reasonably necessary or useful for the development, manufacture, use, importation or sale of Collaboration Compounds or Products in the Field; including, without limitation, any such Information made or generated by or on behalf of FibroGen or its Affiliate in the course of performing FibroGen's obligations or exercising FibroGen's rights under this Agreement. The use of "Affiliate" in this definition shall exclude any Third Party that becomes an Affiliate due to such Third Party's acquisition of FibroGen, except as provided in Section 15.5. FibroGen Know-How shall exclude (a) rights under any FibroGen Patents and FibroGen's interest in the Joint Patents and Joint Inventions and (b) any Third Party Information that is not included pursuant to Section 8.8(d).

1.63 "***FibroGen Patents***" means (i) the Listed Patents and (ii) all other Patents (excluding any Joint Patents) that are Controlled as of the Effective Date or thereafter during the Term by FibroGen and/or its Affiliate(s) and that claim the composition of matter, manufacture or use of one or more Collaboration Compounds or Products in the Field or that would otherwise be infringed (or with respect to patent applications, would be infringed if issued or granted with the then-currently pending claims), absent a license, by the manufacture, use or sale of any Collaboration Compound or Product in the Field. The use of "Affiliate" in this definition shall exclude any Third Party that becomes an Affiliate due to such Third Party's acquisition of FibroGen except as provided in Section 15.5. FibroGen Patents does not include Third Party Patents that are not included pursuant to Section 8.8(d).

1.64 "***FibroGen Technology***" means the FibroGen Patents, FibroGen Know-How, and FibroGen's interest in Joint Patents and Joint Inventions.

1.65 "***Field***" means (a) the treatment of anemia in humans and non-human animals, which means any treatment intended to increase hemoglobin levels or utilization or to increase hematocrit, as measured by acceptable clinical parameters, including unit volume concentrations of hemoglobin, red blood cell volume, or red blood cell count, and (b) any Designated Indication added to the Field pursuant to Section 3.5. For the avoidance of doubt, the Core Indications, the ESA Approved Indications as well as the indications listed on **Exhibit D** are all included in clause (a) of the preceding sentence.

1.66 "***First Commercial Sale***" means, with respect to a Product and country in the Territory, the first arm's length sale for monetary value by AstraZeneca, its Affiliates or its Sublicensees to a Third Party intended for end use or consumption by the general public (regardless of when actual consumption occurs) of such Product in such country after Regulatory Approval (and any pricing or reimbursement approvals, if reasonably necessary to commence regular commercial sales) has been obtained in such country. For the avoidance of doubt, sales prior to receipt of Regulatory Approvals necessary to commence regular commercial sales, such as so-called "treatment IND sales", "named patient sales" or "compassionate use sales", shall not be construed as a First Commercial Sale.

1.67 "***Fully Burdened Cost***" means, with respect to a Product, all costs actually incurred by FibroGen or its Affiliates attributable and fairly allocable to produce, package and distribute the Product to AstraZeneca or its carrier [*]) for the acquisition or sale of such Product, which costs to produce and package the Product will include the direct material and labor and indirect costs (fairly allocated) that are incurred by FibroGen or its Affiliates associated with the manufacture, filling, packaging, labeling, and preparation of product for shipment and/or other preparation of such Product, as applicable, including non-refundable and non-creditable Indirect Taxes, customs fees and customs duties. Fully Burdened Cost will be determined in accordance with U.S. GAAP and will include the attributable and fairly allocable costs of facilities, labor, purchasing, depreciation of equipment, materials, payments to Third Parties for any necessary contract work for the manufacture or testing of the Product, quality assurance, quality control and other testing (including validation studies), storage (if requested by AstraZeneca), shipping and costs for distribution, and a reasonable allocation of general and administrative overhead for the manufacturing operations attributable to Product distribution to AstraZeneca. These costs shall include capacity reservation charges paid to a Third Party, and the proportion of fixed overhead allocated to total available capacity reasonably reserved for the production of a Product, less the amount included in budgeted cost of goods (budgeted capacity); provided, that FibroGen shall use good faith efforts to utilize any such reserved but unused capacity. By way of example, if fifteen percent (15%) of the total site capacity is reasonably reserved for the production of the Product and for the same period budgeted capacity is planned for only ten percent (10%) of the site, the fixed overhead related to the remaining five percent (5%) dedicated capacity shall be included in Fully Burdened Cost as reserve capacity. Costs for distribution consist of the labor, materials and reasonably allocated overhead necessary to prepare and package the final product for shipment to AstraZeneca.

1.68 "***GCP***" means the current standards for clinical trials for pharmaceuticals, as set forth in the U.S. Code of Federal Regulations, ICH guidelines and applicable regulations, laws or rules as promulgated thereunder, as amended from time to time, and such standards of good clinical practice as are required in other countries than the U.S. in which a Product is intended to be sold to the extent such standards are not less stringent than U.S. GCP.

1.69 "***Generic Product***" means, with respect to a Product and a particular country, any pharmaceutical product (a) that is sold in such country by a Third Party that is not a Sublicensee or Distributor selling such product under authorization from AstraZeneca or its Affiliates, (b) that contains the same Collaboration Compound as the relevant Product and that is in the same dosage form as such Product and for the same route of administration as such Product and is approved by the Regulatory Authority for such country for an indication for which such Product obtained Regulatory Approval in such country and (c) that is approved in reliance on the prior approval of such Product as determined by the applicable Regulatory Authority.

1.70 "***Governmental Authority***" means any multi-national, federal, state, local, municipal or other government authority of any nature (including any governmental division, subdivision, department, agency, bureau, branch, office, commission, council, court or other tribunal).

1.71 "***Government Official***" means (i) any individual or entity employed by or acting on behalf of a government, government-controlled agency or entity or public international organization, (ii) any political party, party official or candidate, (iii) any individual or entity that holds or performs the duties of an appointment, office or position created by custom or convention or (iv) any individual or entity that holds himself, herself or itself out to be the authorized intermediary of any of the foregoing.

1.72 "***HICP***" means, with respect to a country, the Harmonised Index of Consumer Prices for such country published by Eurostat.

1.73 "***HIF Compound***" means any compound that stabilizes hypoxia-inducible factor ("***HIF***") or that modulates HIF prolyl hydroxylase activity.

1.74 "***Hourly Rate***" means, as of the Effective Date, $[*], which is the blended hourly fully burdened rate for FibroGen's employees and agents conducting Development activities. The Hourly Rate will be adjusted annually as of each January 1 (commencing 2014) to reflect the percentage increase or decrease (as the case may be) from the preceding year in the average consumer price, calculated as the average of (i) the annual percentage change of US CPI-U and (ii) the average of the annual percentage changes of HICP for the 5 major EU countries (UK, France, Germany, Italy, and Spain) for such annual period, except as otherwise mutually agreed by the Parties. The Hourly Rate includes, without limitation, the following general expense categories: salaries and wages (including bonuses, moving expenses, and payroll taxes), benefits provided (including health benefits, defined contribution, defined benefit plans, vacations, etc.), direct employee costs (including recruitment costs, internal and external training costs, computer charges, automobile leases, subscriptions and reference materials, telephone, fax, cellular phone, and copy machines and related costs), and allocation of other overhead costs (including rent, insurance, and utilities).

1.75 "***IND***" means (a) an Investigational New Drug Application as defined in the FD&C Act and applicable regulations promulgated thereunder by the FDA, or (b) the equivalent

application to the equivalent Regulatory Authority in any other regulatory jurisdiction, the filing of which is necessary to initiate or conduct clinical testing of a pharmaceutical product in humans in such jurisdiction.

1.76 "***Indirect Taxes***" means VAT, sales taxes, consumption taxes and other similar taxes required by law to be disclosed on the invoice.

1.77 "***Information***" means any data, results and information of any type whatsoever, in any tangible or intangible form, including, without limitation, know-how, trade secrets, practices, techniques, methods, processes, inventions, developments, specifications, formulations, formulae, compositions of matter of any type or kind, software, algorithms, marketing reports, clinical and non-clinical study reports, regulatory submission documents and summaries, expertise, stability, technology, test data including pharmacological, biological, chemical, biochemical, toxicological and clinical test data, analytical and quality control data, stability data, studies and procedures, in all cases, patentable or otherwise.

1.78 "***Initial Development Plan***" has the meaning set forth in Section 3.2(b).

1.79 "***Inventions***" has the meaning set forth in Section 9.2.

1.80 "***IP Committee***" has the meaning set forth in Section 9.1.

1.81 "***Joint Commercialization Committee***" or "***JCC***" means the committee formed by the Parties as described in Section 2.4.

1.82 "***Joint Development Committee***" or "***JDC***" means the committee formed by the Parties as described in Section 2.3.

1.83 "***Joint Inventions***" has the meaning set forth in Section 9.2.

1.84 "***Joint Patents***" has the meaning set forth in Section 9.2.

1.85 "***Joint Project Team***" or "***JPT***" has the meaning set forth in Section 2.9.

1.86 "***Joint Steering Committee***" or "***JSC***" means the committee formed by the Parties as described in Section 2.2.

1.87 "***Large Dialysis Organization***" or "***LDO***" means (a) an organization that operates out-patient dialysis centers and that has at least twenty-five percent (25%) of the market share (measured by number of patients as determined by USRDS or any successor) of dialysis centers in the U.S. and (b) Dialysis Clinic Inc. Examples of Large Dialysis Organizations as of the Effective Date in clause (a) are Fresenius Medical Care and DaVita HealthCare Partners Inc.

1.88 "***Listed Patents***" means the Patents listed on **Exhibit E**. The Parties may update such exhibit from time to time upon mutual written agreement, e.g., to update the status of the listed Patents, to add newly filed FibroGen Patents, or to make other agreed revisions.

1.89 "***Marketing Authorization Application***" or "***MAA***" means an application for Regulatory Approval in a country, territory or possession other than the U.S.

1.90 "***Marks***" has the meaning set forth in Section 9.11.

1.91 "***Material Anti-Corruption Law Violation***" means a violation of an Anti-Corruption Law relating to the subject matter of this Agreement which [*] a material adverse effect on either Party or on the reputation of either Party because of its relationship with the other Party.

1.92 "***Medical Scientific Liaison***" or "***MSL***" means a field-based professional with scientific, medical and clinical expertise who provides medical and scientific support for marketed products, new indications and compounds in development or registration. An MSL engages in scientific exchange with medical and scientific experts including investigators, key opinion leaders, physicians and other medical professionals and customers.

1.93 "***NDA***" means a New Drug Application, as defined in the FD&C Act and applicable regulations promulgated thereunder by the FDA.

1.94 "***Net Sales***" means the gross invoiced amount on sales of a Product by AstraZeneca, its Affiliates or its or their Sublicensees to Third Parties (including Distributors but excluding Sublicensees) in the Territory, after deduction of the following amounts:

(a) normal and customary trade, quantity or prompt settlement discounts (including chargebacks and allowances) actually allowed;

(b) amounts repaid or credited by reason of rejection, returns or recalls of goods, rebates or bona fide price reductions determined by AstraZeneca, its Affiliates or its or their Sublicensees in good faith;

(c) rebates and similar payments made with respect to sales paid for by managed care organizations, hospitals, other buying groups or any governmental or regulatory authority such as, by way of illustration and not in limitation of the Parties' rights under this Agreement, federal or state Medicaid, Medicare or similar state program in the U.S. or equivalent governmental program in any other country;

(d) any invoiced amounts that are not collected by AstraZeneca, its Affiliates or its or their Sublicensees, including bad debts (provided that such amounts will be added to Net Sales if and when recovered), up to an amount not to exceed [*]) of Net Sales;

(e) excise taxes, Indirect Taxes, customs duties, customs levies and import fees imposed on the sale, importation, use or distribution of the Products;

(f) [*]; and

(g) as an allowance for transportation costs, distribution expenses, special packaging and related insurance charges, [*].

For clarity, any deduction made pursuant to one subsection above, shall not be additionally deducted in the event that such deduction may also apply in a separate subsection (i.e., no double-counting).

In the event that a Product is sold in any country in the form of a Combination Product, Net Sales of such Combination Product shall be adjusted by multiplying actual Net Sales of such Combination Product in such country calculated pursuant to the foregoing definition of "Net Sales" by the fraction A/(A+B), where A is the average invoice price in such country of any Product that contains the same Collaboration Compound(s) as such Combination Product as its sole active ingredient(s), if sold separately in such country, and B is the average invoice price in such country of each product that contains active ingredient(s) other than the Collaboration Compound(s) contained in such Combination Product as its sole active ingredient(s), if sold separately in such country; *provided* that the invoice price in a country for each Product that contains only the Collaboration Compound(s) and each product that contains solely active ingredient(s) other than the Collaboration Compound(s) included in the Combination Product shall be for a quantity comparable to that used in such Combination Product and of substantially the same class, purity and potency or functionality, as applicable. If either such Product that contains the Collaboration Compound(s) as its sole active ingredient or a product that contains the active ingredient(s) (other than the Product) in the Combination Product as its sole active ingredient(s) is not sold separately in a particular country, the Parties shall negotiate in good faith a reasonable adjustment to Net Sales in such country that takes into account the medical contribution to the Combination Product of and all other factors, including patent coverage, reasonably relevant to the relative value of the Collaboration Compound(s) on the one hand and all of the other active ingredient(s), collectively, on the other hand.

In the case of pharmacy incentive programs, hospital performance incentive programs, chargebacks, disease management programs, similar programs or discounts on portfolio product offerings, all rebates, discounts and other forms of reimbursements shall be allocated among products on the basis on which such rebates, discounts and other forms of reimbursements were actually granted or, if such basis cannot be determined, in accordance with AstraZeneca's, its Affiliates' or its or their Sublicensees' existing allocation method; *provided* that any such allocation shall be done in accordance with applicable law, including any price reporting laws, rules and regulations.

Net Sales will be calculated using AstraZeneca's internal audited systems consistently applied to report such sales as adjusted for any of the deductions set forth above not taken into account in such systems. Deductions pursuant to item (d) above will be taken in the Calendar Quarter in which such sales are no longer recorded as a receivable.

Any free of charge disposition or use of reasonable quantities of a Product, up to the amount determined by the JCC, for regulatory or marketing purposes (it being understood and agreed that neither Party shall have the right to distribute the Product as samples except pursuant to Section 5.7) such as compassionate use or indigent patient programs, will not be deemed a sale or disposition for calculating Net Sales. Sales and other transfer of Product between any of AstraZeneca, its Affiliates and Sublicensees will not give rise to Net Sales except if the purchaser is an end user.

1.95 "***Nonclinical Studies***" means all *in vivo* and *in vitro* non-human studies of Collaboration Compounds and Products, including non-clinical pharmacology, toxicology, tumor and teratogenicity studies.

1.96 "***Patent***" means (i) all national, regional and international patents and patent applications, including provisional patent applications, (ii) all patent applications filed either from such patents, patent applications or provisional applications or from an application claiming priority from any of these, including divisionals, continuations, continuations-in-part, provisionals, converted provisionals, and continued prosecution applications, (iii) any and all patents that have issued or in the future issue from the foregoing patent applications ((i) and (ii)), including utility models, petty patents and design patents and certificates of invention, (iv) any and all extensions or restorations by existing or future extension or restoration mechanisms, including revalidations, reissues, re-examinations and extensions (including any supplementary protection certificates and the like) of the foregoing patents or patent applications ((i), (ii) and (iii)), and (v) any similar rights, including so-called pipeline protection, or any importation, revalidation, confirmation or introduction patent or registration patent or patent of additions to any such foregoing patent applications and patents.

1.97 "***Personnel Costs***" means, with respect to a reporting period, the total number of hours FibroGen employees and consultants or AstraZeneca employees and consultants, as applicable, actually spent in such reporting period conducting activities under the Development Plan multiplied by the Hourly Rate. Such activities may include, without limitation, clinical development, research activities directly in support of the Development program, management of clinical research organizations and other vendors, regulatory, supply chain, medical monitoring, biostatistics, safety data collection, monitoring and exchange, and clinical and nonclinical finance and contracting.

1.98 "***Pharmacovigilance Agreement***" has the meaning set forth in Section 4.3.

1.99 "***Phase 2 Clinical Trial***" means a Clinical Trial of a Product that would satisfy the requirements of 21 CFR 312.21(b) or its foreign equivalents.

1.100 "***Phase 3 Clinical Trial***" means a Clinical Trial of a Product that would satisfy the requirements of 21 CFR 312.21(c) or its foreign equivalents.

1.101 "***Phase 4 Clinical Trial***" means a Clinical Trial of a Product conducted after Regulatory Approval of such Product has been obtained from an appropriate Regulatory Authority, which trial is (a) conducted voluntarily by a Party to enhance marketing or scientific knowledge of the Product, or (b) conducted due to a request or requirement of a Regulatory Authority.

1.102 "***Product***" means any pharmaceutical product (including all forms, presentations, dosage strengths and formulations) containing as an active ingredient a Collaboration Compound alone or in combination with one or more other therapeutically active ingredients.

1.103 "***Product Information***" has the meaning set forth in Section 12.1.

1.104 "***Product Infringement***" has the meaning set forth in Section 9.5(a)(i).

1.105 "***Promotional Materials***" means all sales representative training materials and all written, printed, graphic, electronic, audio or video matter, including, without limitation, journal advertisements, sales visual aids, formulary binders, reprints, direct mail, direct-to-consumer advertising, internet postings and sites and broadcast advertisements intended for use or used by either Party or its Affiliates or sublicensees in connection with any promotion of a Product.

1.106 "***Publication***" has the meaning set forth in Section 12.5(b).

1.107 "***Regulatory Approval***" means all approvals necessary for the manufacture, marketing, importation and sale of a Product for one or more indications in the Field and in a country or regulatory jurisdiction, which may include, without limitation, satisfaction of all applicable regulatory and notification requirements, but which shall exclude any pricing and reimbursement approvals.

1.108 "***Regulatory Authority***" means, in a particular country or regulatory jurisdiction, any applicable Governmental Authority involved in granting Regulatory Approval and/or, to the extent required in such country or regulatory jurisdiction, pricing or reimbursement approval of a Product in such country or regulatory jurisdiction.

1.109 "***Regulatory Materials***" means regulatory applications, submissions, notifications, registrations, Regulatory Approvals and/or other material filings or correspondence submitted to or received from Regulatory Authorities (including minutes and official contact reports relating to any communications with any Regulatory Authority), or other approvals granted by, a Regulatory Authority that are necessary or reasonably desirable in order to Develop, manufacture, market, sell or otherwise Commercialize a Product in a particular country or regulatory jurisdiction. Regulatory Materials include, without limitation, INDs, MAAs, and NDAs.

1.110 "***Representatives***" has the meaning set forth in Section 10.3(a).

1.111 "***RoW***" means all countries of the Territory other than the U.S. For clarity, except as expressly set forth in Article 2, the territories licensed under the China Agreement are not included in RoW.

1.112 "***SEC***" means the U.S. Securities and Exchange Commission.

1.113 "***Sublicense Agreement***" has the meaning set forth in Section 7.3(b).

1.114 "***Sublicensee***" means any Third Party granted a sublicense by AstraZeneca or any of its Affiliates under the rights licensed to AstraZeneca pursuant to Article 7.

1.115 "***Subsequent Agreement***" has the meaning set forth in Section 7.4(c).

1.116 "***Subsequent Licensee***" has the meaning set forth in Section 7.4(c).

1.117 "***Supply and Quality Agreement***" has the meaning set forth in Section 6.5.

1.118 "***Tax and Taxation***" means any form of tax or taxation, levy, duty, charge, social security charge, contribution, or withholding of whatever nature (including any related fine, penalty, surcharge or interest) imposed by, or payable to, a Tax Authority.

1.119 "***Tax Authority***" or "***Tax Authorities***" means any government, state or municipality, or any local, state, federal or other fiscal, revenue, customs, or excise authority, body or official anywhere in the world, authorized to levy Tax.

1.120 "***Technical Product Failure***" means (a) a [*] of a Collaboration Compound or Product under Development or Commercialization under this Agreement, as determined (including following a review of the Carcinogenicity Studies) (i) by a consensus decision by the JSC or (ii), following referral of the matter to the Executive Officers pursuant to Section 2.6(c), by a consensus decision by the Executive Officers, or (iii), in the event that a consensus decision by the Executive Officers has not been attained within twenty (20) Business Days after the JSC's submission of the matter to them, by expedited resolution in accordance with Section 14.8; or (b) a Regulatory Authority action or decision [*].

1.121 "***Term***" has the meaning set forth in Section 13.1.

1.122 "***Territory***" means all countries of the world other than (a) the countries listed on **Exhibit A** and (b) China (including Hong Kong SAR and Macau SAR, but excluding Taiwan region). The Territory consists of the U.S. and RoW.

1.123 "***Third Party***" means any entity other than FibroGen or AstraZeneca or an Affiliate of either of them.

1.124 "***Transatlantic Clinical Development Plan***" or "***TCDP***" has the meaning set forth in Section 3.2(b).

1.125 "***U.S.***" means the United States of America (including all possessions and territories thereof).

1.126 "***U.S. Commercialization Budget***" has the meaning set forth in Section 5.2.

1.127 "***U.S. Commercialization Plan***" has the meaning set forth in Section 5.2.

1.128 "***U.S. GAAP***" means generally accepted accounting principles in the U.S.

1.129 "***Valid Claim***" means, with respect to a Product in a particular country, any claim of a FibroGen Patent that specifically or generically claims (i) the Collaboration Compound included in such Product as a composition of matter, (ii) a method of manufacture of such Collaboration Compound, or (iii) a method of treatment or other use of such Collaboration Compound [*] and either:

(a) with respect to a granted and unexpired Patent in such country, that (i) has not been held permanently revoked, unenforceable or invalid by a decision of a court or other governmental agency of competent jurisdiction, which decision is unappealable or unappealed within the time allowed for appeal, and (ii) has not been abandoned, disclaimed, denied or admitted to be invalid or unenforceable through reissue or disclaimer or otherwise; or

(b) with respect to a pending Patent application, that was filed and is being prosecuted in good faith and has not been abandoned or finally disallowed without the possibility of appeal or re-filing of the application. For purposes hereof, a claim in a patent application that has not been granted within [*]) years from the priority date for such claim (or, with respect to [*]) shall not be considered to be a Valid Claim, unless and until such claim thereafter issues such that it is included in subsection (a) above.

ARTICLE 2

COLLABORATION; GOVERNANCE

2.1 Collaboration Overview. The Parties desire and intend to collaborate with respect to the Development and Commercialization of Products in the Field in the Territory, as and to the extent set forth in this Agreement (the "***Collaboration***"). It is intended that the Collaboration utilize AstraZeneca's position as a large, fully-integrated pharmaceutical company, while recognizing FibroGen's current experience and expertise in, and aspirations to further develop its clinical development and commercialization capabilities with respect to, HIF Compounds.

2.2 Joint Steering Committee.

(a) Purpose; Formation. The Parties hereby establish a joint steering committee (the "***JSC***") that will monitor and oversee their activities under this Agreement in the Territory and under the China Agreement in China, resolve disputes within subcommittees and facilitate communications between the Parties with respect to the Development and Commercialization of Products in the Territory and in China (under the China Agreement), all in accordance with this Section 2.2.

(b) Composition. Each Party shall initially appoint five (5) representatives of such Party or its applicable Affiliates to the JSC. Each representative appointed to the JSC shall have sufficient seniority within the applicable Party or its Affiliate to make decisions arising within the scope of the JSC's responsibilities. The Parties' initial representatives to the JSC are set forth on **Exhibit G**. The JSC may change its size from time to time by mutual consent of its members, provided that the JSC shall at all times consist of an equal number of representatives of each of FibroGen and AstraZeneca. Each Party may replace its JSC representatives at any time upon written notice to the other Party. The JSC may invite non-members (including consultants and advisors of a Party who are under an obligation of confidentiality consistent with this Agreement) to participate in the discussions and meetings of the JSC, provided that such participants shall have no voting authority at the JSC. Each Party shall appoint a secretariat to the JSC who is not a member of the JSC.

(c) Specific Responsibilities. In addition to its overall responsibility for monitoring and providing a forum to discuss and coordinate the Parties' activities under this Agreement, the JSC shall in particular:

(i) oversee the collaborative activities of the Parties under this Agreement and the China Agreement, including overseeing the China Committee;

(ii) oversee and delegate responsibility for the use of any information arising under the Astellas Agreements, to the extent that (A) [*] such information; and (B) such information [*] this Agreement;

(iii) review and fully discuss the Development and Commercialization of Products and any other ongoing activities;

(iv) receive and discuss reports from the JDC and JCC and provide guidance thereto, and approve the Development Plan (and associated Development Budget) and U.S. Commercialization Plan and amendments thereto;

(v) receive and discuss reports from the China Committee and provide guidance thereto, and approve the applicable Development and Commercialization plans and budgets;

(vi) receive and discuss reports from the IP Committee, provide guidance thereto and review strategies for obtaining, maintaining, defending and enforcing patent and trademark protection for Products within the Territory;

(vii) attempt to resolve issues presented to it by, and disputes within, the JDC, JCC and China Committee or any other subcommittee;

(viii) at least annually, discuss and determine indications for Development of Products;

(ix) review and approve the filing of an NDA for a Product in the U.S. prior to submission;

(x) establish such additional joint subcommittees as it deems necessary to achieve the objectives and intent of this Agreement;

(xi) review and approve the JPT Charter and any subsequent amendments thereto, including the composition and responsibilities of the Core JPT; and

(xii) perform such other functions as appropriate to further the purposes of this Agreement as allocated to it in writing by the Parties.

The JSC shall further – until the date when the JDC or the JCC has been formed – assume the responsibilities of the JDC and the JCC, as applicable, and delegate certain responsibilities to the Core JPT as set forth in Schedule G(a) for the JDC and Schedule G(b) for the JCC.

(d) Delegation or Assumption of Responsibilities by the JSC. The JSC may by mutual consent of its members:

(i) delegate any of its responsibilities set out in this Section 2.2 or in Schedule G(a) or G(b) to any of its subcommittees or the Core JPT; or

(ii) assume any responsibilities assigned to any of its subcommittees.

(e) Meetings. The JSC shall hold its first meeting within thirty (30) days after the Effective Date. The JSC shall meet at least one (1) time per Calendar Quarter during the Term unless the Parties mutually agree in writing to a different frequency for such meetings. Either Party may also call a special meeting of the JSC (by videoconference or teleconference) by at least ten (10) Business Days prior written notice to the other Party in the event such Party reasonably believes that a significant matter must be addressed prior to the next scheduled meeting, and such Party shall provide the JSC no later than ten (10) Business Days prior to the special meeting with materials reasonably adequate to enable an informed decision; provided, however, that where a special meeting is called for on shorter notice with regard to a matter that does not admit delay, such notice and such materials shall be provided as early as possible in advance of such meeting. No later than ten (10) Business Days (or such shorter period as may be necessary in the event of a special meeting called for on shorter notice in accordance with the foregoing) prior to any meeting of the JSC, the secretariats of the JSC shall jointly prepare and circulate an agenda for such meeting. The JSC may meet in person, by videoconference or by teleconference. Notwithstanding the foregoing, at least two (2) meetings per Calendar Year shall be in person unless the Parties mutually agree in writing to waive such requirement in lieu of a videoconference or teleconference. In-person JSC meetings will be held at locations alternately selected and hosted by FibroGen and by AstraZeneca. The host Party shall be responsible for the costs and expenses of the JSC meeting hosted, provided that each Party will bear the expense of its respective JSC members' and other attendees' participation in JSC meetings, including travel costs. Meetings of the JSC shall be effective only if at least one (1) representative of each Party is present or participating in such meeting. The JSC secretariat of the host Party will be responsible for keeping reasonably detailed written minutes of all JSC meetings that reflect, without limitation, material decisions made at such meetings. The JSC secretariat of the host Party shall send draft meeting minutes to the other Party's JSC secretariat, and each secretariat shall seek and obtain review and approval of such minutes from its respective Party's members of the JSC within ten (10) Business Days after each JSC meeting. Such minutes will be deemed approved unless one or more members of the JSC objects to the accuracy of such minutes within ten (10) Business Days of receipt.

(f) Decision-Making. In addition to resolving issues specifically delegated to it, the JSC shall have the authority to resolve any disputes within the Collaboration not resolved by the JDC, JCC, China Committee and any other committees that the Parties may subsequently create to assist in governance of the Collaboration, except where expressly specified elsewhere in this Agreement. The representatives from each Party will have, collectively, one (1) vote on behalf of that Party, and all decision making shall be by consensus. Disputes at the JSC shall be handled in accordance with Section 2.6.

2.3 Joint Development Committee.

(a) Formation; Composition. At a time determined by the JSC, the Parties shall establish a committee to oversee Development of Product(s) in the Territory and in China in

accordance with the Development Plan(s) for such Product(s) and to coordinate the Development activities of the Parties (the "***JDC***") and prior thereto, the JSC will be responsible for all JDC responsibilities except for the specific responsibilities it delegates to the Core JPT as set out in Schedule G(a).

Each Party shall appoint three (3) representatives of such Party or its Affiliates to the JDC at its inception. Each representative appointed to the JDC shall have knowledge and expertise in relevant aspects of the development of small molecule pharmaceutical products, including in the area of chronic kidney disease or cardiovascular or metabolic disorders and having sufficient seniority within the applicable Party or Affiliate to make decisions arising within the scope of the JDC's responsibilities. The JDC may change its size from time to time by mutual consent of its members, provided that the JDC shall consist at all times of an equal number of representatives of each of FibroGen and AstraZeneca. Each Party may replace its JDC representatives at any time upon written notice to the other Party. The JDC may invite non-members (including consultants and advisors of a Party who are under an obligation of confidentiality consistent with this Agreement) to participate in the discussions and meetings of the JDC, provided that such participants shall have no voting authority at the JDC. The JDC shall have two (2) co-chairmen, one selected by FibroGen and one selected by AstraZeneca. The role of the co-chairmen shall be to convene and preside at meetings of the JDC, but they shall have no additional powers or rights beyond those held by the other JDC representatives. Each Party shall appoint a secretariat to the JDC.

(b) Specific Responsibilities of the JDC. In addition to its general responsibilities, the JDC (or the JSC until the JDC is formed, with certain delegations as set forth in this Section 2.3 and Schedule G(a)) shall in particular:

(i) provide regular reports to the JSC regarding the development of the Product, and discuss, prepare and submit to the JSC for approval annual and interim amendments to the Development Plan (and the Development Budget) for each Product;

(ii) discuss and manage the implementation of the Initial Development Plan;

(iii) oversee the conduct of Development;

(iv) discuss the audited final report from the Carcinogenicity Studies, including whether or not a Technical Product Failure has occurred, and provide input thereon to the JSC;

(v) propose to the JSC particular studies to be conducted;

(vi) create, implement and review the Development Strategy for Development in the Territory and the design of all Clinical Trials and Nonclinical Studies conducted under each Development Plan, including Phase 4 Clinical Trials;

(vii) oversee any CMC related development activities, e.g. stability studies or packaging development, as well as other activities to prepare for supply of drug substance and finished Product for Commercialization, including to oversee the selection process for, and select (pursuant to Section 6.4), a contract manufacturer to be used by FibroGen for commercial supplies;

(viii) decide whether and when to initiate or discontinue any Clinical Trial and any Nonclinical Study under each Development Plan, including Phase 4 Clinical Trials;

(ix) allocate budgeted resources and determine priorities for each Clinical Trial and Nonclinical Study under each Development Plan, including Phase 4 Clinical Trials;

(x) oversee the conduct of all Clinical Trials and Nonclinical Studies under each Development Plan, including Phase 4 Clinical Trials;

(xi) select Third Party contractors to conduct Clinical Trials of Products;

(xii) facilitate the flow of Information between the Parties with respect to the Development of Products, including Development Data [*] under this Agreement;

(xiii) discuss whether to Develop Products for other indications and propose any such indications to the JSC;

(xiv) allocate primary responsibility as between the Parties for tasks relating to Development of Products where not already specified in the Development Plan;

(xv) discuss the requirements for Regulatory Approval in the Territory and oversee and coordinate regulatory matters with respect to Products in the Territory, including to review and approve material regulatory filings (other than the filing of an NDA in the U.S., which shall be approved by the JSC) prior to submission thereof;

(xvi) establish a publication strategy for publications and presentations related to Products in the Territory and review and approve all such publications in accordance with Section 12.5;

(xvii) facilitate the flow of Information between the Parties with respect to obtaining Regulatory Approval for Products; and

(xviii) perform such other functions as may be appropriate to further the purposes of this Agreement, as directed by the JSC.

(c) Meetings. Following its inception, the JDC shall meet at least one (1) time per Calendar Quarter (or more frequently when necessary), spaced at regular intervals, unless the Parties mutually agree in writing to a different frequency. Either Party may also call a special meeting of the JDC (by videoconference or teleconference) by at least ten (10) Business Days prior written notice to the other Party in the event such Party reasonably believes that a significant matter must be addressed prior to the next scheduled meeting, and such Party shall provide the JDC no later than ten (10) Business Days prior to the special meeting with materials reasonably adequate to enable an informed decision; provided, however, that where a special meeting is called for on shorter notice with regard to a matter that does not admit delay, such notice and such

materials shall be provided as early as possible in advance of such meeting. No later than ten (10) Business Days (or such shorter period as may be necessary in the event of a special meeting called for on shorter notice in accordance with the foregoing) prior to any meeting of the JDC, the secretariats shall jointly prepare and circulate an agenda for such meeting; provided, however, that either Party shall be free to propose additional topics to be included on such agenda, either prior to or, subject to the consent of the other Party, in the course of such meeting. The JDC may meet in person, or at the request of either Party, by videoconference or teleconference. In-person JDC meetings will be held at locations alternately selected and hosted by FibroGen and by AstraZeneca. Each Party shall report to the JDC on all material issues relating to the Development of Products for and in the Territory at the JDC meeting occurring after such issues arise. The host Party shall be responsible for the costs and expenses of the JDC meeting hosted, provided that each Party will bear the expense of its respective JDC members' and other attendees' participation in JDC meetings, including travel costs. Meetings of the JDC shall be effective only if at least one (1) representative of each Party is present or participating in such meeting. The secretariat of the host Party shall be responsible for keeping reasonably detailed written minutes of all JDC meetings that reflect all decisions made at such meetings. The secretariat of the host Party shall send meeting minutes to the other Party's secretariat, and each secretariat shall seek and obtain review and approval of such minutes from its respective Party's members of the JDC within ten (10) Business Days after each JDC meeting. Minutes will be deemed approved unless one or more members of the JDC objects to the accuracy of such minutes within ten (10) Business Days of receipt.

(d) Decision-Making. The JDC shall act by consensus. The representatives from each Party will have, collectively, one (1) vote on behalf of that Party. If the JDC cannot reach consensus on an issue that comes before the JDC and over which the JDC has oversight, then the Parties shall refer such matter to the JSC for resolution in accordance with Sections 2.2(e) and 2.6(b).

2.4 Joint Commercialization Committee.

(a) Formation; Composition. At a time determined by the JSC, but no later than the earlier of (i) eighteen (18) months prior to the date of the expected First Commercial Sale of the Product in the U.S. and (ii) six (6) months prior to the projected date of submission of the first NDA for the Product in the U.S., the Parties shall establish a committee to oversee Commercialization of Products in the Territory and in China (the "***JCC***"), and prior thereto, the JSC will be responsible for all JCC responsibilities except for the specific responsibilities it delegates to the Core JPT as set out in Schedule G(b).

Each Party shall appoint three (3) representatives of such Party or its Affiliate to the JCC at its inception. Each representative appointed to the JCC shall have knowledge and expertise in relevant aspects of the commercialization of small molecule pharmaceutical products, including in the area of chronic kidney disease or cardiovascular or metabolic disorders and having sufficient seniority within the applicable Party or its Affiliate to make decisions arising with the scope of the JCC's responsibilities. The JCC may change its size from time to time by mutual consent of its members, provided that the JCC shall consist at all times of an equal number of representatives of each of FibroGen and AstraZeneca. Each Party may replace its JCC representatives at any time upon written notice to the other Party. The JCC may invite non-members (including consultants and advisors of a Party who are under an obligation of confidentiality consistent with this

Agreement) to participate in the discussions and meetings of the JCC, provided that such participants shall have no voting authority at the JCC. The JCC shall have a chairman, who shall be selected by AstraZeneca. The role of the chairman shall be to convene and preside at meetings of the JCC, but the chairman shall have no additional powers or rights beyond those held by the other JCC representatives.

(b) Specific Responsibilities of the Joint Commercialization Committee. In addition to its general responsibilities, the Joint Commercialization Committee (or the JSC until the JCC is formed, with certain delegations as set forth in this Section 2.4 and Schedule G(b)) shall in particular:

(i) oversee Commercialization in the Territory and (as set out in more detail in the China Agreement) China;

(ii) regularly report to the JSC regarding the Commercialization of the Products, and discuss, prepare and submit for approval to the JSC the U.S. Commercialization Plan for each Product in the U.S., including any amendments thereto;

(iii) review and approve each commercialization plan for the RoW prepared by AstraZeneca;

(iv) oversee implementation of each U.S. Commercialization Plan;

(v) coordinate the Commercialization activities of FibroGen and AstraZeneca with respect to Products, including pre-launch and post-launch activities;

(vi) allocate primary responsibility as between the Parties for tasks relating to Commercialization of Products in the U.S.;

(vii) determine the amount of Product to be distributed free of charge annually for regulatory or marketing purposes or investigator-initiated trials (it being understood and agreed that neither Party shall have the right to distribute the Product as samples except pursuant to Section 5.7);

(viii) oversee global harmonization of the Product;

(ix) be responsible for publication matters as described in Section 2.3(b)(xvi) upon transition of such responsibility from the JDC to the JCC; and

(x) perform such other functions as appropriate to further the purposes of this Agreement, as directed by the JSC.

(c) Meetings. Following its inception, the JCC shall meet at least one (1) time per Calendar Quarter, spaced at regular intervals unless the Parties mutually agree in writing to a different frequency. Either Party may also call a special meeting of the JCC (by videoconference or teleconference) by at least ten (10) Business Days prior written notice to the other Party in the event such Party reasonably believes that a significant matter must be addressed prior to the next scheduled meeting, and such Party shall provide the JCC no later than ten (10) Business Days prior

to the special meeting with materials reasonably adequate to enable an informed decision; provided, however, that where a special meeting is called for on shorter notice with regard to a matter that does not admit delay, such notice and such materials shall be provided as early as possible in advance of such meeting. No later than ten (10) Business Days (or such shorter period as may be necessary in the event of a special meeting called for on shorter notice in accordance with the foregoing) prior to any meeting of the JCC, the secretariats shall jointly prepare and circulate an agenda for such meeting; provided, however, that either Party shall be free to propose additional topics to be included on such agenda, either prior to or, subject to the consent of the other Party, in the course of such meeting. The JCC may meet in person, by videoconference, or by teleconference. In-person JCC meetings will be held at locations alternately selected and hosted by FibroGen and by AstraZeneca. Meetings of the JCC shall be effective only if at least one (1) representative of each Party is present or participating in such meeting. Each Party shall report to the JCC on all material issues relating to the Commercialization of Products promptly after such issues arise. The host Party shall be responsible for the costs and expenses of the JCC meeting hosted, provided that each Party will bear the expense of its respective JCC members' and other attendees' participation in JCC meetings, including travel costs. The secretariat of the host Party will be responsible for preparing reasonably detailed written minutes of JCC meetings that reflect all decisions made at such meetings. The secretariat of the host Party shall send meeting minutes to the other Party's secretariat, and each secretariat shall seek and obtain review and approval of such minutes from its respective Party's members of the JCC within ten (10) Business Days after each JCC meeting. Minutes will be deemed approved unless one or more members of the JCC objects to the accuracy of such minutes within ten (10) Business Days of receipt.

(d) Decision-Making. The JCC shall act by consensus. The representatives from each Party will have, collectively, one (1) vote on behalf of that Party. If the JCC cannot reach consensus on an issue that comes before the JCC and over which the JCC has oversight, then the Parties shall refer such matter to the JSC for resolution in accordance with Sections 2.2(e) and 2.6.

2.5 Coordination with Astellas. FibroGen shall designate one of AstraZeneca's JSC representatives (as selected by AstraZeneca) to serve as a member of the steering committee under the Astellas Collaboration, who (except as described in the next sentence) shall be entitled to participate in the decision-making of such committee pursuant to the Astellas EU Agreement. The designated representative will be permitted to attend meetings of such committee; provided that such representative shall not have the right to attend portions of (or participate in decision-making with respect to) any such meeting that are not relevant to the Development or Commercialization of Products in the Territory or in China.

2.6 Resolution of Committee Disputes.

(a) Within Operating Committees. All decisions within any Committee other than the JSC shall be made by consensus, and if a dispute arises which cannot be resolved within such Committee, then the representatives of either Party may cause such matter to be referred to the JSC for resolution as provided in Section 2.2(e).

(b) Within The JSC. All decisions within the JSC (whether originating there, or referred to it by an operating Committee) shall be made by consensus. If a matter is referred by

an operating Committee to the JSC, it shall use good faith efforts, in compliance with Section 2.6(d), to resolve promptly such matter. If the JSC is unable to reach consensus on any issue for which it is responsible, within ten (10) Business Days after a Party affirmatively states that a decision needs to be made, either Party may elect to submit such issue to the Parties' Executive Officers in accordance with Section 2.6(c).

(c) Referral to Executive Officers. If a Party makes an election under Section 2.6(b) to refer a matter to the Executive Officers, the JSC shall submit in writing the respective positions of the Parties to their respective Executive Officers. Such Executive Officers shall use good faith efforts, in compliance with Section 2.6(d), to resolve promptly such matter, which good faith efforts shall include at least one meeting (in-person, by telephone, video conference or other appropriate means) between such Executive Officers within twenty (20) Business Days after the JSC's submission of such matter to them. If the Executive Officers are unable to reach consensus on any such matter within such twenty (20) Business Day period, then either Party may invoke the dispute resolution provisions of Article 14; provided, however, that:

(1) FibroGen's Executive Officer shall have the final say with respect to: [*];

(ii) AstraZeneca's Executive Officer shall have the final say with respect to: [*];

(d) Good Faith. In conducting themselves on Committees, and in exercising their rights under this Section 2.6, all representatives of both Parties shall consider diligently, reasonably and in good faith all input received from the other Party, and shall use reasonable efforts to reach consensus on all matters before them. In exercising any decision making authority granted to it under this Article 2, each Party shall act based on its good faith judgment of what is in the best interests of the Products and the Collaboration.

2.7 Alliance Managers. Each Party shall, within thirty (30) days following the Effective Date, appoint a single person who shall oversee contact between the Parties for all subject matter related to the Collaboration between meetings of the JSC, JPT, JDC and JCC, and shall have such other responsibilities as the Parties may agree in writing after the Effective Date (such person, the "***Alliance Manager***"). Each Party may replace its Alliance Manager at any time by notice in writing to the other Party. The Alliance Managers shall work together to manage and facilitate the Collaboration governance meetings and the communication between the Parties under this Agreement, including the resolution (in accordance with the terms of this Agreement) of issues between the Parties that arise in connection with this Agreement. The Alliance Managers shall not have final decision-making authority with respect to any matter under this Agreement.

2.8 General Committee Authority. Each Committee shall have solely the powers expressly assigned to it in this Article 2 and elsewhere in this Agreement. No Committee shall have any power to amend, modify, or waive compliance with this Agreement (or any agreement entered into in connection with this Agreement). It is expressly understood and agreed that the control of decision-making authority by FibroGen or AstraZeneca, as applicable, pursuant to Section 2.6, so as to resolve a disagreement or deadlock on a Committee for any matter will not authorize either Party to perform any function not delegated to a Committee, and that neither FibroGen nor AstraZeneca shall have any right to unilaterally modify or amend, or waive its own compliance with, the terms of this Agreement.

2.9 Joint Project Team. The Parties hereby establish a joint project team (the "***Joint Project Team***" or "***JPT***") to develop and propose plans to governing committees, manage operational activities and serve as an information resource for the Committees. The members of the JPT representing core functions relevant to the joint development and commercialization of Products (the "***Core Joint Project Team***" or "***Core JPT***") shall provide oversight to the overall JPT. Until such time as when the JDC and the JCC have been formed, the Core JPT shall have the additional responsibilities set out in Schedule G(a) and G(b), respectively. Neither the JPT nor the Core JPT will have any decision-making authority, except as set out in Schedule G(a) or G(b) or otherwise explicitly authorized by an appropriate Committee. The Parties agree to establish a JPT Charter on or prior to October 31, 2014, which contains the composition and responsibilities of the JPT and the Core JPT. Subject to the JPT Charter, the Core JPT will consist of project leaders as appointed by FibroGen and by AstraZeneca, and such additional members as the Parties deem appropriate from time to time. Each Party will appoint appropriately qualified and authorized representatives for each applicable operational area or function. The JPT members will serve as the point of contact for operational matters between the Parties. The JPT may form subteams to support the efforts of the JPT as agreed by the Parties. As appropriate, FibroGen may arrange, on its own initiative or at AstraZeneca's reasonable request from time to time, a joint meeting between the JPT and the project team under the Astellas Collaboration.

2.10 Executive Meetings. FibroGen's Chief Executive Officer and an appropriate Executive Vice President of AstraZeneca (or other appropriate representative of AstraZeneca of equivalent seniority) will meet in advance of the occurrence of key scheduled Development and Commercialization events or in connection with key decisions, to review and discuss the status and direction of the Collaboration.

2.11 Discontinuation of Participation on a Committee. Each Committee shall continue to exist until the first to occur of (a) the Parties mutually agreeing to disband the Committee, or (b) FibroGen providing to AstraZeneca written notice of its intention to disband and no longer participate in such Committee, which FibroGen retains the right to do at any time during the Term, in its sole discretion, provided, however, that doing so shall not relieve FibroGen of any of its obligations under this Agreement or the China Agreement (save from the obligation to participate at the relevant Committee meetings). Once FibroGen has provided written notice as referred to in subsection (b) above, such Committee shall have no further obligations under this Agreement and AstraZeneca shall have the right to solely decide, without consultation, any matters previously before such Committee, subject to the other terms of this Agreement.

ARTICLE 3

DEVELOPMENT

3.1 Overview. The Parties agree to undertake a joint development program to further Develop the Collaboration Compounds and Products as provided in this Article 3 under the direction of the JDC (or, the JSC prior to the inception of the JDC), and pursuant to the Development Plan (such program, the "***Development Program***"). Prior to the JDC's inception, all

references to the JDC in this Article 3 and elsewhere in this Agreement will be deemed references to the JSC (which may delegate certain responsibilities to the Core JPT in accordance with Schedule G(a)).

3.2 Development Plans.

(a) General. All Development of any given Product pursuant to this Agreement for the U.S. and RoW shall be conducted pursuant to a development plan (the "***Development Plan***") that describes (i) the proposed overall program of Development for the applicable Product and indications in the U.S. and RoW, including Clinical Trials and Nonclinical Studies, toxicology, formulation, packaging development, process and analytical development, production of registration and validation batches, regulatory plans and other elements of obtaining Regulatory Approval(s) in each applicable country; (ii) the anticipated start dates and data availability dates of such Clinical Trials, Nonclinical Studies and CMC development activities, and timelines for key Regulatory Authority meetings, filing of applications for Regulatory Approval, and the receipt of Regulatory Approvals and (iii) the respective roles and responsibilities of each Party in connection with such activities. The Development Plan will be associated with a detailed budget for all such activities conducted by the Parties for the U.S. In the event of any inconsistency between the Development Plan and this Agreement, the terms of this Agreement shall prevail.

(b) Initial Development Plan. The initial Development Plan, along with the associated Development Budget, describing (among other things) the planned development of the Product for the CKD Indications for the U.S., is attached hereto as **Exhibit H** (the "***Initial Development Plan***"). The Initial Development Plan includes and shall be integrated with those Phase 3 Clinical Trials that are currently being conducted by FibroGen or Astellas under the U.S. and EU plan for conducting Phase 3 Clinical Trials of the Product for the CKD Indications under the Astellas EU Agreement (the "***Transatlantic Clinical Development Plan***" or the "***TCDP***"). FibroGen shall notify AstraZeneca, via the JDC, of all material updates and material changes to the TCDP. The Initial Development Plan shall further outline such additional Phase 3 Clinical Trials as the Parties have agreed to conduct (i.e. in addition to those being conducted under the TCDP). Within thirty (30) days after the Effective Date, the JPT will initiate implementation of the Initial Development Plan.

(c) Development Strategy. Within one (1) year after the Effective Date or at such other time as the Parties may mutually agree, the JDC will prepare for the JSC's review and approval an overall development strategy for the Product in the Field in the Territory, including the CKD Indications for the RoW and any other indications (or other life cycle management) the Parties are considering to develop (or conduct) throughout the Territory, which strategy will include anticipated dates (estimated based on the date of completion of certain development events) for preparing detailed descriptions of applicable events for inclusion in an amended Development Plan (the "***Development Strategy***"). The Development Strategy will include reasonable timeframes for any additional indications (i.e., in addition to the CKD Indications) to be developed hereunder, with the understanding that not all such indications will be developed concurrently.

(d) Amendments to the Development Plan.

(i) On an annual basis (no later than October 31st of the preceding Calendar Year), or more often as the Parties deem appropriate, the JDC shall prepare amendments to the then-current Development Plan and Development Budget for approval of the JSC. Each such amended Development Plan shall specify, with a reasonable level of detail, the items described in Section 3.2(a). Such amended Development Plan shall cover the next Calendar Year (and additional periods as reasonably determined by the Parties) and shall contain a corresponding budget for U.S. activities. Such updated and amended Development Plan shall reflect any changes, re-prioritization of studies within, reallocation of resources with respect to, or additions to the then-current Development Plan. In addition, the JDC may prepare amendments for approval of the JSC to the Development Plan and corresponding Development Budget from time to time during the Calendar Year in order to reflect changes in such plan and budget for such Calendar Year, in each case, in accordance with the foregoing. At the request of either Party, but no more frequently than quarterly, the JDC shall review the Development Budget and propose any necessary amendments to the JSC for approval. Once approved by the JSC, the amended annual Development Plan and Development Budget shall become effective for the applicable period on the date approved by the JSC (or such other date as the JSC shall specify). Any JSC-approved amended Development Plan and Development Budget shall supersede the previous Development Plan and Development Budget for the applicable period.

(ii) Each Party shall notify the other Party promptly upon becoming aware that it is likely to exceed, or has exceeded, the budget for a particular activity for U.S. Development of the Product allocated to such Party in the Development Plan. Thereafter, the JDC shall promptly meet and determine whether to amend the Development Plan or Development Budget accordingly, provided that the JDC shall not unreasonably withhold its agreement to any budget amendment proposed by either Party that results from causes outside of such Party's reasonable control or that the Parties agree includes expenses reasonably incurred in the performance of the Development Plan. Any such amendment proposed by the JDC shall not be subject to the JSC's review and will be deemed automatically approved by the JSC, unless such amendment would cause the total Development Costs incurred by a Party in any Calendar Year to exceed [*] percent ([*]%) of the budgeted Development Costs for such Party in such Calendar Year, in which event JSC approval will be required; provided that the JSC shall not unreasonably withhold its agreement to any budget amendment proposed by either Party that results from causes outside of such Party's reasonable control and that the Parties agree includes expenses reasonably incurred in the performance of the Development Plan.

(e) Development Responsibilities. Unless the Parties agree in writing upon an alternate allocation of responsibility, the Parties shall have the following rights and obligations with respect to operational responsibilities under each Development Plan:

(i) U.S. Operational responsibility for all studies designed to support Regulatory Approvals in the U.S. will be shared between the Parties as allocated in the Development Plan; provided that FibroGen and Astellas (it being agreed that as between the Parties FibroGen will be responsible for all such activities conducted by Astellas; provided however, that [*] Astellas [*] Astellas [*] FibroGen [*] this Agreement [*] FibroGen [*] under the Astellas Agreements with respect to such activities) will be responsible for conducting the first

Phase 3 Clinical Trials (that are included also in the TCDP) of the Product in the CKD Indications under the Initial Development Plan. For clarity, the term 'first Phase 3 Clinical Trials', as used in this section, shall be the studies identified as [*] in the Initial Development Plan.

(ii) RoW. AstraZeneca shall be solely responsible for all aspects of the Development of Collaboration Compounds and Products that are solely applicable to the RoW (which, for clarity, does not include China).

(iii) Development Sharing Period. During the Development Sharing Period, FibroGen shall conduct all Development in good faith, and using Commercially Reasonable Efforts to achieve the then-current timelines in such Development Plan.

(f) Development Decision-Making. Except as otherwise expressly provided in this Agreement, all matters regarding the Development Plan shall be decided by consensus by the JDC, subject to Section 2.6.

3.3 Coordination with Astellas.

(a) AstraZeneca understands and agrees that FibroGen's and AstraZeneca's conduct of certain Development and Commercialization activities for North America (meaning the U.S., Mexico and Canada) hereunder are subject to the terms of the Astellas EU Agreement, and that FibroGen's obligations to Astellas may require additional procedures, consents or adherence to notification obligations. Accordingly, the Parties shall, as applicable, take into consideration such obligations when formulating the plans for, and coordinate, [*], and FibroGen shall use Commercially Reasonable Efforts to obtain [*] Development in the Territory under this Agreement. [*]. Notwithstanding anything else in this Agreement to the contrary, however, FibroGen shall not be required to perform (or refrain from performing) any Development activity that would constitute a violation of its obligations under the Astellas Agreements, as disclosed to AstraZeneca prior to the Effective Date.

(b) If, [*], FibroGen shall promptly notify AstraZeneca and such matter shall be discussed at a specially convened JSC meeting. In the event that AstraZeneca, pursuant to Section 3.9, both (i) is not obligated to use Commercially Reasonable Efforts to Develop such Product in such indication; and (ii) following notification by FibroGen, determines that it does not wish to participate in such Development in such indication, the following shall apply:

(i) FibroGen shall be free to Develop, obtain Regulatory Approval for and Commercialize such Product in such indication throughout the Territory;

(ii) As between the Parties, such Development and Commercialization shall be undertaken at FibroGen's sole cost;

(iii) FibroGen shall use Commercially Reasonable Efforts to ensure that such Development and Commercialization shall not materially impact AstraZeneca's rights under this Agreement (it being understood that such Development and Commercialization are not considered per se to materially impact AstraZeneca's rights under this Agreement);

(iv) The Parties shall, as soon as practicable, discuss in good faith an option arrangement whereby AstraZeneca may obtain rights to such Product in such indication at a future decision point. The Parties shall negotiate in good faith the terms under which AstraZeneca would obtain such rights, which terms include [*] and [*]; and

(v) The Parties shall discuss in good faith, appropriate amendments to the provisions of this Agreement to reflect such Development and Commercialization of such Product in such indication by FibroGen, including, without limitation, amendments to the pharmacovigilance provisions in Section 4.3. If the Parties fail to agree on such terms within a reasonable time period, either Party may refer the matter to the Executive Officers for discussion.

(c) The Parties shall ensure that each amended Development Plan allows for the conduct of such Clinical Trials as are included in the then current TCDP. If the JDC agrees that additional studies (i.e. in addition to those included in the TCDP) are required for the Product in the CKD Indications for the U.S., then the Parties shall, where required, [*]. FibroGen shall use Commercially Reasonable Efforts to [*], shall use Commercially Reasonable Efforts to [*].

(d) FibroGen shall use Commercially Reasonable Efforts from time to time during the Term to [*] or other rights that AstraZeneca or the Parties reasonably believe [*] in order to allow AstraZeneca to obtain the benefit of its rights and licenses pursuant to this Agreement.

3.4 Development Costs.

(a) **Allocation**. The Parties shall share equally all costs and expenses incurred by or on behalf of either Party to conduct Development of the Product for the U.S. under the Development Plan during the Development Sharing Period, according to the terms of Section 8.2, including for supply of Collaboration Compound or Product in accordance with Article 6, in each case to the extent that such Development Costs are not borne or reimbursed by Astellas under the Astellas EU Agreement, provided that FibroGen will timely inform AstraZeneca of any such costs borne or reimbursed by Astellas. AstraZeneca shall be responsible for all costs and expenses it incurs in the conduct of activities under the Development Plan for the RoW and shall reimburse FibroGen for all costs and expenses FibroGen incurs (including Personnel Costs, the Fully Burdened Cost of Collaboration Compound or Product or comparator drug, concomitant drug, placebo or other materials used in any Clinical Trial or Nonclinical Studies, and all other out-of-pocket costs) for activities conducted by FibroGen (i) for the U.S. after the Development Sharing Period and (ii) for the RoW, in each case (i) and (ii) under the Development Plan within the applicable Development Budget (for the U.S.) or budget (for RoW) (subject to overages described in Section 3.4(b)) and according to the terms of Section 8.2, together with the reimbursement for supply of Collaboration Compound or Product in accordance with Article 6. For clarity, all Clinical Trials set out in the Initial Development Plan shall be deemed to be Development of the Product for the U.S.

(b) **Overage**. Notwithstanding the foregoing in Section 3.4(a), unless otherwise agreed by the JDC (subject to JSC approval to the extent set forth in Section 3.2(d)(ii)) or by the Parties, either before or after the applicable expense is incurred (which agreement shall not be unreasonably withheld for any budget overage outside the applicable Party's reasonable

control and reasonably incurred in the performance of the Development Plan), for any Calendar Quarter, each Party will be solely responsible for Development Costs it incurs in excess of [*] percent ([*]%) of the total amount allocated to such Party's activities in such Calendar Quarter in the Development Budget, and for any Calendar Year, each Party will be solely responsible for Development Costs it incurs in excess of [*] percent ([*]%) of the total amount allocated to such Party's activities in such Calendar Year in the Development Budget, provided that Development Costs incurred in excess of [*]% for the Calendar Quarter or [*]% for the Calendar Year, as applicable, of the amounts so budgeted shall also be reimbursed if the Parties determine in good faith that such Development Costs were reasonably incurred in the performance activities under the Development Plan and that such budget overage was caused by circumstances outside of such Party's reasonable control.

3.5 Indications Outside the Field.

(a) Inclusion. If either Party desires to develop a particular Product for an indication outside the Field, it may propose such indication to the other Party in writing by providing the other Party with a high-level proposed development plan for such Product in such indication. Upon the other Party's request within sixty (60) days after receipt of such development plan, the Parties shall meet to discuss such proposed indication and shall work together in good faith to generate and gather the necessary information to support such potential development and to prepare a detailed development plan. If the Parties agree on such plan, AstraZeneca shall have the right to include the proposed indication in the Field, solely with respect to the applicable Product, by written notice to FibroGen. If AstraZeneca exercises such right, such indication will be a "***Designated Indication***", the Field will automatically be expanded to include the Designated Indication (without payment of any additional upfront fees, milestones or other consideration except those payments already provided for under this Agreement), the terms of this Agreement (including payment terms and diligence obligation) will apply to such indication and the JDC shall promptly prepare a development plan for such indication for review and approval by the JSC.

(b) Termination. The Field will automatically be amended to remove any Designated Indication upon the occurrence of any of the following events: (a) the permanent cessation (excluding, for example, suspension, termination or completion pending further review, consideration or development planning) of all Clinical Trials by both Parties with respect to such Product for such Designated Indication prior to Regulatory Approval in any country in the Territory in such Designated Indication, (b) the termination of all Regulatory Approvals for such Designated Indication in the Territory without either Party intending or considering to restore or replace any such Regulatory Approval, or (c) the decision of the JSC to permanently cease all Commercialization of such Product in such Designated Indication.

(c) Restriction. For clarity, Designated Indications are only those indications outside the Field that AstraZeneca agrees to include in this Agreement. Except for Designated Indications pursuant to this Agreement, FibroGen shall not Develop or Commercialize (directly or indirectly, by license, supply of Product or otherwise) any Product for any indication outside the Field in the Territory during the term of this Agreement.

3.6 Additional Compounds.

(a) Added by FibroGen. At any time during the Term, FibroGen may upon written notice to AstraZeneca include any HIF Compound in the definition of Collaboration Compound (and Product). Effective upon such written notice, the identified HIF Compound shall be deemed a Collaboration Compound, provided that AstraZeneca shall not have any obligations with respect to such Collaboration Compound (or Product) under this Agreement unless and until AstraZeneca's acceptance thereof through written notice to FibroGen.

(b) Added by Agreement.

(i) If AstraZeneca wishes to include additional HIF Compounds as Collaboration Compounds (and Products), it may make such a request to FibroGen. Upon receipt of such request, FibroGen shall make good faith and diligent efforts to present to the JSC for review all reasonably relevant data and other information (excluding chemical structures) Controlled by FibroGen that is related to those HIF Compounds that it reasonably believes offer substantial clinical benefit over then-current Collaboration Compounds from its library of HIF Compounds, including results from any Phase 2 Clinical Trial conducted in the Field. For clarity, the foregoing does not impose any obligation on FibroGen to identify or generate any additional HIF Compounds.

(ii) If AstraZeneca and FibroGen, through the JDC and JSC, agree upon a development program for any such HIF Compounds, then the Parties shall negotiate in good faith to agree on any additional consideration to be payable by AstraZeneca to FibroGen for inclusion of such additional HIF Compounds as Collaboration Compounds, and upon agreement, will amend this Agreement accordingly.

(c) Subject to Section 3.3 and to FibroGen's obligations under the Astellas EU Agreement, FibroGen will use good faith in designating additional HIF Compounds as Collaboration Compounds pursuant to this Section 3.6, and shall not nominate additional HIF Compounds for Development in the [*] without approval of the JSC.

3.7 Veterinary Applications. Following the first approval of an NDA for a Product, the Parties may agree to develop the Product for a veterinary application. No additional consideration shall be payable by AstraZeneca to FibroGen with respect to such development. Upon agreement, the Parties shall enter into a separate agreement governing such applications or amend this Agreement accordingly prior to conducting any activities with respect to veterinary applications.

3.8 Research Collaboration. Upon FibroGen's request, the Parties will discuss conducting a research program funded by AstraZeneca and directed toward franchise enhancement and lifecycle management for HIF Compounds or other topics that the Parties determine relevant to the Products and the Field. Upon agreement on the terms of such research program, the Parties will enter into a separate agreement or amend this Agreement accordingly.

3.9 Diligence; Standards of Conduct.

(a) Each Party shall use Commercially Reasonable Efforts to Develop and obtain Regulatory Approval for the Products throughout the Territory (i) in the CKD Indications and (ii) in each [*], other indication in the Field and Designated Indication that [*] in the Development Plan. If at any time there is only one Collaboration Compound (either because no additional Collaboration Compounds have been developed or because development of all other Collaboration Compounds have been terminated), then the foregoing obligation shall be for one Product only.

(b) Each Party shall use Commercially Reasonable Efforts to carry out the tasks assigned to it under the Development Plan in a timely and effective manner. Each Party shall conduct its activities under the Development Plan in a good scientific manner and in compliance in all material respects with all applicable laws and regulations. Without prejudice to the aforesaid, the Party responsible for the conduct of any Clinical Trials hereunder shall perform such Clinical Trials in a good scientific manner, in compliance with all applicable laws and regulations, GCP, this Agreement and the Development Plan as well as the relevant protocol and investigator's brochure. Such Party shall further require the principal investigators, study sites and any contractors involved in the performance of such Clinical Trials to comply with all safety reporting procedures set forth in the Pharmacovigilance Agreement in connection with their performance of such Clinical Trials.

3.10 Development Data.

(a) Ownership and Disclosure. FibroGen shall solely own all data, records and reports generated by or on behalf of either Party in the conduct of Development activities under this Agreement (collectively, the "***Development Data***"), and AstraZeneca hereby assigns, and shall assign, to FibroGen, all of its right, title and interest in and to the Development Data. Each Party shall provide access to and, where practical, copies of the Development Data it (or its Affiliates or Sublicensees, or Third Parties acting on their behalf) generates to the other Party promptly upon receipt or development thereof, including nonclinical and clinical data (including raw data), analysis, reports and protocols. With respect to any data, records and reports, including nonclinical and clinical data (including raw data), analysis, reports and protocols, generated by or on behalf of FibroGen [*]"), the following shall apply. [*]. AstraZeneca shall reimburse FibroGen for any translation costs, costs for photocopying or other similar administrative expenses incurred by FibroGen in connection with providing access to the [*]. Each Party will reasonably respond to the other Party's request for access to and questions about the Development Data and Astellas Data. Such Development Data will be provided in electronic form if requested by the other Party or reasonably convertible to such electronic form.

(b) Use. Each Party shall have the right to use the Development Data, and [*], for the purpose of Developing and Commercializing Products in the Field in the Territory in accordance with the terms of this Agreement and in China in accordance with the terms of the China Agreement. [*]. AstraZeneca hereby grants [*]. AstraZeneca will take all actions reasonably requested by FibroGen to enable [*], at FibroGen's cost and expense. FibroGen hereby grants AstraZeneca, its Affiliates and Sublicensees a right of access, a right of reference and a right to use and incorporate all Development Data [*] in any regulatory filings for Products in the

Territory. FibroGen will take all actions reasonably requested by AstraZeneca to enable AstraZeneca and its Affiliates and Sublicensees to practice such rights, at AstraZeneca's cost and expense.

3.11 Development Records and Reports. Each Party shall maintain or cause to be maintained complete and accurate records (in the form of technical notebooks and/or electronic files where appropriate) of all work conducted by it or on its behalf under the Development Plan and all Information resulting from such work, including in the case of FibroGen, records of whether Development Costs are borne or reimbursed by Astellas under the Astellas EU Agreement. Such records, including any electronic files where such Information may also be contained, shall fully and properly reflect all work done and results achieved in the performance of the Development Plan in sufficient detail and in good scientific manner appropriate for patent and regulatory purposes. Such records shall be retained by such Party for at least five (5) years after the term of this Agreement or such longer period as may be required by applicable laws. Each Party shall have the right to review and copy such records maintained by the other Party at reasonable times and to obtain access to originals to the extent needed for patent or regulatory purposes or for other legal proceedings. Each Party shall provide the JDC with regular reports, at least annually, detailing its Development activities under the Development Plan and the results of such activities.

3.12 Subcontracts. Each Party may perform any of its Development Program obligations under this Agreement through one or more subcontractors or consultants, provided that (a) such Party remains responsible for the work allocated to, and payment to, such subcontractors and consultants as it selects to the same extent it would if it had done such work itself; (b) the subcontractor undertakes in writing obligations of confidentiality and non-use regarding Product Information and Confidential Information, that are substantially the same as those undertaken by the Parties pursuant to Article 12 hereof, and (c) the subcontractor agrees in writing to assign all intellectual property developed in the course of performing any such work under the Development Program to the Party retaining such subcontractor. A Party may also subcontract work on terms other than those set forth in this Section 3.12, with the prior approval of the JDC.

ARTICLE 4

REGULATORY MATTERS

4.1 Regulatory Filings and Approvals.

(a) In General. The Parties intend that the Development Plan will set forth the regulatory strategy for seeking Regulatory Approvals (including any pricing and reimbursement approvals) throughout the Territory for all Products being Developed. All decisions regarding regulatory issues shall be made in accordance with the decision-making rules that are set forth in Article 2.

(b) Rights and Obligations.

(i) Lead Regulatory Party. The lead regulatory Party, on a jurisdiction-by-jurisdiction basis, shall be responsible for preparing and filing all Regulatory Materials, including INDs, shall be the holder of all Regulatory Approvals in such jurisdiction and

will have primary operational responsibility for interactions with Regulatory Authorities, including taking the lead role at all meetings with Regulatory Authorities, subject to the right of the other Party to attend such meetings, participate in such activities and provide input, which the lead regulatory Party will consider in good faith. Without limitation, this right of participation covers all regulatory activities, including development of regulatory strategy and review of regulatory submissions, attendance at all meetings with Regulatory Authorities that may potentially impact the Development of or registration package for a particular Product, and review of outcomes of such meetings.

(ii) U.S. FibroGen shall be the lead regulatory Party in the U.S. with respect to each Product and each indication through approval of the first NDA or supplemental NDA for such Product and indication. The Parties shall cooperate in maintaining each IND and preparing and submitting each NDA and applying for Regulatory Approval in the U.S. Following such approval, FibroGen will assign and transfer each such approved NDA or supplemental NDA to AstraZeneca (but not the ownership of Development Data therein, which shall be retained by FibroGen pursuant to Section 3.10(a)), and AstraZeneca will become the lead regulatory Party for such Product and indication in the U.S.; provided that (A) FibroGen will remain the lead regulatory Party with respect to the CMC section of each NDA for so long as FibroGen is conducting manufacturing activities under this Agreement, and (B) FibroGen will continue to have access to all information in each NDA. FibroGen shall duly execute and deliver, or cause to be duly executed and delivered, such instruments and shall do and cause to be done such acts, including the filing of such assignments, agreements, documents and instruments, as may be reasonably necessary to effectively complete such assignment and transfer of such approved NDA or supplemental NDA to AstraZeneca. Each Party shall provide reasonable cooperation, information and other support to the other Party with respect to such other Party's obligations to comply with regulatory requirements, regardless of whether such other Party is the lead regulatory Party, including following the transfer of an NDA to AstraZeneca following Regulatory Approval.

(iii) RoW. AstraZeneca shall be the lead regulatory Party in the RoW for all Products and indications.

(c) Reporting and Review.

(i) The JPT or JDC shall develop and implement procedures for drafting and review of material Regulatory Materials for Products in the Territory, which shall provide sufficient time (at least one week) for each Party to provide substantive comments prior to the filing of such Regulatory Materials (with material regulatory filings, or regulatory filings that materially change existing regulatory filings, subject to prior approval by the JPT or, when formed, the JDC or the JSC pursuant to Section 2.2(c)(ix) or Section 2.3(b)(xv), as applicable).

(ii) Each Party shall promptly notify the other Party of all Regulatory Materials that it submits for Products anywhere in the Territory and shall promptly (and in any event within one week) provide the non-responsible Party with a copy (which may be wholly or partly in electronic form) of such Regulatory Materials. The lead regulatory Party will provide the non-responsible Party with reasonable advance notice of any scheduled meeting with any Regulatory Authority and/or any Regulatory Materials with respect to Products throughout the Territory, and the non-responsible Party shall have the right to participate in any such meeting,

except to the extent prohibited under applicable law and regulations. Representatives of the Party primarily responsible for such Regulatory Materials will be the primary spokespeople at any such meeting. The Party primarily responsible for such Regulatory Materials also shall promptly furnish the non-responsible Party with copies of all material correspondence to or from, and minutes of material meetings with, any Regulatory Authority relating to Development of such Product.

4.2 Notification of Threatened Action. Each Party shall immediately notify the other Party of any information it receives regarding any threatened or pending action, inspection or communication by or from any Third Party, including a Regulatory Authority, which may materially affect the Development, Commercialization or regulatory status of a Product, whether in or outside the Territory. Upon receipt of such information, the Parties shall consult with each other in an effort to arrive at a mutually acceptable procedure for taking appropriate action.

4.3 Adverse Event Reporting and Safety Data Exchange. At a time determined by the JSC, but in any event prior to the first to occur of (i) the commencement of any Clinical Trial to be conducted by AstraZeneca or (ii) the transfer of the first NDA in the U.S. to AstraZeneca, the Parties shall define and finalize the methods and procedures (based on and consistent where possible with those methods and procedures used by Astellas and FibroGen under the Astellas EU Agreement, unless otherwise mutually agreed) that the Parties shall employ with respect to Products to protect patient safety and promote the appropriate treatment of safety information of Products in a written pharmacovigilance agreement (the "***Pharmacovigilance Agreement***"). For clarity, the Pharmacovigilance Agreement shall include all relevant safety data regarding the Product, irrespective of territory or indication. These responsibilities shall include mutually acceptable guidelines and procedures for the receipt, investigation, recordation, communication, and exchange (as between the Parties) of adverse event reports, pregnancy reports, and any other information concerning the safety of any Product. Such guidelines and procedures shall be in accordance with, and enable the Parties to fulfill, local and national regulatory reporting obligations under applicable laws and regulations. Furthermore, such agreed procedure shall be consistent with GCP and relevant ICH guidelines, except where such guidelines may conflict with existing local regulatory reporting or safety reporting requirements, in which case the local reporting requirements shall prevail. FibroGen shall maintain a global safety database for the Products, the expenses for which will be included in Development Costs and reimbursed by AstraZeneca, to the extent not borne or reimbursed by Astellas. Each Party hereby agrees to comply with its respective obligations under such Pharmacovigilance Agreement and to cause its Affiliates and permitted sublicensees to comply with such obligations. If and to the extent necessary, the Pharmacovigilance Agreement shall be amended by the Parties, or shall be superseded, so that an appropriate commercial-stage pharmacovigilance agreement is in place in advance of the first NDA approval for a Product.

4.4 Product Withdrawals and Recalls. If any Regulatory Authority in or outside the Territory (a) threatens, initiates or advises any action to remove any Product from the market or (b) requires or advises FibroGen, AstraZeneca, or any of their respective Affiliates or Sublicensees to distribute a "Dear Doctor" letter or its equivalent regarding use of such Product, then FibroGen or AstraZeneca, as applicable, shall notify the other Party of such event within three (3) Business Days (or sooner if required by law) after such Party becomes aware of the action, threat, advice or requirement (as applicable). The JSC will discuss and attempt to agree upon whether to recall or

withdraw a Product; provided, however, that if the Parties fail to agree within an appropriate time period, the Party who is the then-holder of the NDA for the Product at issue shall decide whether to recall or withdraw such Product. AstraZeneca shall be responsible, at its sole expense, for conducting any recalls or taking such other necessary remedial action in the Territory, except that FibroGen will be responsible for such expenses to the extent (i) resulting from the failure of any Product supplied by FibroGen to conform to the applicable specifications; or (ii) such recall results from an event outside the Territory and outside the territory licensed under the China Agreement.

ARTICLE 5

COMMERCIALIZATION

5.1 Overview. The Parties agree to collaborate with respect to the Commercialization of Products in the Field in the U.S. as provided in this Article 5 under the direction of the JCC, and pursuant to the U.S. Commercialization Plan applicable to each Product. AstraZeneca shall have the sole right and responsibility for Commercializing Products in the Field in the RoW under the direction of the JCC, in accordance with this Agreement and as provided in this Article 5. Prior to the JCC's inception, all references to the JCC in this Article 5 and elsewhere in this Agreement will be deemed references to the JSC (which may delegate certain responsibilities to the Core JPT in accordance with Schedule G(b)).

5.2 U.S. Commercialization Plan. As further described in this Section 5.2, the comprehensive strategy for the Commercialization of each Product in the U.S. shall be described in a comprehensive plan that describes the pre-launch, launch and subsequent Commercialization of such Product in the U.S. (including without limitation the high level strategies regarding messaging, branding, pricing, advertising, planning, marketing, sales force training and allocation, and reimbursement/managed care), key tactics for implementing those activities and the relative responsibilities of the Parties (each such plan, a "***U.S. Commercialization Plan***"), and the associated budget for such activities that details the anticipated Commercialization Costs (each such budget, a "***U.S. Commercialization Budget***").

(a) Promptly after the Effective Date, the JCC (or if not formed, the JSC) will determine the initial pre-commercial activities for which AstraZeneca will prepare an initial U.S. Commercialization Plan, which activities will include [*], but need not include all activities described in the first paragraph of this Section 5.2. Within ninety (90) days thereafter, AstraZeneca will present such plan to the JCC for review and approval. Within two (2) years after the Effective Date but in any event not later than two (2) years prior to the then currently anticipated NDA submission date, AstraZeneca will present to the JCC a U.S. Commercialization Plan covering all activities described in the first paragraph of this Section 5.2, for review and approval by the JCC, which plan will include the key prelaunch and launch activities, marketing and sales deployment required for the initial launch of the Product and associated budgets. The JCC shall review, revise and recommend for approval by the JSC such U.S. Commercialization Plan promptly after receipt thereof. If the JCC is not yet formed by any of the foregoing dates, the JSC will review, revise and approve the applicable U.S. Commercialization Plan.

(b) AstraZeneca will prepare a detailed U.S. Commercialization Plan and U.S. Commercialization Budget in preparation for U.S. launch of the Product for review and approval by the JCC no later than the submission of the first NDA for the Product, or at such other time determined by the JSC.

(c) All U.S. Commercialization Plans and U.S. Commercialization Budgets with respect to Products in the U.S. and subsequent revisions thereto will contain such information as the JCC believes necessary for the successful Commercialization of such Product in the U.S., both pre- and post-launch, and shall generally conform to the level of detail utilized by AstraZeneca in preparation of its own product commercialization plans. On an annual basis (no later than October 31st of the preceding Calendar Year), or more often as the Parties deem appropriate, the JCC shall prepare amendments to the then-current U.S. Commercialization Plan(s) and the corresponding U.S. Commercialization Budgets. In the event of any inconsistency between a U.S. Commercialization Plan and this Agreement, the terms of this Agreement shall prevail. Each Party shall conduct its activities under the U.S. Commercialization Plan in compliance in all material respects with all applicable laws and regulations.

5.3 RoW Commercialization Plans. AstraZeneca shall prepare Commercialization plans with respect to Products in the RoW on an annual basis, shall submit such plans to the JCC for review and approval, and shall respond in a timely fashion to any reasonable requests of FibroGen or the JCC with respect to such plans and Commercialization activities in the RoW.

5.4 Commercialization Costs. AstraZeneca shall be solely responsible for all Commercialization Costs incurred by it or by or on behalf of FibroGen under the Co-Commercialization Agreement and in the Commercialization of Products in the U.S. and RoW. AstraZeneca will reimburse FibroGen for such costs incurred by FibroGen, plus a markup of [*] to be applied to FibroGen's [*] costs only, all pursuant to more detailed provisions to be included in the Co-Commercialization Agreement.

5.5 Sales and Distribution; Returns; Customer Support. AstraZeneca shall be solely responsible for handling all returns, recalls, order processing, invoicing and collection, booking of sales, distribution, and inventory and receivables for Products in the Territory. FibroGen shall not accept orders for Products or make sales for its own account or for AstraZeneca's account, and if FibroGen receives any order for Products in the Territory, it shall refer such orders to AstraZeneca for acceptance or rejection. AstraZeneca shall be responsible for handling all returns of any Product. If Products are returned to FibroGen, FibroGen shall promptly ship such Products to AstraZeneca. FibroGen, if requested by AstraZeneca, shall advise the customer who made the return that the Products have been returned to AstraZeneca. AstraZeneca shall be responsible for providing customer support, handling medical queries, and responding to product and medical complaints relating to Products.

5.6 Commercialization Reports. Each Party shall keep the JCC fully informed regarding the progress and results of Commercialization activities for Products in the U.S. and RoW, including an annual review of results versus plans (as set forth in the U.S. Commercialization Plan(s)).

5.7 Samples. At a time determined by the JSC, the Parties will discuss in good faith whether, how, and under what circumstances the Parties would allow distribution of samples (i.e., Products provided free of or for a nominal charge) of Product for treatment of anemia in patients

with chronic kidney disease not undergoing dialysis, or in other applicable indications outside of the CKD Indications. Neither Party will have the right to distribute Product samples without the prior written consent of the other Party, and, if such consent is granted, each Party will distribute such samples only according to the procedures and in the amounts agreed by the Parties in writing.

5.8 Commercialization Standards of Conduct.

(a) Execution of U.S. Commercialization Plan. Each Party shall use Commercially Reasonable Efforts to carry out the tasks assigned to it under the U.S. Commercialization Plan and the Co-Commercialization Agreement in a timely and effective manner and in compliance with all applicable laws and regulations.

(b) AstraZeneca Diligence Obligations. AstraZeneca shall use Commercially Reasonable Efforts to Commercialize each Product in each indication and country in the Territory for which Regulatory Approval is obtained, except for indications and countries for which FibroGen has independently obtained Regulatory Approval, without opt-in by AstraZeneca, under Section 3.3(b).

5.9 Subcontracts. Each Party may perform any of its obligations under the U.S. Commercialization Plan through one or more subcontractors or consultants, provided that (a) AstraZeneca will not subcontract any such activities without [*]; (b) such Party remains responsible for the work allocated to, and payment to, such subcontractors and consultants as it selects to the same extent it would if it had done such work itself; (c) the subcontractor undertakes in writing obligations of confidentiality and non-use regarding Product Information and Confidential Information, that are substantially the same as those undertaken by the Parties pursuant to Article 12 hereof, and (d) the subcontractor agrees in writing to assign all intellectual property developed in the course of performing any such work under the U.S. Commercialization Plan to the Party retaining such subcontractor. A Party may also subcontract work on terms other than those set forth in this Section 5.9, with the prior approval of the JCC. AstraZeneca will have [*] (subject to compliance with clauses (b) – (d) of this Section 5.9), except that AstraZeneca will be required to reasonably [*] Third Party subcontractors for such activity.

5.10 Co-Commercialization Agreement. Following submission of the first NDA for a Product or at such earlier time as AstraZeneca may request, the Parties will negotiate and enter into an agreement (the "***Co-Commercialization Agreement***") governing the Parties' conduct of activities for Commercializing the Product in the U.S. The Co-Commercialization Agreement will be consistent with the terms of this Article 5, **Exhibit I**, other terms agreed by the Parties, and other customary terms for such an agreement.

5.11 Regulatory Compliance.

(a) Each of FibroGen and AstraZeneca shall reasonably cooperate with the other Party in its efforts toward ensuring that all government reporting (including price and gift reporting), sales, marketing and promotional practices in respect of each Product meet the standards required by (A) applicable laws and regulations; (B) applicable guidelines concerning the advertising and promotion of prescription drug products, including without limitation the Office of the Inspector General's ("***OIG***") Compliance Guidance Program issued in 2003, the

American Medical Association (the "***AMA***") Guidelines on Gifts to Physicians, the Pharmaceutical Research and Manufacturers of America Code on Interactions with Healthcare Professionals, as hereafter amended from time to time (the "***PhRMA Code***"), the PhRMA Principles on Conduct of Clinical Trials and Communication of Clinical Trial Results, and the standards set forth by the Accreditation Council for Continuing Medical Education relating to educating the medical community in the United States ("***ACCME Standards***"); (C) the Prescription Drug Marketing Act of 1987, as amended, and the rules, regulations and guidelines promulgated thereunder; (D) federal, state and local agencies and all payor "fraud and abuse", and consumer protection and false claims statutes and regulations, including the Medicare and State Health Programs Anti-Kickback Law (42 U.S.C. §1320a-7b(b)) and the Safe Harbor Regulations which are found at 42 C.F.R. §1001.952 et seq.; and (E) the FCPA. The Parties shall cooperate in good faith to update their obligations under this Section 5.11(a) from time to time to reflect any changes in any of the foregoing (A) – (E) or to resolve any conflicts in any of the foregoing standards as applied to the Parties' activities under this Agreement.

(b) Each Party shall be responsible for tracking and reporting transfers of value initiated and controlled by its employees and/or contractors pursuant to the requirements of Section 6002 (Transparency Reports and Reporting of Physician Ownership and Investment Interest) of the Affordable Care Act, commonly referred to as the "Sunshine Act", and state marketing reporting laws. The value reported to the Centers for Medicare & Medicaid Services shall be the amount expended by the controlling Party, irrespective of the division of or reconciliation of expenses between the Parties.

(c) AstraZeneca shall provide its sales representatives appropriate training on proper marketing and sales techniques. Such training will include, among other topics, FDA requirements and other state and federal regulations and guidelines concerning the advertising of prescription drug products, the OIG Compliance Guidance Program, the AMA Guidelines on Gifts to Physicians, the PhRMA Code, and the ACCME Standards. If requested by FibroGen, AstraZeneca shall provide a written description of the training to FibroGen no less frequently than on an annual basis.

(d) Each of FibroGen and AstraZeneca shall reasonably cooperate with the other Party to provide the other Party access to any and all information, data and reports required by the other in order to comply with the relevant provisions of the Medicare Modernization Act and any other applicable laws and regulations, including without limitation reporting requirements, in a timely and appropriate manner. AstraZeneca shall ensure that its reporting to the Centers for Medicare and Medicaid Services and other federal and state healthcare programs related to the Products is true, complete and correct in all respects; provided however, that AstraZeneca shall not be held responsible for submitting erroneous reports if such deficiencies result from information provided by FibroGen which itself was not true, complete and correct.

(e) AstraZeneca shall, so far as practicable, provide to FibroGen in advance any submission containing any information provided by FibroGen pursuant to this Section 5.11 that AstraZeneca proposes to submit to any governmental entity. AstraZeneca further agrees to seek confidential treatment of any such information related to FibroGen that it submits to any governmental entity to the extent permitted under any applicable laws and regulations.

(f) FibroGen and AstraZeneca shall confer with each other on a regular basis to discuss and compare their respective procedures and methodologies relating to each Party's compliance to any applicable laws or regulations or fulfillment of any other obligation contained in this Section 5.11. In the event that the parties have different understandings or interpretations of this Section 5.11 or of the applicability of, or standards required by, any applicable laws or regulations, then the Parties shall confer and seek to reach common agreement on such matters.

(g) Each of AstraZeneca and (where applicable) FibroGen agrees that:

(i) it will instruct its sales representatives to use, and will use Commercially Reasonable Efforts to train and monitor its sales representatives to ensure that such sales representatives use, only Promotional Materials and literature approved for use under subsection (h) of **Exhibit I** for the promotion of the Products in the U.S.;

(ii) it will instruct its sales representatives not to misbrand, change, alter or adulterate any Promotional Materials supplied to it in any way prior to or during their distribution or use; and

(iii) it will instruct its sales representatives to do, and will use Commercially Reasonable Efforts to train its sales representatives to do, and will establish appropriate internal systems, policies and procedures for the monitoring of its sales representatives with the goal of ensuring that such personnel do, the following:

(1) limit claims of efficacy and safety for the Products to those that are (A) consistent with approved promotional claims in, and not add, delete or modify claims of efficacy and safety in the promotion of such Products in any respect from those claims of efficacy and safety that are contained in, the then effective U.S. Commercialization Plan, (B) consistent with applicable laws and regulations, and (C) consistent with the Product labeling approved by the FDA;

(2) not make any changes in Promotional Materials, and use Promotional Materials within the U.S. only in a manner that is consistent with (A) the then effective U.S. Commercialization Plan, (B) applicable laws and regulations and (C) the Product labeling approved by the FDA;

(3) promote the Products in compliance with applicable legal and professional standards that are generally accepted by the pharmaceutical industry in the applicable market, including applicable laws and regulations and the applicable guidelines concerning the advertising and promotion of prescription drug products described in this Section 5.11; and

(4) not to, directly or indirectly, pay, promise to pay, or authorize the payment of any money, or give, promise to give, or authorize the giving of anything of value to any official or employee of any Governmental Authority, or to any political party, or official thereof, or to any candidate for political office (including any party, official, or candidate) for the purpose of promoting the sale or improper use of a Product.

ARTICLE 6

MANUFACTURE AND SUPPLY

6.1 Purchase and Supply Commitment. AstraZeneca hereby appoints FibroGen as its exclusive supplier of Product (drug substance and drug product) for the Territory for use in accordance with the terms of this Agreement. AstraZeneca agrees to purchase, and FibroGen agrees to supply, all of AstraZeneca's and its Affiliates' and their respective Sublicensees' requirements of Product (as bulk drug product and drug substance) for Development and Commercialization in the Territory under the terms of this Article 6. AstraZeneca shall have the exclusive right to perform (itself or through its Affiliates, Sublicensees or Distributors) and shall be solely responsible for final product labeling and secondary packaging for sale to end users in the Territory. To the extent that such labeling and packaging are relevant to FibroGen's activities to seek and obtain Regulatory Approval for the Product, AstraZeneca will reasonably and timely cooperate with FibroGen, in a manner sufficient to enable FibroGen to receive Regulatory Approval and to provide materials and Information as requested by FibroGen. The right of FibroGen to manufacture on behalf of AstraZeneca contemplates that at a time to be determined by the JSC, and in any event before the point in time when [*] in any twelve (12) month period, AstraZeneca will have the right to select, or obligate FibroGen to select, a second supplier (which may be AstraZeneca itself), and FibroGen will have the obligation to complete activities to undertake technology transfer in order for such secondary source to establish and secure regulatory approval as a second source for drug substance for Product, which shall in any event not limit FibroGen's right to continue to ensure that a source of Product be maintained in the U.S. in order to satisfy FibroGen's obligations under the Astellas Agreements and the DFCI Agreement. For clarity, FibroGen shall have the right to manufacture Product outside the Territory to fulfill its supply obligations under this Agreement. For clarity, subject to the terms of this Agreement, FibroGen shall have the right to satisfy its obligations under this Article 6 through a Third Party contract manufacturer. In connection with FibroGen's manufacture of Products for use under this Agreement, FibroGen shall have the right to manufacture in the Territory for supply of Products under the Astellas Agreements.

6.2 Development Supply. In connection with the supply of any Product for non-commercial use, FibroGen shall supply Product in compliance with applicable law and regulations, including GMP requirements, and in accordance with forecasts set forth in the Development Plan or, if not specified therein, the forecasts developed by the JDC as necessary for the conduct of Clinical Trials set forth in the Development Plan. FibroGen shall use Commercially Reasonable Efforts to meet any applicable timelines for supplying Product, subject to the reasonable lead time requirements of Third Party contract manufacturers. AstraZeneca will pay FibroGen's Fully Burdened Cost for all Product supplied for Development, within forty-five (45) days after receipt of invoice therefor. All Products supplied for a country after Regulatory Approval in such country will be considered to be for commercial use, unless used specifically for Clinical Trials under the Development Plan. The terms of supply by FibroGen to AstraZeneca for use in any Clinical Trial conducted under the sponsorship of AstraZeneca or for other non-commercial use by or on behalf of AstraZeneca, are as set forth on **Exhibit J**.

6.3 Commercial Supply Agreement. At a time specified by AstraZeneca, but in any event in a reasonable period in advance of the anticipated launch date for the Product in the U.S.,

[*] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed separately with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

the Parties will negotiate in good faith and enter into separate supply and quality agreements governing the commercial supply of Product (in bulk and primary packaged forms) from FibroGen to AstraZeneca (together, the "***Supply and Quality Agreement***"). The Supply and Quality Agreement will include the terms and conditions set forth on **Exhibit K** and contain such further customary and commercially reasonable terms governing similar supply arrangements and other terms as the Parties may agree, including appropriate forecasting and firm purchase order lead times, taking into consideration the reasonable notice requirements of FibroGen as well as any other terms set forth in this Article 6. The initial Supply and Quality Agreement shall have a term of [*] years for the supply of drug substance, after which AstraZeneca would have the right to extend the term for an additional [*] years or to assume responsibility for drug substance manufacture upon agreement of terms mutually agreed by the Parties, including [*] in the form of drug substance. Under the Supply and Quality Agreement, the obligation to supply drug product shall have a term of five (5) years, which will automatically renew for succeeding five (5)-year terms and will include the price applicable pursuant to Section 6.5. In the event of any inconsistency between the Supply and Quality Agreement and Article 6 of this Agreement with regard to matters relating to supply, quality control and quality assurance, the terms of the Supply and Quality Agreement shall prevail.

6.4 Contract Manufacture Process. FibroGen is currently utilizing a contract manufacturer to fulfill its manufacturing timelines to complete drug product development in time for the expected commercial launch of the Product in the U.S. and under the Astellas Agreements. Notwithstanding the provisions of Section 6.3, upon AstraZeneca's written request to FibroGen, not to be submitted earlier than six (6) months after the Effective Date, the Parties will discuss in good faith whether to select a separate contract manufacturer mutually acceptable to the Parties to be used for formulation and bulk drug product manufacture (using drug substance supplied by FibroGen) for commercial supply under this Agreement. The Parties shall discuss in good faith the transfer, including timely technology transfer, as soon as practicable following such mutual agreement. Such selection will be conducted in accordance with the following process: As soon as reasonably practicable following AstraZeneca's request, the Parties will afford an opportunity for at least two (2) different Third Party contract manufacturers that are mutually acceptable to the Parties, consent not to be unreasonably withheld, to submit bids to conduct such manufacture. Such bids shall be based on a request for quotation, the contents of which shall be agreed by the Parties in good faith (and shall contain such specifications and forecasts as are reasonably necessary for a contract manufacturer to submit a bid with respect to such manufacture). AstraZeneca and its Affiliates shall provide a proposal on the same basis as the Third Party contract manufacturers. The Parties shall review and assess in good faith the bids submitted by the Third Party manufacturers and by AstraZeneca or its Affiliate and shall recommend to the JDC the bid that, on the whole, offers the most favorable terms for such manufacture based on a reasonable assessment of the relevant factors, including price, capital requirements, quality, capacity, capability to maintain continuity of supplies, considerations related to the supply of Product to Astellas and global supply of Product and overall timeline. FibroGen will enter into a supply and quality contract with the Third Party contract manufacturer, on terms consistent with the selected bid and otherwise reasonably acceptable to the Parties, or the responsibility to manufacture shall be transferred to AstraZeneca, as determined by the JDC. In the event FibroGen shall contract with AstraZeneca or its Affiliate in accordance with this Section 6.4, FibroGen shall – as soon as reasonably practicable after the completion of the selection process – provide the necessary technology transfer as well as all necessary assistance to obtain required regulatory approvals, all

to enable AstraZeneca or its Affiliate to conduct the formulation and bulk drug product manufacture (using drug substance supplied by FibroGen) for supply of Product under this Agreement, and to Astellas under the Astellas Agreements. If AstraZeneca is not selected as the contract manufacturer, then at any time after the [*], at AstraZeneca's request, the Parties shall [*]. For clarity, to the extent that the alternative formulation and drug product manufacture is transferred to such Third Party, FibroGen shall have the right to use such source of supply to satisfy FibroGen's obligations under the Astellas Agreements.

6.5 Transfer Price.

(a) FibroGen will supply to AstraZeneca (or its designated Affiliate or Sublicensee) Product for commercial use as drug product at a transfer price equal to [*] during the Calendar Year in which such Product is delivered. Notwithstanding the foregoing, in the event that the Parties agree that AstraZeneca shall supply drug product and FibroGen shall only supply drug substance, the transfer price for such drug substance shall be [*] during the Calendar Year in which such Product is delivered.

(i) If FibroGen supplies Product as drug product, then not less than thirty (30) days prior to the beginning of each Calendar Year during which FibroGen will be supplying product (each a "***Delivery Year***"), the Parties will calculate a preliminary transfer price per unit (the "***Preliminary Price Per Unit***"), which shall be equal to [*] multiplied by the fraction (A)/(B), where (A) shall be the estimated [*] for such Delivery Year and (B) shall be the estimated [*] in the Territory during such Delivery Year (all estimations to be made by the Parties in good faith). FibroGen will invoice AstraZeneca upon delivery of each shipment of product at the Preliminary Price Per Unit and AstraZeneca will pay for such product at such price within forty-five (45) days after its receipt of such invoice. Within forty-five (45) days following the end of each Delivery Year, the Parties will calculate the definitive transfer price per unit ("***Definitive Price Per Unit***") for such year, which shall be equal to [*] multiplied by the fraction (A)/(B), where (A) shall be the actual [*] made during the Delivery Year and (B) shall be the actual [*] in the Territory during such Delivery Year (excluding [*]). If the transfer price for the total volume of product actually delivered by FibroGen during the Delivery Year at the Definitive Price Per Unit (the "***Total Definitive Price***") exceeds the transfer price for such volume based on the Preliminary Price Per Unit (the "***Total Preliminary Price***"), then AstraZeneca shall pay the difference to FibroGen within forty-five (45) days after its receipt of an invoice from FibroGen for such amount. If the Total Preliminary Price exceeds the Total Definitive Price, FibroGen shall issue a credit note to AstraZeneca for the difference. AstraZeneca shall be entitled to set off the amount due under the credit note against any subsequent payments owed by AstraZeneca to FibroGen under this Agreement (or, in the absence of any such subsequent payments, such credit note shall be settled by FibroGen within forty-five (45) days after its receipt thereof).

(ii) If FibroGen supplies Product as drug substance, then the Parties shall calculate the price for Product according to a process similar to that described in clause (i) above, except that the multiplier shall be [*] during the Delivery Year.

(b) Potential Cost Reductions. At either Party's request during the Term, the Parties shall discuss and explore potential means of collaborating to reduce the overall costs of manufacture and supply of Products as drug substance or bulk drug product under this Agreement,

with the understanding that the Parties shall share the financial benefits of any such cost reductions achieved in a reasonable manner taking into account to what extent each Party has contributed to such cost reductions.

(c) Adjustment for Generic Entry. If at any time FibroGen's net margin percentage on any Product supplied to AstraZeneca falls below [*] after a Generic Product is sold in any country in the Territory, FibroGen shall have the right to renegotiate the manufacturing and supply payment terms under the Supply and Quality Agreement. Upon FibroGen's request, the Parties shall renegotiate reasonable terms in good faith, taking into account also the overall profitability of such Product to AstraZeneca.

ARTICLE 7

LICENSES AND EXCLUSIVITY

7.1 License to AstraZeneca.

(a) License Grant. Subject to the terms and conditions of this Agreement, FibroGen hereby grants AstraZeneca (i) a co-exclusive (with FibroGen), royalty-bearing, sublicensable (solely as permitted in accordance with Section 7.3) license under the FibroGen Technology to Develop (solely in accordance with the Development Plan) Products in the Field in the Territory and (ii) an exclusive, royalty-bearing, sublicensable (solely as permitted in accordance with Section 7.3) license under the FibroGen Technology to Commercialize, to make and have made (solely for use in the Territory under this Agreement), and to use, sell, offer for sale, and import Products in the Field in the Territory (subject, however to a retained right for FibroGen to perform Development and Commercialization (including manufacturing) activities pursuant to this Agreement or the China Agreement or under the Astellas Agreements).

(b) DFCI Agreement.

(i) The terms and conditions of Sections [*] of the DFCI Agreement are binding on AstraZeneca in its capacity as a sublicensee of FibroGen under the DFCI Agreement.

(ii) AstraZeneca acknowledges and agrees that its rights to the FibroGen Technology that is licensed to FibroGen under the DFCI Agreement are at all times subject to the applicable terms of the DFCI Agreement. [*].

(iii) FibroGen shall use best efforts to maintain the DFCI Agreement in effect. [*].

(iv) The license granted in Section 7.1(a) is subject to certain reserved rights as set forth in Section [*] of the DFCI Agreement.

7.2 License to FibroGen. Subject to the terms and conditions of this Agreement, AstraZeneca hereby grants FibroGen a non-exclusive, worldwide, sublicensable, royalty-free, fully-paid license, under the AstraZeneca Technology during the Term, to conduct any and all activities assigned to FibroGen under the Development Plans and U.S. Commercialization Plans, and to Develop and Commercialize Products outside the Territory.

7.3 Sublicensing.

(a) Scope of Permissible Sublicensing. The license granted by FibroGen to AstraZeneca in Section 7.1 may be sublicensed by AstraZeneca: (i) to an Affiliate of AstraZeneca without any requirement of consent, provided that such sublicense to an Affiliate of AstraZeneca shall immediately terminate if and when such party ceases to be an Affiliate of AstraZeneca, or (ii) where such sublicense is made to enable a Third Party to provide contract research or development services or contract manufacturing services for AstraZeneca, its Affiliates or Sublicensees, without such Third Party being granted the right to distribute, market or sell a Product, to such Third Party without any requirement of consent, but upon written notice to FibroGen and subject to Sections 3.12 and 5.9, and no sooner than twelve (12) days after such notice, or (iii) otherwise (i.e. other than pursuant to (i) or (ii) above) only with the prior written consent of FibroGen, not to be unreasonably withheld, and no sooner than twelve (12) days after such consent is obtained. It will not be unreasonable for FibroGen to withhold its consent to a sublicense pursuant to subsection (iii) above to (1) any entity that [*] or (2) any company engaged in the sales of tobacco or tobacco-related products. AstraZeneca shall be liable to FibroGen for the acts or omissions of its Sublicensees, and any breach of an applicable provision of this Agreement by a Sublicensee shall be deemed to be a breach by AstraZeneca.

(b) Sublicense Agreements. AstraZeneca shall, in each agreement under which it grants a sublicense under a license set forth in Section 7.1 (each, a "***Sublicense Agreement***"), require the Sublicensee to (A) comply with the obligations in Section 7.8 (as applied to such Sublicensee and its Affiliates) and (B) provide the following to FibroGen if this Agreement terminates and to AstraZeneca if only such Sublicense Agreement terminates: (i) the assignment and transfer of ownership and possession of all Regulatory Materials and Regulatory Approvals held or possessed by such Sublicensee (which assignment could also be directly to AstraZeneca prior to any such termination), and (ii) the assignment of, or a freely sublicensable exclusive license to, all intellectual property Controlled by such Sublicensee that covers or embodies a Product or Collaboration Compound or its respective use, manufacture, sale, or importation and was created by or on behalf of such Sublicensee during the exercise of its rights or fulfillment of its obligations pursuant to such Sublicense Agreement. Each Sublicense Agreement shall be subject to the applicable terms and conditions of this Agreement, the DFCI Agreement and any Third Party licenses sublicensed to the Sublicensee. AstraZeneca shall include a copy of the DFCI Agreement in all Sublicense Agreements. AstraZeneca shall forward a copy of each Sublicense Agreement (which may be redacted but shall contain all provisions relevant to this Agreement unredacted) to FibroGen within twenty (20) days after execution thereof, and FibroGen shall have the right to provide such copy to DFCI; provided that with respect to any Sublicense Agreement with an Affiliate of AstraZeneca, AstraZeneca shall only be required to provide such copy upon FibroGen's request. Annually, AstraZeneca shall forward to FibroGen a copy of the reports received by AstraZeneca from its Sublicensees during the preceding twelve (12) month period under each Sublicense Agreement as shall be pertinent to (i) the Sublicensee's operations under each Sublicense Agreement and (ii) a royalty accounting under the Sublicense Agreement, in each case solely to the extent relevant to FibroGen's rights under this Agreement or (to the extent different, as notified by FibroGen to AstraZeneca) DFCI's rights under the DFCI Agreement. FibroGen shall have the right to provide each such report to DFCI. FibroGen shall require DFCI to comply with confidentiality and non-use obligations in respect of information disclosed to DFCI in accordance with this Section 7.3(b), which obligations shall be substantially the same as those undertaken by the Parties pursuant to Article 12.

(c) Distributorships. AstraZeneca shall have the right, in its sole discretion, to appoint its Affiliates, and AstraZeneca, its Affiliates and its Sublicensees shall have the right, in their sole discretion, to appoint any other person or entity, in the Territory, to distribute, market and sell the Products, with or without packaging rights. In circumstances where such appointed person or entity purchases its requirements of Products from AstraZeneca, its Affiliates or its Sublicensees, but does not otherwise make any royalty or other payment to AstraZeneca, its Affiliates or its Sublicensees with respect to intellectual property rights, and where such person is not an Affiliate of AstraZeneca, then that person or entity shall be a "***Distributor***" for purposes of this Agreement. The term "packaging rights" in this Section 7.3(c) shall mean the right for the Distributor to package Products supplied in unpackaged bulk form into individual ready-for-sale packs.

(d) Co-Promotion. Subject to Section 5.9, AstraZeneca and its Affiliates shall have the right, in their sole discretion, to co-promote the Products with any other person or entity, or to appoint one or more Third Parties to promote the Products without AstraZeneca in all or any part of the Territory, provided however that the foregoing shall not adversely impact FibroGen's right to co-promote the Product as described under this Agreement.

7.4 FibroGen's Activities.

(a) Covenant by FibroGen. Except pursuant to this Agreement or the China Agreement, FibroGen and its Affiliates shall not, and shall not license or authorize any Third Party to, directly or indirectly,

(i) at any time during the Term Develop or Commercialize any Product in the Territory within or outside of the Field;

(ii) at any time during the period starting on the Effective Date and continuing until the earlier to occur of (A) the [*] this Agreement and (B) the [*] this Agreement ("***Covenant Period 1***") Develop any HIF Compound in any ESA Indication in the Territory or any indication for which AstraZeneca is Developing or Commercializing a Collaboration Compound or Product under this Agreement; and

(iii) at any time during the period starting on the Effective Date and continuing until the earlier to occur of (A) the [*] of this Agreement and (B) the [*] in the Territory ("***Covenant Period 2"***) Commercialize any HIF Compound in any ESA Indication in the Territory or any indication for which AstraZeneca is Developing or Commercializing a Collaboration Compound or Product under this Agreement.

(b) Astellas Agreements. [*].

(c) Termination of Astellas Agreements. Effective upon the termination of either of the Astellas Agreements with respect to a particular country or countries (the "***Astellas Terminated Territory***"), FibroGen hereby grants AstraZeneca a right of first negotiation to obtain a license to develop and commercialize Products in the Astellas Terminated Territory, as detailed

in this Section 7.4(c). Accordingly, prior to entering into any agreement with a Third Party for such purpose, FibroGen shall provide to AstraZeneca a written notice of FibroGen's interest in entering into an agreement with respect to the development and/or commercialization of Products in the Astellas Terminated Territory. [*]. If the Parties do not reach an agreement with respect to the grant of such rights with respect to Products in the Astellas Terminated Territory [*] FibroGen shall have no further obligation with respect to the Astellas Terminated Territory under this Section 7.4(c). Notwithstanding the foregoing sentence, if FibroGen enters into an agreement with a Third Party (a "***Subsequent Licensee***") with respect to the Products and the Astellas Terminated Territory (a "***Subsequent Agreement***"), FibroGen shall ensure that such Subsequent Agreement does not conflict with the terms of this Agreement and shall use Commercially Reasonable Efforts to ensure that AstraZeneca [*] under such Subsequent Agreement [*], and in any event shall ensure that AstraZeneca's rights with respect to the Subsequent Licensee [*].

(d) Remedy. FibroGen hereby acknowledges and agrees that in the event of any actual or threatened breach of this Section 7.4, AstraZeneca will suffer an irreparable injury, such that no remedy at law shall afford it adequate protection against, or appropriate compensation for, such injury. Accordingly, FibroGen hereby agrees that AstraZeneca shall be entitled to specific performance of FibroGen's obligations under this Section 7.4, as well as such further timely injunctive relief as may be granted by a court of competent jurisdiction.

7.5 Cross-Territorial Restriction.

(a) AstraZeneca hereby covenants and agrees that it shall not, and will ensure that its Affiliates and Sublicensees will not, either directly or indirectly, actively promote, market, distribute, import, sell or have sold Product into countries outside the Territory. As to such countries outside the Territory: (i) AstraZeneca shall not, and will ensure that its Affiliates and Sublicensees will not, engage in any advertising or promotional activities relating to the Product directed primarily to customers or other buyers or users of the Product located in such countries; and (ii) AstraZeneca shall not, and will ensure that its Affiliates and Sublicensees will not, solicit orders for Products from any prospective purchaser located in such countries. If AstraZeneca receives any order for Products from a prospective purchaser located in a country outside the Territory from which re-imports into the Territory are unlikely, AstraZeneca shall immediately refer that order to FibroGen. AstraZeneca shall not accept any such orders. AstraZeneca may not deliver or tender (or cause to be delivered or tendered) any Product into a country outside of the Territory from which re-imports into the Territory are unlikely. AstraZeneca shall not, and will ensure that its Affiliates and Sublicensees will not, restrict or impede in any manner FibroGen's exercise of its retained rights outside the Territory, provided that any such exercise of rights by FibroGen shall comply with the terms of this Agreement.

(b) FibroGen hereby covenants and agrees that it shall not and will ensure that its Affiliates and any Subsequent Licensee shall not, either directly or indirectly, actively promote, market, distribute, import, sell or have sold Product into countries within the Territory. As to such countries within the Territory: (i) FibroGen shall not, and will ensure that its Affiliates and Subsequent Licensees will not, engage in any advertising or promotional activities relating to the Product directed primarily to customers or other buyers or users of the Product located in such countries; and (ii) FibroGen shall not, and will ensure that its Affiliates and Subsequent Licensees will not, solicit orders for Products from any prospective purchaser located in such countries. If

FibroGen receives any order for Products from a prospective purchaser located in a country within the Territory from which re-imports out from the Territory are unlikely, FibroGen shall immediately refer that order to AstraZeneca. FibroGen shall not accept any such orders. FibroGen may not deliver or tender (or cause to be delivered or tendered) any Product into a country within the Territory from which re-imports out of the Territory are unlikely. FibroGen shall not, and will ensure that its Affiliates and Subsequent Licensees will not, restrict or impede in any manner AstraZeneca's rights within the Territory, provided that any such exercise of rights by AstraZeneca shall comply with the terms of this Agreement. In addition to the foregoing, FibroGen shall use Commercially Reasonable Efforts to invoke and enforce the provisions of the Astellas Agreements with respect to restrictions on supply and commercialization in the Territory.

7.6 Negative Covenant. Each Party covenants that it will not knowingly use or practice any of the other Party's intellectual property rights licensed to it under this Article 7 except for the purposes expressly permitted in the applicable license grant.

7.7 No Implied Licenses. Except as explicitly set forth in this Agreement, neither Party grants to the other Party any license, express or implied, under its intellectual property rights. This Agreement confers no license or rights by implication, estoppel, or otherwise under any patent applications or patents owned in whole or in part by DFCI other than the particular patents and patent applications licensed under the DFCI Agreement.

7.8 Exclusivity.

(a) Restrictive Covenant by AstraZeneca. Except pursuant to this Agreement or the China Agreement, AstraZeneca and its Affiliates shall not, and shall not license or authorize any Third Party to, directly or indirectly,

(i) at any time during Covenant Period 1, or such longer period as may follow from Section 13.6(i), research or Develop any HIF Compound in the Field; or

(ii) at any time during Covenant Period 2 and three (3) years thereafter, Commercialize any HIF Compound in the Field and in the Territory.

(b) Acquisition. Notwithstanding the foregoing in Section 7.8(a), neither AstraZeneca's nor any of its Affiliates' direct or indirect acquisition of or merger with, in whole or in part, a person or entity (or group of companies) or the business of a person or entity (or group of companies) having any activity contravening the covenants set forth in Section 7.8(a) shall constitute a breach of such covenants by AstraZeneca if AstraZeneca or its Affiliate, as the case may be, notifies FibroGen within forty-five (45) days following the closing of such acquisition or merger of its intent to divest itself of such assets and complies with the following:

(i) AstraZeneca shall ensure that no Development Data, Information related to Commercialization in connection with this Agreement, FibroGen Technology or Confidential Information of FibroGen is used in or for the purpose of the activities contravening such covenants.

(ii) AstraZeneca shall (or, as the case may be, cause its relevant Affiliate to) [*] the sale or transfer to a Third Party of the relevant part of the business contravening

such covenants, and in any case, shall enter into (or, as the case may be, cause its relevant Affiliate to enter into) a binding definitive agreement with a Third Party for such sale or transfer no later than [*] after the closing of the acquisition or merger transaction under which the relevant business was acquired.

(iii) Neither AstraZeneca nor its Affiliates shall, during such [*] period, Commercialize a product being the subject of research or Development activities forming part of the relevant business which is to be divested, unless such product was already Commercialized prior to the closing of the acquisition or merger transaction.

(iv) AstraZeneca shall, notwithstanding anything to the contrary in this Section 7.8(b), at all times continue to be obligated to use Commercially Reasonable Efforts to Develop or Commercialize a Product in accordance with its obligations under and subject to Sections 3.9 and 5.8.

(c) Remedy. AstraZeneca hereby acknowledges and agrees that in the event of any actual or threatened breach of this Section 7.8, FibroGen will suffer an irreparable injury, such that no remedy at law shall afford it adequate protection against, or appropriate compensation for, such injury. Accordingly, AstraZeneca hereby agrees that FibroGen shall be entitled to specific performance of AstraZeneca's obligations under this Section 7.8, as well as such further timely injunctive relief as may be granted by a court of competent jurisdiction.

(d) [*]. In the event AstraZeneca or its Affiliates conducts any activities prohibited under this Section 7.8, any [*] shall be subject to the following [*]. AstraZeneca [*]. Such [*] shall be in addition to all other remedies available to FibroGen.

7.9 Additional Provisions Regarding Restrictive Covenants and Exclusivity.

(a) The Parties agree that the restrictions contained in Sections 7.4, 7.5, 7.8 and 13.6(i) are reasonable and necessary for the protection of the Parties' and their Affiliates' respective confidential information and business, that such restrictions are reasonable in all the circumstances and that the Parties would not have entered into this Agreement without the protections afforded to them under Sections 7.4, 7.5, 7.8 and 13.6(i).

(b) The words "Develop" and "Commercialize" and all variations thereof included in Sections 7.4 and 7.8 with reference to HIF Compounds shall include the activities described in the definitions of such words in Article 1, but with such activities being with respect to HIF Compounds rather than with respect to a Product as set forth in the relevant definition.

ARTICLE 8

FINANCIALS

8.1 License Fees. AstraZeneca shall pay to FibroGen each of the following non-refundable, non-creditable license fees on or before the applicable date set forth below; provided that with respect to payment 1, FibroGen shall provide an invoice on or before the Effective Date, and with respect to payments 2, 3 and 4, FibroGen shall provide an invoice at least forty-five (45) days before each applicable due date:

Number	Due Date	Payment
1	15th Business Day after the Effective Date	$70 million
2	June 30, 2014	$110 million
3	June 30, 2015	[*]
4	June 30, 2016	[*]

If this Agreement is terminated prior to the due date of payment 2 or 3, then each such payment shall remain due and payable despite such termination. If this Agreement is terminated prior to the due date of payment 4, then payment 4 will remain due and payable despite such termination; [*].

8.2 Development and Commercialization Cost Reimbursement.

(a) Prior to First NDA Approval during Development Sharing Period. The following procedure in this subsection (a) will apply prior to the first NDA approval for a Product and during the Development Sharing Period.

(i) On or before the Effective Date, FibroGen will submit an invoice to AstraZeneca for an amount of [*] in respect of certain Development Costs incurred by FibroGen under the Development Plan prior to the Effective Date. AstraZeneca shall pay such invoice within fifteen (15) Business Days of receipt of invoice.

(ii) Within twenty (20) days if reasonably possible for AstraZeneca using reasonable endeavors to meet such timeline and in no event later than twenty five (25) days after the end of each Calendar Quarter during the Development Sharing Period, and within fifteen (15) days if reasonably possible for FibroGen using reasonable endeavors to meet such timeline and in no event later than twenty (20) days after the end of each Calendar Quarter, the Party shall provide the other Party with a statement setting forth (A) the actual Development Costs incurred by such Party in such Calendar Quarter, (B) the Development Costs budgeted for activities conducted by such Party in such Calendar Quarter under the Development Plan, (C) the amount (if any) by which the actual costs differed from the budgeted costs, subject to the provisions on budget overages in Section 3.4(b), (the "***Excess Spend***"), (D) the amount carried over from the previous Calendar Quarters for which the Development Costs incurred by AstraZeneca were greater than the Development Costs incurred by FibroGen. As soon as practicable, and not later than within thirty two (32) days of the end of the Calendar Quarter, the Parties shall discuss and resolve any issues with respect to such statements and shall use best efforts to agree the amount owed from one Party to the other for Development Costs in such Calendar Quarter, so that each Party bears fifty percent (50%) of the Development Costs incurred (subject to Section 3.4(b)), provided, however that each Party shall generate any questions and respond to any inquiries regarding the invoices as promptly as reasonably possible following receipt, including within forty-eight (48) hours for response to ordinary inquiries. Following the reconciliation process for the applicable Calendar Quarter, and not later than thirty two (32) days of the end of the Calendar

Quarter, each of FibroGen and AstraZeneca shall provide an invoice to the other Party reflecting fifty percent (50%) of their respective Development Costs incurred. Within forty five (45) days after its receipt of such invoice from FibroGen, if the amount invoiced by FibroGen to AstraZeneca is greater than the amount invoiced by AstraZeneca to FibroGen, then AstraZeneca shall pay FibroGen an amount equal the difference between the invoices, subject to the offset of outstanding Development Costs as detailed below in this Section 8.2(a)(ii). If during the Development Sharing Period and following the quarterly process set out above, FibroGen owes a payment to AstraZeneca, then no payment will be made by FibroGen, to AstraZeneca. Instead such amount, in aggregate with any other such amounts, will be carried forward by AstraZeneca and set off against any subsequent Development Cost payments owed by AstraZeneca to FibroGen under this Section 8.2. For clarity, Development Costs advanced or paid under this Section 8.2(a)(ii) do not include amounts incurred prior to August 1, 2013.

(b) Prior to First NDA Approval after the Development Sharing Period. The following procedure in this subsection (b) will apply prior to the first NDA approval for a Product and after the Development Sharing Period.

(i) No earlier than forty-five (45) days prior to the beginning of each Calendar Quarter after the Development Sharing Period, FibroGen shall submit to AstraZeneca an invoice for the Development Costs budgeted to be incurred by FibroGen to conduct its activities under the Development Plan in such Calendar Quarter, as adjusted for the Cost Difference as set forth in 8.2(b)(ii) below. AstraZeneca shall pay each such invoice within forty-five (45) days after the invoice date, subject to the offset of Development Cost provisions in Section 8.2(a).

(ii) No later than twenty (20)) days after the end of each Calendar Quarter after the Development Sharing Period, FibroGen shall send to AstraZeneca a statement setting forth (i) the actual Development Costs incurred by FibroGen in such Calendar Quarter, (ii) the Development Costs budgeted for activities conducted by FibroGen in such Calendar Quarter in the Development Plan, (iii) the amount (if any) by which the actual costs differed from the budgeted costs and (iv) the difference between the amount advanced by AstraZeneca under this Section 8.2(b) and the Development Costs actually incurred, to the extent below [*] percent ([*]%) of the budgeted amount (the “Cost Difference”). FibroGen shall adjust the invoice to be submitted to AstraZeneca under 8.2(b)(i) for the subsequent Calendar Quarter to account for the Cost Difference. Not later than within thirty two (32) days of the end of the Calendar Quarter, the Parties shall discuss and resolve any issues with respect to such statement and shall use best effort to agree the amount payable thereunder. If any items not material to FibroGen’s financial statements remain outstanding at the end of the reconciliation and resolution process, the parties shall continue to work toward resolution by the end of following calendar quarter. Notwithstanding anything else set forth herein, if all amounts invoiced by FibroGen and settled under Section 8.2(a) exceed fifty per cent (50%) of the difference between the Development Costs incurred by FibroGen and the Development Costs incurred by AstraZeneca during the Development Sharing Period (subject to the provisions on budget overages in Section 3.4(b)), then any such excess may be credited by AstraZeneca against any subsequent Development Costs payments owed by AstraZeneca to FibroGen under this Section 8.2(b) and Section 8.2(c), or, in the event that the Development Costs incurred by FibroGen are no longer being incurred under this Agreement and are insufficient to make up such excess, such excess may be credited against any other payments owed by AstraZeneca to FibroGen under this Agreement, until fully used.

(c) Adjustment in Payment Schedule. At any time after January 1, 2015 and prior to the time at which ninety percent (90%) of the targeted enrollment in any CKD Indication Clinical Trials (conducted by FibroGen and for which FibroGen will be incurring Development Costs) has been achieved (the "**Increased Advance Period**"), upon request of FibroGen, the Parties shall discuss in good faith the upcoming spending plans for the Development Budget in which FibroGen reasonably anticipates that significant cost variances, such as those associated with patient enrollment rates or other reasonably unforeseen causes, may occur with respect to such CKD Indication Clinical Trials during the next Development Budget year and thereafter. The Parties shall agree upon the timing of the implementation of a further advance in any Calendar Quarter in an upcoming period during the Increased Advance Period: If FibroGen reasonably determines that anticipated spending in respect of such CKD Indication Clinical Trials such as enrollment rate is proceeding in a manner that the Development Costs for which advances have been received in a Calendar Quarter under Section 8.2(a) or (b) will likely be exceeded, then FibroGen shall notify the JSC of the basis for such anticipated overage and if such overage is anticipated to exceed by [*] percent ([*]%) or more such budgeted amount, then FibroGen may invoice AstraZeneca prior to the end of the Calendar Quarter an amount it reasonably believes is necessary to cover such overage. AstraZeneca shall pay such amount within forty-five (45) days of invoice and any such amounts advanced under such invoice under this Section 8.2(c) shall be deducted from the subsequent payment under Section 8.2(a), (b) or (d).

(d) Following First NDA Approval. The following procedure in this subsection (d) will apply after the first NDA approval for a Product, unless otherwise agreed by the JDC. Within thirty (30) days after the end of each Calendar Quarter in which FibroGen conducts activities under the Development Plan, FibroGen shall send to AstraZeneca an invoice for all Development Costs incurred by FibroGen in such Calendar Quarter, up to an amount equal to [*] percent ([*]%) of the budgeted amount for the applicable activities. AstraZeneca shall pay each such invoice within forty-five (45) days after receipt thereof.

(e) Annual Reconciliation. Within thirty (30) days after the end of each Calendar Year in which either Party conducts activities under the Development Plan, such Party shall send to the other Party a statement setting forth the Development Costs actually incurred by such Party and the budgeted amounts for all activities conducted by such Party under the Development Plan during such Calendar Year; provided that if no part of such Calendar Year was during the Development Sharing Period, or if only FibroGen is conducting Development activities, only FibroGen shall be required to provide such statement. FibroGen's statement will also include the Development Costs incurred by FibroGen and actually reimbursed by Astellas for such Calendar Year. If during the Development Sharing Period, such actual amount exceeds the budgeted amount (or amount otherwise approved by the JSC) by more than [*] percent ([*]%) of the budgeted amount, then fifty percent (50%) of the excess (i.e., above [*] percent ([*]%)) will be credited against or added to (depending on which Party incurred the excess) the subsequent payment from AstraZeneca to FibroGen under this Section 8.2. After the Development Sharing Period, if such actual amount incurred by FibroGen exceeds the budgeted amount (or amount otherwise approved by the JSC) by more than [*] percent ([*]%) of the budgeted amount, the excess (i.e., above [*] percent ([*]%)) will be credited against the subsequent payment from AstraZeneca to FibroGen under this Section 8.2.

(f) RoW Activities. Within thirty (30) days after the end of each Calendar Quarter in which FibroGen conducts activities under the Development Plan for the RoW, FibroGen shall send to AstraZeneca an invoice for all costs incurred by FibroGen in such Calendar Quarter for such activities, including Personnel Costs, the Fully Burdened Cost of Collaboration Compound or Product or comparator drug, concomitant drug, placebo or other materials used in any Clinical Trial or Nonclinical Studies, and all other out-of-pocket costs. AstraZeneca shall pay each such invoice within forty-five (45) days after receipt thereof.

(g) Commercialization Cost. Within thirty (30) days after the end of each Calendar Quarter in which FibroGen conducts activities under the U.S. Commercialization Plan, FibroGen shall send to AstraZeneca an invoice for all Commercialization Costs incurred by FibroGen in such Calendar Quarter. AstraZeneca shall pay each such invoice within forty-five (45) days after receipt thereof.

8.3 Development Milestone Payments.

(a) Payments. AstraZeneca shall make milestone payments to FibroGen based on achievement by AstraZeneca, its Affiliate or a Sublicensee (or, if applicable, by FibroGen) of the development and regulatory milestone events set forth in this Section 8.3(a) with respect to any indication other than an indication independently developed by FibroGen pursuant to Section 3.3(b) for which AstraZeneca does not opt in.

Number	Milestone Event	Payment
1	This milestone event will be deemed achieved on the [*].	$[*] million
2	[*]	$[*] million
3	[*]	$[*] million
4	[*]	$[*] million
5	[*]	$[*] million
6	[*]	$[*] million
7	[*]	$[*] million

(b) Clarifications.

(i) With respect to the first milestone event in Section 8.3(a), if AstraZeneca [*] within such thirty (30) day period, then (A) this milestone event will be [*] and (B) this milestone event will be [*].

(ii) Each milestone payment in Section 8.3(a) shall be paid only once, without regard to whether two or more Products ultimately achieve any such milestone event. For the purposes of milestone events no. 5, 6 and 7 in Section 8.3(a), the Parties agree that the [*] shall be regarded as one and the same indication and thus not constitute [*].

(iii) The foregoing milestone events do not include events achieved by the Product for indications independently developed by FibroGen pursuant to Section 3.3(b) for which AstraZeneca does not opt in.

(c) Notice; Payment. The applicable Party shall notify the other Party upon achievement of each milestone in Section 8.3(a). AstraZeneca shall pay to FibroGen the amounts set forth in Section 8.3(a) within forty-five (45) days after receipt by AstraZeneca of an invoice from FibroGen for the relevant amount, following the achievement of the applicable milestone event by AstraZeneca, its Affiliate or a Sublicensee (or, if applicable, by FibroGen). Each such payment shall be made by wire transfer of immediately available funds into an account designated by FibroGen. Each such payment is nonrefundable and non-creditable against any other payments due hereunder.

8.4 [*] Milestone.

(a) Milestone. AstraZeneca shall pay a milestone to FibroGen in the amount of the discounted value of [*], discounted using ten percent (10%) annual compounding, applied from the Trigger Date to the Discount Date (each as defined below) (such value, the [*] ***Milestone***") following the first [*] (meaning that – notwithstanding anything else set forth herein – AstraZeneca shall never be obligated to pay the Deferred Approval Milestone prior to the [*]) as of the payment date determined in accordance with Section 8.4(b); provided that and notwithstanding anything else set forth below in this Section 8.4, if any of [*]") on or before [*]") then the [*] Milestone will not be payable. The [*] Milestone is nonrefundable and non-creditable against any payments due hereunder.

(b) Payment Date. If payable pursuant to Section 8.4(a), the [*] Milestone will be due as follows:

(i) If all [*], the "***Discount Date***" will be the date of first [*], and the [*] Milestone will be payable within forty-five (45) days thereafter, provided that there is then no [*].

(ii) If [*], the "***Discount Date***" will be January 1 of the Calendar Year following the Calendar Year in which [*], and the [*] Milestone will be payable on the Discount Date, provided that there is then no [*].

(iii) If [*], but if there is no [*], then the [*] Milestone (the full undiscounted amount of [*] will be payable on the Trigger Date.

(iv) If any [*], the Discount Date will be the later to occur of (a) the date of [*] and (b) the first [*], and the [*] Milestone will be payable within forty-five (45) days after the Discount Date.

(v) At any time prior to the Trigger Date, AstraZeneca may elect to pay the [*] Milestone, and the Discount Date will be the date of payment.

(c) **Trigger Date**. The "***Trigger Date***" means [*], the date on which such [*]. For example, if no [*], the Trigger Date is [*]. If a [*], then the Trigger Date is [*].

8.5 Sales Milestone Payments.

(a) **U.S. Events.** AstraZeneca shall make each of the sales milestone payments indicated below to FibroGen when aggregate Annual Net Sales of all Products across all indications in the U.S. (other than sales by FibroGen in indications independently developed by FibroGen pursuant to Section 3.3(b) for which AstraZeneca does not opt in) first reach the Dollar values indicated below.

Aggregate Annual Net Sales in the U.S.	**Payment**
$[*]	$[*] million
$[*]	$[*] million
$[*]	$[*] million

Each milestone in this Section 8.5(a) shall be paid only once.

(b) **Additional U.S. Milestones.** AstraZeneca shall make each of the sales milestone payments indicated below to FibroGen when aggregate Annual Net Sales of Products in LDOs in the U.S. (other than sales by FibroGen in indications independently developed by FibroGen pursuant to Section 3.3(b) for which AstraZeneca does not opt in) first reach the Dollar values indicated below in any Calendar Year from 2018-2022 (inclusive).

Aggregate Annual Net Sales to LDOs in the U.S.	**Payment**
$[*]	$[*] million
$[*]	$[*] million
$[*]	$[*] million

(c) RoW Events. AstraZeneca shall make each of the sales milestone payments indicated below to FibroGen when aggregate Annual Net Sales of all Products across all indications in the RoW (other than sales by FibroGen in indications independently developed by FibroGen pursuant to Section 3.3(b) for which AstraZeneca does not opt in) first reach the Dollar values indicated below.

Aggregate Annual Net Sales in RoW	Payment
$[*]	$[*] million
$[*]	$[*] million

Each milestone in this Section 8.5(c) shall be paid only once.

(d) Notice; Payment. AstraZeneca shall notify FibroGen of achievement of each of the milestone events in this Section 8.5 within forty-five (45) days after the end of the Calendar Quarter in which achieved. AstraZeneca will pay to FibroGen the amounts set forth in Sections 8.5(a), 8.5(b) and 8.5(c) within forty-five (45) days after AstraZeneca's receipt of an invoice from FibroGen following the end of the Calendar Quarter during which the applicable milestone event has been achieved. If more than one such milestone is achieved in any Calendar Quarter, then all applicable payments will be due. Each such payment shall be made by wire transfer of immediately available funds into an account designated by FibroGen. Each such payment is nonrefundable and non-creditable against any other payments due hereunder.

8.6 Royalties

(a) Royalty Rates. AstraZeneca shall pay to FibroGen non-refundable, non-creditable royalties on the amount of aggregate Annual Net Sales of each Product in the Territory as calculated by multiplying the applicable royalty rates set forth below by the corresponding amount of incremental aggregate Annual Net Sales in the Territory of such Product in such Calendar Year. For clarity, royalties are not due on sales of Products by FibroGen solely in indications independently developed by FibroGen pursuant to Section 3.3(b) for which AstraZeneca does not opt in.

Aggregate Annual Net Sales (Per Product)	Royalty Rate
Portion less than $[*]	[*]%
Portion greater than or equal to $[*]	[*]%

By way of example, if the aggregate Annual Net Sales of a Product in the Territory in a particular Calendar Year is two billion five hundred million Dollars ($2,500,000,000), the amount of royalties payable hereunder shall be as follows:

$ [*]

$ [*]

[*]

(b) Sales Subject to Royalties. Sales between AstraZeneca, its Affiliates and Sublicensees shall not be subject to royalties hereunder unless the purchaser is an end user. Royalties shall be calculated on AstraZeneca's, its Affiliates' and Sublicensees' sales of the Products to a Third Party, including Distributors (but excluding for the avoidance of doubt Sublicensees). Royalties shall be payable only once for any individual S.K.U. of a Product. For the purpose of determining Net Sales, the Product shall be deemed to be sold when invoiced and a "sale" shall not include, and no royalties shall be payable on, transfers by AstraZeneca, its Affiliates or Sublicensees of reasonable quantities of clinical trial materials, or other transfers or dispositions of reasonable quantities of Products for charitable, promotional, nonclinical, clinical, manufacturing, testing or qualification, regulatory or governmental purposes in compliance with this Agreement (it being understood and agreed that neither Party shall have the right to distribute the Product as samples except pursuant to Section 5.7).

(c) Generic Competition. If, in any country in the Territory, the Net Sales of any Product in any rolling four Calendar Quarter period following the first sale of a Generic Product to such Product in such country is less than [*] of the Net Sales for such Product in such country in the immediately preceding four Calendar Quarter period, then the royalty rate for such Product in such country shall be reduced to [*] that would otherwise have been applicable under Section 8.6(a) for Net Sales of such Product in such country. For clarity, if the Generic Product is barred or withdrawn from sale in such country and the Net Sales in such country in any rolling four Calendar Quarter period is greater than [*] of the value for the rolling four quarter period prior to the first sale of a Generic Product, then the foregoing reduction shall no longer apply effective as of the Calendar Quarter in which the Generic Product is barred or withdrawn from sale. The calculation of the royalty reduction under this Section 8.6(c) shall be conducted separately for each Product in each country. By way of example, if during the first Calendar Quarter of a particular Calendar Year in which the foregoing reduction applies, the Net Sales in such Calendar Quarter in a country in which the foregoing reduction applies are one billion five hundred million Dollars ($1,500,000,000), and the Net Sales in such Calendar Quarter in a country in which the foregoing royalty reduction does not apply are one billion Dollars ($1,000,000,000), the following shall apply with respect to the royalty payment owed for such Calendar Quarter: The royalty payment without regard to the reduced rate would be [*].

(d) Compulsory Licenses. If a court or a governmental agency of competent jurisdiction requires AstraZeneca or its Affiliate or Sublicensee to grant a compulsory license to a Third Party and if as a result of the compulsory license the Net Sales of such Product in any rolling four Calendar Quarter period following the first grant of such compulsory license in such country is less than [*] of the Net Sales for such Product in such country in the immediately preceding four

Calendar Quarter period, then the royalty rate for such Product in such country shall be reduced to [*] of the royalty rates (in each tier) that would otherwise have been applicable under Section 8.6(a) for Net Sales of such Product in such country. For clarity, to the extent that the compulsory licenses in the relevant country are duly terminated or expire in such country and the Net Sales in such country in any rolling four Calendar Quarter period is greater than [*] of the value for the rolling four quarter period prior to the first grant of the compulsory license in such country, then the foregoing reduction shall no longer apply effective as of the Calendar Quarter in which the compulsory license is terminated or expires. The calculation of the royalty reduction under this Section 8.6(e) shall be conducted separately for each Product in each country.

(e) Order of Royalty Reduction and Royalty Floor. Any reductions set forth in Sections 8.6(c), 8.6(d) and 8.8(c) shall be applied in the order in which the event triggering such reduction occurs, provided that in no event shall, due to the cumulative reductions set out in Sections 8.6(c) and 8.6(d), the royalty that would otherwise have been payable to FibroGen under this Section 8.6 in a particular Calendar Quarter be reduced below [*]) of the royalty set forth in Section 8.6(a).

(f) Royalty Term. AstraZeneca's obligation to pay royalties due under this Section 8.6 with respect to a particular Product in each country in the Territory will commence upon the First Commercial Sale of such Product in such country and will be payable for so long as such Product is sold in such country by AstraZeneca or its Affiliate or Sublicensee.

(g) Royalty Payments and Reports. All amounts payable to FibroGen pursuant to this Section 8.6 shall be paid in Dollars within forty-five (45) days after the end of each Calendar Quarter with respect to Net Sales in such Calendar Quarter. Each payment of royalties due to FibroGen shall be accompanied by a statement, on a country-by-country basis, of the amount of gross sales of Products in the Territory during the applicable Calendar Quarter, a calculation of Net Sales in the Territory showing the aggregate deductions from gross sales provided for in the definition of Net Sales during such Calendar Quarter, and a calculation of the amount of royalty payment due on such sales for such Calendar Quarter. For the avoidance of doubt, FibroGen acknowledges and agrees that each statement provided by AstraZeneca under this Section 8.6(g) shall constitute Confidential Information of AstraZeneca and FibroGen shall comply with its confidentiality and non-use obligations in respect of such statements as set forth in Article 12.

(h) Clarification. AstraZeneca acknowledges that it will continue to enjoy substantial benefit from its license under, and the transfer to AstraZeneca of certain elements of, the FibroGen Technology pursuant to this Agreement, as well as from AstraZeneca's own development of inventions derived from the practice of such license and AstraZeneca's use of such FibroGen Technology, even after the expiration of all FibroGen Patents claiming the Product in a particular country in which Products are sold. In addition, AstraZeneca acknowledges that the application of a uniform royalty structure during the sale of Products is more convenient to the Parties, facilitates payments, and reduces accounting burdens on the Parties, as compared with a payment structure dependent on the expiration of FibroGen Patents.

8.7 FibroGen IPO. AstraZeneca shall make a one-time, non-refundable, non-creditable payment of [*] to FibroGen upon a FibroGen IPO; provided that (a) if such IPO has

not occurred prior to December 1, 2015, AstraZeneca will make such payment on December 15, 2015, and (b) if the Parties agree upon terms (and FibroGen undertakes, upon AstraZeneca's request, to negotiate such terms in good faith), including a lock-up and standstill agreement (subject to maximum ownership of [*]%), then in lieu of such payment, AstraZeneca will make a [*] equity investment in FibroGen at the initial public offering price simultaneous with the closing of a FibroGen IPO.

8.8 Third Party Intellectual Property.

(a) DFCI Agreement. FibroGen shall be solely responsible for all payments to DFCI under the DFCI Agreement.

(b) Right to Obtain License. If either Party desires to obtain a license under any Third Party's intellectual property in connection with the Development and Commercialization of Products, such Party will notify the other Party. FibroGen will have the first right (but not the obligation) to obtain such license. If FibroGen elects not to obtain such license, or is unsuccessful in doing so, then AstraZeneca will have the right (but not the obligation) to negotiate and obtain such license at its sole discretion and expense (but subject to Section 8.8(c)). The negotiating Party will obtain such license, with the right to sublicense, in order to permit AstraZeneca to exercise its rights and to perform its obligations under this Agreement. Subject to the foregoing, the terms and conditions involved in obtaining such license shall be determined at such negotiating Party's sole discretion.

(c) AstraZeneca Obtains License. In the event AstraZeneca obtains a license under any Third Party patents that claim the composition of matter, formulation (to the extent AstraZeneca is performing any formulation activities, which activities it may perform only with FibroGen's prior written consent), method of treatment or other use of a Collaboration Compound or Product, AstraZeneca shall provide to FibroGen a copy thereof and shall have the right to offset, against royalties payable to FibroGen under Section 8.6 for the applicable Product, [*] actually paid by AstraZeneca to such Third Party under such license for the sale of the applicable Product in the applicable country and Calendar Quarter; provided that the royalties payable to FibroGen for any Product in any Calendar Quarter under Section 8.6 may not be reduced by more than [*] of those otherwise due to FibroGen under Section 8.6(a) in any Calendar Quarter for such Product as a result of such offset and other reductions under Section 8.6. Except as provided above in this subsection (c), AstraZeneca will be solely responsible for all amounts owed by AstraZeneca or its Affiliates to Third Parties under a license to intellectual property on account of AstraZeneca's or its Affiliates' manufacture, use, sale, offer for sale, or import of Products.

(d) FibroGen Obtains License. Except as provided in subsection (a) above, the FibroGen Technology licensed to AstraZeneca in this Agreement will include patents, patent applications and Information licensed to FibroGen by a Third Party if (i) AstraZeneca assumes [*] of all payment obligations under such license agreement to the extent arising out of the use, Development or manufacture of any Product or Commercialization of any Product by or on behalf of AstraZeneca in the Territory, as well as all other obligations of such license agreement that are applicable to AstraZeneca, and (ii) AstraZeneca acknowledges in writing that its sublicense under such license agreement is subject to the terms and conditions of such license agreement. If any such payments are not allocated among countries, the Parties shall reasonably allocate such payments to within and outside the Territory in good faith.

8.9 Taxes.

(a) Taxes on Income. Each Party shall be solely responsible for the payment of all taxes imposed on its share of income arising directly or indirectly from the collaborative efforts of the Parties under this Agreement.

(b) Withholding Tax. The Party making payments under this Agreement (the "***Payor***") to the other Party (the "***Payee***") shall deduct or withhold from the payments any Taxes that it is required by applicable law to deduct or withhold. The Payee shall provide the Payor any tax forms or appropriate governmental authorization that may be reasonably necessary in order for Payor to not withhold tax or to withhold tax at a reduced rate under an applicable bilateral income tax treaty. The Payee shall use reasonable efforts to provide any such tax forms to the Payor at least thirty (30) days prior to the due date for any payment for which the Payee desires that Payor apply a reduced withholding rate and in any event at least fifteen (15) days prior to the time the applicable payment is due. Each Party shall provide the other with reasonable assistance to enable the recovery, as permitted by applicable laws and regulations, of withholding taxes, Indirect Taxes, or similar obligations resulting from payments made under this Agreement, such recovery to be for the benefit of the Party bearing such withholding tax or Indirect Taxes.

(c) Payment of Tax. To the extent the Payor is required by applicable law or regulations to deduct and withhold taxes on any payment to the Payee, the Payor shall pay the amounts of such taxes to the proper Governmental Authority in a timely manner and promptly transmit to the Payee an official tax certificate or other evidence of such withholding sufficient to enable the Payee to claim such payment of taxes.

(d) Indirect Tax. All payments to be made by one Party to another Party, pursuant to the terms of this Agreement, are stated exclusive of Indirect Taxes. If any Indirect Taxes are chargeable in respect of such payments, the Party making shall payment shall pay such Indirect Taxes at the applicable rate following the receipt where applicable of an Indirect Taxes invoice in the appropriate form issued. Each Party shall issue valid invoices for all amounts payable under this Agreement consistent with all applicable laws and irrespective of whether such amounts may be netted for settlement purposes. The Parties shall cooperate in accordance with applicable law to minimize Indirect Taxes.

(e) Imports. For the avoidance of doubt, the Parties acknowledge and agree that none of the upfront payments, milestone payments or royalties payable under this Agreement are related to the license (or right) to import or any import of Products. The Parties shall cooperate to ensure that the Party responsible for shipping values Product in accordance with applicable laws and maximizes the full benefits of available duty free or savings programs and minimizes where permissible any such duties and any related import taxes that are not reclaimable from the relevant authorities. The receiving Party shall be responsible for any import clearance, including payment of any import duties and similar charges, in connection with any Products transferred to such Party under this Agreement.

8.10 Blocked Currency. In each country where the local currency is blocked and cannot be removed from the country, royalties accrued on Net Sales in that country shall be paid to FibroGen in the equivalent amount in Dollars.

8.11 Foreign Exchange. Conversion of sales or expenses recorded in local currencies to Dollars will be performed in a manner consistent with each Party's normal practices used to prepare its audited financial statements for external reporting purposes, provided that such practices use a widely accepted source of published exchange rates.

8.12 Late Payments. If a Party does not receive payment of any sum due to it on or before the due date therefor, simple interest shall thereafter accrue on the sum due to such Party from the due date until the date of payment at a rate equal to the U.S. Prime Rate for the date payment was due as reported by the *Wall Street Journal*.

8.13 Financial Records; Audits.

(a) Records. Each Party shall maintain complete and accurate records in sufficient detail to permit the other Party to confirm the accuracy of the amount to be reimbursed, pursuant to Section 8.2, with respect to Development Costs or Commercialization Costs or other amounts to be reimbursed or shared hereunder incurred or generated (as applicable) by such Party, achievement of sales milestones, royalty payments and other compensation payable under this Agreement. Each Party shall keep or cause its Affiliates to keep such records for a period of the later of (a) six (6) years after the end of the period to which such books, records and accounts pertain and (b) the expiration of the applicable tax statute of limitations (or any extensions thereof), or for such longer period as may be required by applicable law. Each Party shall maintain such records at its principal place of business or the principal place of business of the appropriate division of such Party to which this Agreement relates.

(b) Procedure. Upon reasonable prior notice, such records shall be open during regular business hours for a period of three (3) years from the creation of individual records, in each case, for examination at the auditing Party's expense, and not more often than once each Calendar Year, by an independent certified public accountant selected by the auditing Party and reasonably acceptable to the audited Party (or in the case of audits of AstraZeneca, by DFCI under the terms of Section 4.2.2 of the DFCI Agreement) for the sole purpose of verifying for the auditing Party the accuracy of the financial reports or sales milestone notices furnished by the audited Party pursuant to this Agreement or of any payments made, or required to be made, by or to the audited Party to the other pursuant to this Agreement. Any such auditor shall not disclose the audited Party's Confidential Information to the auditing Party, except to the extent such disclosure is necessary to verify the accuracy of the financial reports furnished by the audited Party or the amount of payments due by the audited Party under this Agreement. Any amounts shown to be owed but unpaid, or overpaid and in need of reimbursement, shall be paid or refunded (as the case may be) within thirty (30) days after the accountant's report, plus interest (as set forth in Section 8.12) from the original due date (unless challenged in good faith by the audited Party in which case any dispute with respect thereto shall be resolved in accordance with Article 14). The auditing Party shall bear the full cost of such audit unless such audit reveals an overcharge or underpayment by the audited Party that resulted from a discrepancy in a report that the audited Party provided to the other Party during the applicable audit period, which underpayment or overcharge was more than five percent (5%) of the amount set forth in such report, in which case the audited Party shall bear the full cost of such audit.

(c) Audit Dispute. In the event of a dispute with respect to any audit under Section 8.13(b), FibroGen and AstraZeneca shall work in good faith to resolve the disagreement. If the Parties are unable to reach a mutually acceptable resolution of any such dispute within thirty (30) days, the dispute shall be submitted for resolution to an independent certified public accounting firm jointly selected by each Party's certified public accountants or to such other entity or individual as the Parties shall mutually agree (the "***Auditor***"). The decision of the Auditor shall be final and the costs of such resolution as well as the initial audit shall be borne between the Parties in such manner as the Auditor shall determine. Not later than ten (10) days after such decision and in accordance with such decision, the audited Party shall pay the additional amounts, with interest from the date originally due as provided in Section 8.12 or the auditing Party shall reimburse the excess payments, as applicable.

8.14 Manner and Place of Payment. All payments owed under this Agreement shall be made by wire transfer in immediately available funds to a bank and account designated in writing by FibroGen or AstraZeneca (as applicable), unless otherwise specified in writing by such Party. All payments hereunder shall be invoiced by the Payee to the Payor. Each invoice to AstraZeneca shall fulfill the requirements set forth on **Exhibit L**.

8.15 Estimated Sales and Accruals. To the extent Net Sales are based on quarterly estimates or accruals for anticipated sales of Products in the Territory, AstraZeneca shall notify FibroGen of any such estimates or accruals or adjustments or changes based on a revision in estimates and accruals within thirty (30) days of each Calendar Quarter in order to allow FibroGen to timely meet any then applicable public reporting requirements of FibroGen with respect to sales and royalties to FibroGen for Products.

ARTICLE 9

INTELLECTUAL PROPERTY

9.1 Intellectual Property Committee. The Parties shall, promptly after the Effective Date, establish an intellectual property committee (the "***IP Committee***") comprised of at least one senior patent attorney from each Party, together with other representatives of the Parties as the Parties may determine to be appropriate from time to time, to review and discuss, in each case with respect to FibroGen Patents and Joint Patents, the patent prosecution strategy (including whether and where to file patent applications), Orange Book Listings, applications for patent term extension and notices of infringement, as well as the selection, registration, maintenance and defense of Marks and interest in Third Party intellectual property. The IP Committee will serve solely an advisory purpose and shall not have authority to approve or disapprove any actions with respect to patent filing, prosecution and maintenance under this Agreement.

9.2 Ownership of Inventions. Ownership of Information and inventions, whether or not patentable, made during the Term in the course of conducting activities under this Agreement, including all intellectual property rights therein (collectively, "***Inventions***") shall be as follows: (a) FibroGen shall own all Inventions [*], whether made solely by employees, agents or independent

contractors of either Party or its respective Affiliates, or jointly by employees, agents or independent contractors of both Parties or their respective Affiliates (collectively, "***Collaboration Inventions***"), (b) AstraZeneca shall own all Inventions that are made solely by employees, agents or independent contractors of AstraZeneca or its Affiliates that are not Collaboration Inventions, (c) FibroGen shall own all Inventions that are made solely by employees, agents or independent contractors of FibroGen or its Affiliates that are not Collaboration Inventions, and (d) the Parties shall jointly own all Inventions that are made jointly by employees, agents, or independent contractors of each Party or its Affiliates that are not Collaboration Inventions ("***Joint Inventions***"). Except to the extent either Party is restricted by the licenses granted to the other Party under this Agreement, each Party shall be entitled to practice, grant licenses to, assign and exploit the Joint Inventions and Patents claiming Joint Inventions ("***Joint Patents***") without the duty of accounting or seeking consent from the other Party. AstraZeneca hereby assigns to FibroGen all of its and its Affiliates' right, title and interest in and to the Collaboration Inventions, and agrees to take such further actions reasonably requested by FibroGen to evidence such assignment, except where such Collaboration Inventions have been made by an independent contractor retained by AstraZeneca without such contractor having agreed to assign such Collaboration Inventions to AstraZeneca, as approved by the JDC.

9.3 Disclosure of Inventions. Each Party shall promptly disclose to the other all Inventions promptly after becoming aware of them, including all invention disclosures or other similar documents submitted to such Party by its, or its Affiliates', employees, agents or independent contractors describing such Inventions. Such Party shall also respond promptly to reasonable requests from the other Party for more Information relating to such Inventions.

9.4 Prosecution of Patents.

(a) FibroGen Patents. Except as otherwise provided in this Section 9.4(a), as between the Parties, FibroGen shall have the sole right and authority to manage all FibroGen Patent prosecution activities under this Agreement, at its sole expense. This includes the right and authority to prepare, file, prosecute and maintain all FibroGen Patents in any jurisdiction in the world, including defending such FibroGen Patents in any patent office proceedings, pre- or post-grant or issuance, including reissue, reexamination, limitation or invalidation proceedings, or any opposition- or interference-type proceeding or challenge. FibroGen shall provide AstraZeneca reasonable opportunity to review and comment on filing and prosecution efforts regarding the FibroGen Patents in the Territory. FibroGen shall, if requested by AstraZeneca, provide AstraZeneca with copies of material communications from any patent authority in the Territory regarding any FibroGen Patents, and shall if requested provide drafts of any material filings or material responses to be made to such patent authorities a reasonable amount of time in advance of submitting such filings or responses so that AstraZeneca may have the opportunity to review and comment thereon. FibroGen shall further take into account and may include, at FibroGen's sole discretion, any reasonable comments provided by AstraZeneca prior to submission of any such filings or responses.

(b) Requested Filings. If AstraZeneca desires FibroGen to file, in a particular jurisdiction in the Territory, a FibroGen Patent that claims priority to (or is based on the subject matter of) another FibroGen Patent, or that claims a Collaboration Invention, AstraZeneca shall provide written notice to FibroGen requesting that FibroGen file such patent application in such

jurisdiction. If AstraZeneca provides such written notice to FibroGen, FibroGen shall file and prosecute such patent application and maintain any patent issuing thereon in such jurisdiction; provided that FibroGen shall not be obligated to conduct any such activities (including filing a patent application) that FibroGen reasonably believes may have an adverse effect on the FibroGen Patents anywhere in the Territory.

(c) Joint Patents. With respect to any potentially patentable Joint Invention, AstraZeneca shall have the first right, but not the obligation, to prepare patent applications based on such Joint Invention, to file and prosecute (including defense of any oppositions, interferences, reissue proceedings and reexaminations) such patent applications, and to maintain any Joint Patents issuing therefrom, in any jurisdictions throughout the Territory. FibroGen shall have the corresponding first right, but not the obligation, in any jurisdictions outside of the Territory other than China, in respect of which the China Agreement shall govern. If AstraZeneca determines in its sole discretion to abandon, cease prosecution or otherwise not file or maintain any Joint Patent anywhere in the Territory, then AstraZeneca shall provide FibroGen written notice of such determination at least thirty (30) days before any deadline for taking action to avoid abandonment (or other loss of rights) and shall provide FibroGen with the opportunity to prepare, file, prosecute and maintain such Joint Patent. The Party that is responsible for preparing, filing, prosecuting, and maintaining a particular Joint Patent (the "***Prosecuting Party***") shall provide the other Party reasonable opportunity to review and comment on such prosecution efforts regarding such Joint Patent, and such other Party shall provide the Prosecuting Party reasonable assistance in such efforts. The Prosecuting Party shall provide the other Party with a copy of all material communications from any patent authority in the applicable jurisdictions regarding the Joint Patent being prosecuted by such Party, and shall provide drafts of any material filings or responses to be made to such patent authorities a reasonable amount of time in advance of submitting such filings or responses. In particular, each Party agrees to provide the other Party with all information necessary or desirable to enable the other Party to comply with the duty of candor/duty of disclosure requirements of any patent authority. Either Party may determine that it is no longer interested in supporting the continued prosecution or maintenance of a particular Joint Patent in a country or jurisdiction, in which case: (i) the disclaiming Party shall, if requested in writing by the other Party, assign its ownership interest in such Joint Patent in such country or jurisdiction to the other Party for no additional consideration; and (ii) if such assignment is effected, any such Joint Patent would thereafter be deemed a FibroGen Patent in the case of assignment to FibroGen, or a AstraZeneca Patent in the case of assignment to AstraZeneca; provided, however, that the disclaiming party would have an immunity from suit under such FibroGen Patent or AstraZeneca Patent, as the case may be, in the applicable country or jurisdiction. In addition, any Joint Patent that becomes a FibroGen Patent pursuant to the preceding sentence shall be excluded from the license granted to AstraZeneca in Section 7.1. Each Party shall bear its own internal costs in respect of the prosecution of Joint Patents. Out-of-pocket costs incurred in respect of the prosecution and maintenance of Joint Patents in the Territory shall be borne equally by AstraZeneca and FibroGen. In the event a Party elects to disclaim its interest in a Joint Patent, the costs incurred with respect to such Patent after the date of such disclaimer shall thereafter be borne exclusively by the other Party, without reimbursement or credit.

(d) Cooperation in Prosecution. Each Party shall, through the IP Committee, provide the other Party all reasonable assistance and cooperation in the Patent prosecution efforts provided above in this Section 9.4, including providing any necessary powers of attorney and executing any other required documents or instruments for such prosecution.

9.5 Infringement of FibroGen Patents by Third Parties.

(a) Notification.

(i) Within five (5) Business Days from (A) a Party's or its Affiliate's receipt of any notice of any certification filed under the U.S. "Drug Price Competition and Patent Term Restoration Act" of 1984 as amended or supplemented or any successor law or (B) a Party's or its Affiliate's receipt of any notice of any certification filed under Section 505(j) of the FD&C Act or an application under Section 505(b)(2) of the FD&C Act naming a Product as a reference listed drug and including a certification under Section 505(j)(2)(A)(vii)(IV) or 505(b)(2)(A)(iv), respectively or (C) any equivalent proceeding in any country in RoW (each of (A), (B) and (C), a "***Product Infringement***") such Party shall notify the other Party thereof in writing.

(ii) If there is any infringement, threatened infringement, imminent infringement or alleged infringement of any FibroGen Patent on account of a Third Party's manufacture, use, offer for sale, or sale of a Collaboration Compound or Product in the Territory not within Section 9.5(a)(i) ("***Other Infringement***") then each Party shall promptly notify the other Party in writing of any such Other Infringement of which it becomes aware, and shall provide evidence in such Party's possession demonstrating such Other Infringement.

(b) Enforcement Rights.

(i) RoW Litigation. AstraZeneca shall have the first right, but not the obligation, to bring an appropriate suit or other action against any person or entity allegedly engaged in any Product Infringement or Other Infringement of the FibroGen Patents in the RoW (and to defend any related counterclaim), at AstraZeneca's expense. AstraZeneca shall have a period of one hundred eighty (180) days after its receipt or delivery of notice and evidence pursuant to Section 9.5(a)(i), to elect to so enforce such FibroGen Patent in the RoW (or to settle in accordance with Section 9.5(c) or otherwise secure the abatement of such Product Infringement or Other Infringement). In the event AstraZeneca does not so elect (or settle or otherwise secure the abatement of such Product Infringement or Other Infringement), it shall so notify FibroGen in writing as soon as practicable following the decision and in any event within such one hundred eighty (180)-day period, and FibroGen shall have the right to commence a suit or take action to enforce the applicable FibroGen Patents with respect to such Product Infringement or Other Infringement in the RoW (and to defend any related counterclaim) at FibroGen's expense. The IP Committee shall take the necessary actions to ensure that AstraZeneca has proper standing to bring suit under this Section 9.5(b)(i).

(ii) U.S. Litigation. AstraZeneca shall have the first right, but not the obligation, to bring an appropriate suit or other action against any person or entity allegedly engaged in any Product Infringement or Other Infringement of the FibroGen Patents in the U.S. (and to defend any related counterclaim), at AstraZeneca's expense. AstraZeneca shall have a period of thirty (30) days, with respect to a Product Infringement, and one hundred eighty (180) days with respect to an Other Infringement, after its receipt or delivery of notice and evidence

pursuant to Section 9.5(a)(i), to elect to so enforce such FibroGen Patent in the U.S. (or to settle in accordance with Section 9.5(c) or otherwise secure the abatement of such Product Infringement or Other Infringement). The Parties shall meet periodically to discuss in good faith and determine an enforcement strategy, and AstraZeneca shall act consistently with any such agreed strategy. In the event AstraZeneca does not so elect (or settle or otherwise secure the abatement of such Product Infringement or Other Infringement), it shall so notify FibroGen in writing as soon as practicable following the decision and in any event within such thirty (30)- or one hundred eighty (180)-day period, as applicable, and FibroGen shall have the right to commence a suit or take action to enforce the applicable FibroGen Patents with respect to such Product Infringement or Other Infringement in the U.S. (and to defend any related counterclaim), at FibroGen's expense. The IP Committee shall take the necessary actions to ensure that AstraZeneca has proper standing to bring suit under this Section 9.5(b)(ii).

(iii) Cooperation. In any action, suit or proceeding instituted under this Section 9.5(b), the Parties shall cooperate with and assist each other in all reasonable respects. Upon the reasonable request of the Party instituting such action, suit or proceeding, the other Party shall join such action, suit or proceeding and shall be represented using counsel of its own choice, at the requesting Party's expense. If a Party with the right to initiate legal proceedings under this Section 9.5(b) lacks standing to do so and the other Party has standing to initiate such legal proceedings, then the Party with standing shall initiate such legal proceedings at the request and expense of the other Party (including reasonable internal personnel costs at the Hourly Rate).

(c) Settlement. Without the prior written consent of the other Party, neither Party shall settle any claim, suit or action that it brought under Section 9.5(b) involving FibroGen Patents in any manner that would negatively impact such intellectual property or that would limit or restrict the ability of either Party to sell Products anywhere in or outside the Territory.

(d) Recoveries. If either Party recovers monetary damages from a Third Party in a suit or action in respect of a Product Infringement or Other Infringement, such recovery shall be allocated first to the reimbursement of any expenses incurred by the Parties in such litigation and any remaining amount shall be deemed Net Sales and retained by (or paid to) AstraZeneca, subject to royalty payments on such deemed Net Sales pursuant to Section 8.6.

(e) Designated Products. Notwithstanding anything to the contrary in this Agreement:

(i) FibroGen shall have the sole right to enforce the FibroGen Patents against any of the Designated Products ("***Designated Product Infringement***"), and AstraZeneca shall be solely responsible for all expenses reasonably incurred in connection therewith and subject further to (ii) below. FibroGen will invoice AstraZeneca for its share of such expenses on a Calendar Quarter basis (including its internal personnel costs at the Hourly Rate), and AstraZeneca will pay each such invoice within forty-five (45) days after receipt thereof.

(ii) Notwithstanding (i) above, (A) in no event shall [*]; provided that in Calendar Years 2018, 2019 and 2020, AstraZeneca shall not be obligated to [*], except that if AstraZeneca reimburses [*] (the "***Deficit***"), the [*] (see example below); (B) in enforcing the FibroGen Patents against any of the Designated Products, the Parties shall unanimously select

outside counsel to represent FibroGen in such enforcement proceedings (failing such unanimous agreement AstraZeneca shall be [*] (C) FibroGen shall, at all times, keep AstraZeneca reasonably informed regarding such enforcement proceedings and shall take into account any good faith comments made by AstraZeneca relating to such enforcement proceedings; and (D) FibroGen shall provide AstraZeneca with reasonably sufficient information regarding such enforcement proceedings to demonstrate that any such proceedings have a good faith basis and are brought and maintained in good faith. By way of example of clause (A), [*].

(f) Non-Product-Related Infringements. As between the Parties, FibroGen shall have the sole right to enforce the FibroGen Patents in the Territory against any infringement, imminent infringement, threatened infringement or alleged infringement that is not a Product Infringement, a Designated Product Infringement or an Other Infringement, at its expense, and to retain all associated recoveries; provided that in no event will FibroGen place an Orange Book-listed FibroGen Patent (or a FibroGen Patent listed on a Form 3542 submitted in accordance with Section 9.12 upon or after approval of the NDA as a timely filed patent) into litigation without AstraZeneca's prior written approval, which approval will not be unreasonably withheld.

(g) Joint Patents. Each Party shall promptly notify the other Party upon becoming aware of any infringement, imminent infringement, threatened infringement or alleged infringement of any Joint Patent ("***Joint Patent Infringement***"). The Parties will promptly thereafter meet to discuss in good faith how and whether to proceed to enforce the applicable Joint Patent against such Joint Patent Infringement. If the Parties fail to agree within sixty (60) days, then either Party shall have the right to take any action permitted under applicable law.

(h) Patents Licensed from Third Parties. Each Party's rights under this Section 9.5 with respect to any FibroGen Patent licensed from a Third Party shall be subject to the rights of such Third Party to enforce such FibroGen Patent and/or defend against any claims that such FibroGen Patent is invalid or unenforceable.

9.6 Defense of FibroGen Patents. To the extent any Party receives notice by counterclaim, or otherwise, alleging the invalidity or unenforceability of any FibroGen Patent in the Territory, it shall bring such fact to the attention of the other Party, including all relevant information related to such claim. The Parties, through the JSC, shall discuss such claim. Where such allegation is made within the context of a patent office proceeding, the provisions of Section 9.4 shall apply. Where such allegation is made in a counterclaim to or in connection with a suit or other action brought under Section 9.5, the provisions of Section 9.5 shall apply. In all other cases, (a) where such action relates to a FibroGen Patent in the U.S., FibroGen shall have the first right to defend such action, at FibroGen's expense, and AstraZeneca will cooperate with FibroGen, at FibroGen's expense, in such defense, and (b) where such action relates to a FibroGen Patent within the RoW, AstraZeneca shall have the first right but not the obligation to defend such action, at AstraZeneca's expense, and FibroGen will cooperate with AstraZeneca, at AstraZeneca's expense, in such defense. In the event a Party does not so elect to exercise its first right to defend an action under this Section 9.6, it shall so notify the other Party in writing, and such other Party shall have the right to so defend such action at its expense. Each Party shall provide to the Party defending any such rights under this Section 9.6 all reasonable assistance in such enforcement, at such defending Party's request and expense. The defending Party shall keep the other Party regularly informed of the status and progress of such efforts, and shall reasonably consider the other Party's comments on any such efforts.

9.7 Third Party Patents. FibroGen shall have the sole right and authority to initiate and/or pursue at its sole expense any patent office proceeding, pre- or post-grant or issuance, including reissue, reexamination, limitation, or invalidation proceedings, or any opposition- or interference-type proceeding or challenge against any Third Party Patent that relates or that may potentially relate to the manufacture, use, or sale of a HIF Compound, a Product, or a Designated Product.

9.8 Defense of Infringement Actions. During the Term, each Party shall bring to the attention of the other Party all information regarding potential infringement or any claim of infringement of Third Party intellectual property rights in connection with the development, manufacture, production, use, importation, offer for sale, or sale of Products in the Territory. Subject to Article 11, each Party shall be solely responsible at its sole expense for defending any action, suit, or other proceeding brought against it alleging infringement of Third Party intellectual property rights in connection with its activities under this Agreement. This Section 9.8 shall not be interpreted as placing on either Party a duty of inquiry regarding Third Party intellectual property rights.

9.9 Patent Marking. AstraZeneca shall, and shall require its Affiliates and Sublicensees to, mark Products sold by it hereunder (in a reasonable manner consistent with industry custom and practice) with appropriate patent numbers or indicia to the extent permitted by applicable law and regulations, in those countries in which such markings or such notices impact recoveries of damages or equitable remedies available with respect to infringements of patents. The Parties agree that listing the appropriate Patent(s) in the Orange Book shall be deemed a marking in a reasonable manner consistent with industry custom and practice under this Section 9.9, and FibroGen agrees to use good faith efforts to obtain, as soon as reasonably practicable after the Effective Date, a written confirmation from DFCI that DFCI so agrees.

9.10 Personnel Obligations. Prior to beginning work under this Agreement relating to any research, Development or Commercialization of a Collaboration Compound or a Product, to HIF or in the Field, each employee, agent or independent contractor of AstraZeneca or FibroGen or of either Party's respective Affiliates shall be bound by non-disclosure and invention assignment obligations which are consistent with the obligations of AstraZeneca or FibroGen, as appropriate, in this Article 9, including without limitation: (a) promptly reporting any invention, discovery, process or other intellectual property right; (b) assigning to AstraZeneca or FibroGen, as appropriate, all of his or her right, title and interest in and to any invention, discovery, process or other intellectual property right, such that AstraZeneca or FibroGen, as appropriate, can then comply with its obligations under this Agreement with respect to such invention, discovery, process or other intellectual property right; (c) cooperating in the preparation, filing, prosecution, maintenance and enforcement of any patent and patent application; (d) performing all acts and signing, executing, acknowledging and delivering any and all documents required for effecting the obligations and purposes of this Agreement; and (e) abiding by the obligations of confidentiality and non-use set forth in Article 12. It is understood and agreed that such non-disclosure and invention assignment agreement need not reference or be specific to this Agreement.

9.11 Trademarks. The Parties shall use Commercially Reasonable Efforts to develop a worldwide trademark, and if not possible, trademark for the Territory consistent with the trademarks for Products selected under the Astellas Collaboration. AstraZeneca, following discussion with FibroGen, shall be responsible for the selection, registration, ownership, maintenance and defense of all trademarks for use in connection with the sale or marketing of Products in the Field in the Territory (the "***Marks***"), as well as all expenses associated therewith. All uses of the Marks shall be reviewed by the JCC and shall comply with all applicable laws and regulations (including those laws and regulations particularly applying to the proper use and designation of trademarks in the applicable countries). Neither Party shall, without the other Party's prior written consent, use any trademarks or house marks of the other Party (including the other Party's corporate name), or marks confusingly similar thereto, in connection with such Party's marketing or promotion of Products under this Agreement, except as may be expressly authorized in connection with activities under Article 5 and except to the extent required to comply with applicable laws and regulations. During the Term, AstraZeneca grants to FibroGen the non-exclusive right, free of charge, to use the AstraZeneca name and logo in the U.S. solely for the purpose of Commercializing the Products in accordance with the terms of this Agreement, the U.S. Commercialization Plan and the Co-Commercialization Agreement, and FibroGen grants to AstraZeneca the non-exclusive right, free of charge, to use the FibroGen name and logo in the U.S. solely for the purpose of Commercializing the Products in accordance with the terms of this Agreement, provided that such rights shall be exercised, and all Products bearing such names and/or logos shall be manufactured, in accordance with the quality standards for such logos and trademarks established by the JSC. AstraZeneca shall remain the owner of the AstraZeneca name and logo and the trademarks and the goodwill pertaining thereto. FibroGen shall remain the owner of the FibroGen name and logo and the trademarks and the goodwill pertaining thereto.

9.12 Listing. Prior to the submission of the first NDA of a Product in the U.S., the Parties shall discuss in good faith in the IP Committee the Orange Book listings. FibroGen shall be responsible for the submission of documents associated with Orange Book listings in accordance with the plan set forth by the IP Committee. Upon FibroGen's receipt of a notice of allowance (or equivalent) of an applicable FibroGen Patent, FibroGen shall promptly provide AstraZeneca notification of such allowance and the Parties shall discuss in good faith in the IP Committee whether to list such FibroGen Patent in the Orange Book maintained by the FDA or similar or equivalent patent listing source, if any, in other countries in the Territory. FibroGen shall cooperate with AstraZeneca's reasonable requests in connection therewith, including meeting any submission deadlines.

9.13 Patent Term Extension. AstraZeneca shall be responsible for and control, but shall confer with FibroGen in, the selection of the appropriate FibroGen Patents as listed in the patent information section of the NDA or MAA for Products for filing to obtain a Patent Term Extension pursuant to all applicable laws, including without limitation any other extensions that are now or become available in the future wherever applicable to such patents that are applicable to the Products; provided, however, that AstraZeneca shall not have the right to make any such filing with respect to any FibroGen Patent that is not set forth on **Exhibit M** without the prior written consent of FibroGen.

ARTICLE 10

REPRESENTATIONS AND WARRANTIES

10.1 Mutual Representations and Warranties. Each Party hereby represents, warrants, and covenants (as applicable) to the other Party as follows, as of the Effective Date:

(a) Corporate Existence and Power. It is a company or corporation duly organized, validly existing, and in good standing under the laws of the jurisdiction in which it is incorporated, and has full corporate power and authority and the legal right to own and operate its property and assets and to carry on its business as it is now being conducted and as contemplated in this Agreement, including, without limitation, the right to grant the licenses granted by it hereunder.

(b) Authority and Binding Agreement. (i) It has the corporate power and authority and the legal right to enter into this Agreement and perform its obligations hereunder; (ii) it has taken all necessary corporate action on its part required to authorize the execution and delivery of this Agreement and the performance of its obligations hereunder; and (iii) this Agreement has been duly executed and delivered on behalf of such Party, and constitutes a legal, valid, and binding obligation of such Party that is enforceable against it in accordance with its terms.

(c) No Conflict. It is not a party to and will not enter into any agreement that would prevent it from granting the rights granted to the other Party under this Agreement or performing its obligations under this Agreement.

(d) No Debarment. In the course of the Development of Products, such Party has not used prior to the Effective Date and shall not use, during the Term, any employee, agent or independent contractor who has been debarred by any Regulatory Authority, or, to the best of such Party's knowledge, is the subject of debarment proceedings by a Regulatory Authority.

10.2 Representations and Warranties by FibroGen. FibroGen hereby represents and warrants to AstraZeneca, as of the Effective Date, as follows:

(a) Title; Encumbrances. Except for the Patents licensed to FibroGen under the DFCI Agreement and the Information licensed to FibroGen under the Astellas Agreements, FibroGen is the sole and exclusive owner of the entire right, title and interest in (a) the Listed Patents and (b) the FibroGen Know-How existing as of the Effective Date. FibroGen has all rights necessary to grant the licenses under the FibroGen Technology that it grants to AstraZeneca under this Agreement. Neither the Listed Patents nor the FibroGen Know-How is subject to any mortgage, pledge, lien, security interest, conditional and installment sale agreements, encumbrance or charges or claims of any kind.

(b) No Other Patents than those Listed. The Listed Patents represent all Patents that, as of the Effective Date, are Controlled by FibroGen and which, to FibroGen's knowledge, cover or claim any invention necessary or useful for the Development or Commercialization of Collaboration Compounds or Products in the Field in the Territory as contemplated as of the Effective Date.

(c) Prosecution of Patents etc. To FibroGen's knowledge, the Listed Patents are being diligently prosecuted before the respective patent authorities in accordance with applicable law. All applicable fees due to patent authorities with respect to the filing and prosecution of the Listed Patents existing as of the Effective Date have been paid on or before the due date for payment (as such due date may be extended in accordance with applicable laws or patent authority rules and regulations). FibroGen has not received any written notice alleging that the Listed Patents existing as of the Effective Date, if issued, would be invalid or unenforceable or that the Patent applications included in such Listed Patents will not proceed to grant. To FibroGen's knowledge, in respect of any pending U.S. patent applications included in the Listed Patents, FibroGen has submitted all material prior art of which it is aware in accordance with the requirements of the United States Patent and Trademark Office. To its knowledge, FibroGen has properly identified each and every inventor of the claims of the Listed Patents existing as of the Effective Date.

(d) No Infringement or Misappropriation. FibroGen has not received any written notice from any Third Party asserting or alleging that any research or development of Collaboration Compounds or Products by FibroGen or by Astellas prior to the Effective Date infringed or misappropriated the intellectual property rights of such Third Party and FibroGen has no reason to suspect that any such infringement or misappropriation has occurred. To FibroGen's knowledge, the conception, development and reduction to practice of the Listed Patents and FibroGen Know-How existing as of the Effective Date have not constituted or involved the misappropriation of trade secrets or other proprietary rights of any person or entity.

(e) Non-infringement of Third Party Rights. To FibroGen's knowledge, the research, development, manufacture, use and sale after the Effective Date of FG-4592 in the CKD Indications can be carried out in the manner reasonably contemplated as of the Effective Date without infringing any published patent applications or patents owned or controlled by a Third Party.

(f) No Proceedings. There are no pending actions, suits or proceedings against FibroGen or any of its Affiliates involving the FibroGen Technology, Collaboration Compounds or Products.

(g) Third Party Activities. To FibroGen's knowledge, except as disclosed in a writing of even date herewith by FibroGen to AstraZeneca, there are no activities by Third Parties that would constitute infringement or misappropriation of the FibroGen Technology (in the case of pending claims, evaluating them as if issued).

(h) DFCI Agreement. The DFCI Agreement is in full force and effect. FibroGen has no cause to believe that the DFCI Agreement is likely to be terminated prior to its expiry. To FibroGen's knowledge, neither DFCI nor FibroGen is in breach of any of its obligations under the DFCI Agreement. [*].

(i) Astellas Agreements. Nothing in the Astellas Agreements prevents FibroGen from granting the rights to AstraZeneca granted under this Agreement or prevents either FibroGen or AstraZeneca from exercising their rights or performing their obligations under this Agreement.

(j) Documentation Made Available to AstraZeneca. FibroGen has made available to AstraZeneca all material Regulatory Material, FibroGen Know-How and other Information in its possession or Control regarding or related to any Collaboration Compound and Product. All Regulatory Material, FibroGen Know-How and other Information in FibroGen's possession and Control provided to AstraZeneca regarding or related to any Collaboration Compound or Product are, to FibroGen's knowledge, true, complete and correct in all material respects. As of the Effective Date, FibroGen has prepared, maintained and retained in all material respects all material Regulatory Material that FibroGen is required to maintain or report pursuant to and in accordance with GLP, GCP, regulations and other applicable law.

(k) Patent Litigation. Neither FibroGen nor its Affiliates will initiate or maintain any patent enforcement proceeding or litigation with respect to any Designated Product unless it has a good faith basis for doing so.

10.3 Anti-Bribery and Anti-Corruption Compliance.

(a) Each Party agrees, on behalf of itself, its officers, directors and employees and on behalf of its Affiliates, agents, representatives, consultants and subcontractors hired in connection with the subject matter of this Agreement (together with such Party, the "***Representatives***") that for the performance of its obligations hereunder:

(i) The Representatives shall not directly or indirectly pay, offer or promise to pay, authorize the payment of any money or give, offer or promise to give, or authorize the giving of anything else of value, to: (a) any Government Official in order to influence official action; (b) any individual or entity (whether or not a Government Official) (1) to influence such individual or entity to act in breach of a duty of good faith, impartiality or trust ("acting improperly"), (2) to reward such individual or entity for acting improperly or (3) where such individual or entity would be acting improperly by receiving the money or other thing of value; (c) any individual or entity (whether or not a Government Official) while knowing or having reason to know that all or any portion of the money or other thing of value will be paid, offered, promised or given to, or will otherwise benefit, a Government Official in order to influence official action for or against either Party in connection with the matters that are the subject of this Agreement; or (d) any individual or entity (whether or not a Government Official) to reward that individual or entity for acting improperly or to induce that individual or entity to act improperly.

(ii) The Representatives shall not, directly or indirectly, solicit, receive or agree to accept any payment of money or anything else of value in violation of the Anti-Corruption Laws.

(b) The Representatives shall comply with the Anti-Corruption Laws plus the AstraZeneca Anti-Corruption Rules and Policies and shall not take any action that will, or would reasonably be expected to, cause either Party or its Affiliates to be in violation of any such laws or policies.

(c) Each Party, on behalf of itself and its other Representatives, represents and warrants to the other Party that to the best of such Party's and its Affiliates' knowledge, no Representative that will participate or support its performance of its obligations hereunder has,

directly or indirectly, (i) paid, offered or promised to pay or authorized the payment of any money, (ii) given, offered or promised to give or authorized the giving of anything else of value or (iii) solicited, received or agreed to accept any payment of money or anything else of value, in each case ((i), (ii) and (iii)), in violation of the Anti-Corruption Laws during the three (3) years preceding the date of this Agreement.

(d) Each Party shall promptly provide the other Party with written notice of the following events: (i) upon becoming aware of any breach or violation by such Party or its Representative of any representation, warranty or undertaking set forth in Sections 10.3(a)-(c); or (ii) upon receiving a formal notification that it is the target of a formal investigation by a Governmental Authority for a Material Anti-Corruption Law Violation or upon receipt of information from any of the Representatives connected with this Agreement that any of them is the target of a formal investigation by a governmental authority for a Material Anti-Corruption Law Violation.

(e) Without prejudice to any auditing or inspection rights set forth elsewhere in this Agreement, each Party shall for the term of this Agreement and six (6) years thereafter, for the purpose of allowing the other Party to audit and monitor the performance of its compliance with this Agreement and particularly this Section 10.3 permit the other Party, its Affiliates, any auditors of any of them and any governmental authority to have reasonable access to any premises of such Party or other Representatives used in connection with this Agreement, together with a right to reasonably access personnel and records that relate to this Agreement ("***Compliance Audit***"). The results of any such audit shall constitute Confidential Information of the audited Party, in respect of which the other Party shall comply with the provisions contained in Article 12 (subject to the terms and exceptions set forth therein or in this Section 10.3).

(i) To the extent that any Compliance Audit by a Party requires access and review of any commercially or strategically sensitive information of the other Party or any of its other Representatives relating to the business of such Party or any other Representatives (including information about prices and pricing policies, cost structures and business strategies), such activity shall be carried out by a Third Party professional advisor appointed by the other Party and such professional advisors shall only report back to the other Party such information as is directly relevant to informing the other Party on such Party's compliance with the particular provisions of the Agreement being Compliance Audited.

(ii) Each Party shall, and shall cause its Representatives to, provide all cooperation and assistance during normal working hours as reasonably requested by the other Party for the purposes of a Compliance Audit. Such other Party shall ensure that any Third Party auditor enters into a confidentiality agreement consistent with applicable requirements of Article 12 hereof in all material respects. Such other Party shall instruct any Third Party auditor or other Person given access in respect of a Compliance Audit to cause the minimum amount of disruption to the business of the audited Party and its Affiliates and to comply with relevant building and security regulations.

(iii) The costs and fees of any Compliance Audit shall be paid by the auditing Party, except that if an inspection or Compliance Audit reveals any breach or violation by the audited Party (including through its other Representatives) of any representation, warranty or

undertaking set forth in Sections 10.3(a)-(c), the costs of such inspection or Compliance Audit shall be paid by the audited Party. The audited Party shall bear its own costs of rendering assistance to the Compliance Audit.

(f) On the occurrence of any of the following events: (A) A Party becomes aware of, whether or not through a Compliance Audit, that the other Party (or any other Representative) is in breach or violation of any representation, warranty or undertaking in Sections 10.3(a)-(c) or of the Anti-Corruption Laws; or (B) notification is received under Section 10.3(d) relating to any suspected or actual Material Anti-Corruption Law Violation by a Party or its Representative, in either case ((A) or (B)), the other Party shall have the right, in addition to any other rights or remedies under this Agreement or to which such other Party may be entitled in law or equity, to (x) take such steps as are reasonably necessary in order to avoid a potential violation or continuing violation by such other Party or any of its Affiliates of the Anti-Corruption Laws, including by requiring that the Party agrees to such additional measures, representations, warranties, undertakings and other provisions as such other Party believes in good faith are reasonably necessary ("***Provisions***") and (y) terminate any or all of the activities conducted by the Party pursuant to this Agreement or this Agreement in its entirety, immediately in the event that:

(i) A Party refuses to agree to all of the Provisions required by the other Party pursuant to this clause; *provided* that such other Party has (a) provided the Party an explanation in reasonable detail as to why such other Party considers such provisions necessary, (b) given the Party a reasonable opportunity to review and comment on the proposed Provisions and to provide its view as to the necessity or usefulness of these to address the event concerned and (c) considered such comments in good faith, or

(ii) A Party reasonably concludes that there is no Provision available that would enable such Party or its Affiliates to avoid a potential violation or continuing violation of applicable Anti-Corruption Laws.

(g) Any termination of this Agreement pursuant to Section 10.3(f) shall be treated as a termination for breach and the consequences of termination set forth in Sections 13.6 and 13.7, as applicable, shall apply and additionally: (i) subject to the accrued rights of the Parties prior to termination, the terminating Party shall have no liability to the other Party for any fees, reimbursements or other compensation or for any loss, cost, claim or damage resulting, directly or indirectly, from such termination; and (ii) any amounts that would otherwise be payable with respect to such terminated activities or pursuant to this Agreement in its entirety, as applicable, including any then outstanding and unpaid claims for payment shall be null and void to the extent permissible under applicable laws.

(h) Each Party shall be responsible for any breach of any representation, warranty or undertaking in this Section 10.3 or of the Anti-Corruption Laws by any of its Representatives.

(i) Each Party may disclose the terms of this Agreement or any action taken under this Section 10.3 to prevent a potential violation or continuing violation of applicable Anti-Corruption Laws, including the identity of the other Party and the payment terms, to any Governmental Authority if such Party determines, upon advice of counsel, that such disclosure is necessary.

(j) Each Party represents and warrants that (i) it has reviewed its internal programs in relation to the Anti-Corruption Laws and the ability of the Representatives to adhere to the AstraZeneca Anti-Corruption Rules and Policies in performance of its obligations hereunder in advance of the signing of this Agreement, (ii) it and the other Representatives can and will continue to comply with such Anti-Corruption Laws and the AstraZeneca Anti-Corruption Rules and Policies in performance of its obligations hereunder. Should either Party identify in writing to the other Party any measures that should be reasonably taken to improve the Representatives' compliance with such Anti-Corruption Laws and the AstraZeneca Anti-Corruption Rules and Policies for the performance of its obligations hereunder (the "***Improvement Plan***"), the other Party shall implement such Improvement Plan within an agreed reasonable timeframe (which shall in any event not be in excess of three (3) calendar months) from the date the Improvement Plan is delivered to the receiving Party or otherwise the requesting Party shall be entitled to (x) terminate this Agreement, upon written notice to the other Party with immediate effect, (y) be relieved of any obligations hereunder and (z) seek compensation from the other Party.

10.4 Disclaimer. Each Party understands that the Collaboration Compounds and Products are the subject of ongoing clinical research and development and that the other Party cannot assure the safety or usefulness of the Collaboration Compounds or Products. In addition, FibroGen makes no warranties except as set forth in this Article 10 concerning the FibroGen Technology, and AstraZeneca makes no warranties except as set forth in this Article 10 concerning the AstraZeneca Technology.

10.5 No Other Representations or Warranties. EXCEPT AS EXPRESSLY STATED IN SECTION 5.11 AND THIS ARTICLE 10, NO REPRESENTATIONS OR WARRANTIES WHATSOEVER, WHETHER EXPRESS OR IMPLIED, INCLUDING, WITHOUT LIMITATION, WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, NON-INFRINGEMENT, OR NON-MISAPPROPRIATION OF THIRD PARTY INTELLECTUAL PROPERTY RIGHTS, IS MADE OR GIVEN BY OR ON BEHALF OF A PARTY. EXCEPT AS EXPRESSLY STATED IN THIS AGREEMENT, ALL REPRESENTATIONS AND WARRANTIES, WHETHER ARISING BY OPERATION OF LAW OR OTHERWISE, ARE HEREBY EXPRESSLY EXCLUDED.

ARTICLE 11

INDEMNIFICATION

11.1 Indemnification by FibroGen. FibroGen shall defend, indemnify, and hold AstraZeneca, its Affiliates, and their respective officers, directors, employees, and agents (the "***AstraZeneca Indemnitees***") harmless from and against any and all damages or other amounts payable to a Third Party claimant, as well as any reasonable attorneys' fees and costs of litigation incurred by such AstraZeneca Indemnitees (collectively, "***AstraZeneca Damages***"), all to the extent resulting from claims, suits, proceedings or causes of action brought by such Third Party ("***AstraZeneca Claims***") against such AstraZeneca Indemnitee that arise from or are based on: (a) a breach of any of FibroGen's representations, warranties, and obligations under this Agreement;

(b) the willful misconduct or grossly negligent acts or omissions of FibroGen, its Affiliates, or the officers, directors, employees, or agents of FibroGen or its Affiliates in the performance of activities under this Agreement; (c) the research or Development of Collaboration Compounds or Products by FibroGen before the Effective Date; or (d) the Development, testing, manufacture, storage, handling, use, sale, offer for sale, distribution and importation of Products by FibroGen or its Affiliates or licensees (excluding, for clarity, AstraZeneca). The foregoing indemnity obligation shall not apply if the AstraZeneca Indemnitees materially fail to comply with the indemnification procedures set forth in Section 11.3, or to the extent that such AstraZeneca Claim is based on or alleges: (i) a breach of any of AstraZeneca's representations, warranties, and obligations under this Agreement; or (ii) the willful misconduct or grossly negligent acts or omissions of AstraZeneca or its Affiliates, or the officers, directors, employees, or agents of AstraZeneca or its Affiliates in the performance of activities under this Agreement.

11.2 Indemnification by AstraZeneca. AstraZeneca shall defend, indemnify, and hold FibroGen, its Affiliates, and each of their respective officers, directors, employees, and agents, (the "***FibroGen Indemnitees***") harmless from and against any and all damages or other amounts payable to a Third Party claimant, as well as any reasonable attorneys' fees and costs of litigation incurred by such FibroGen Indemnitees (collectively, "***FibroGen Damages***"), all to the extent resulting from any claims, suits, proceedings or causes of action brought by such Third Party (collectively, "***FibroGen Claims***") against such FibroGen Indemnitee that arise from or are based on: (a) the Development, testing, manufacture, storage, handling, use, sale, offer for sale, distribution and importation of Products by AstraZeneca or its Affiliates, Sublicensees, or distributors; (b) a breach of any of AstraZeneca's representations, warranties, and obligations under the Agreement; or (c) the willful misconduct or grossly negligent acts or omissions of AstraZeneca or its Affiliates, or the officers, directors, employees, or agents of AstraZeneca or its Affiliates in the performance of activities under this Agreement. The foregoing indemnity obligation shall not apply if the FibroGen Indemnitees materially fail to comply with the indemnification procedures set forth in Section 11.3, or to the extent that any FibroGen Claim is based on or alleges: (i) a breach of any of FibroGen's representations, warranties, and obligations under this Agreement; or (ii) the willful misconduct or grossly negligent acts or omissions of FibroGen, its Affiliates, or their officers, directors, employees, or agents in the performance of activities under this Agreement.

11.3 Indemnification Procedures. The Party claiming indemnity under this Article 11 (the "***Indemnified Party***") shall give written notice to the Party from whom indemnity is being sought (the "***Indemnifying Party***") promptly after learning of the claim, suit, proceeding or cause of action for which indemnity is being sought ("***Claim***"). The Indemnified Party shall provide the Indemnifying Party with reasonable assistance, at the Indemnifying Party's expense, in connection with the defense of the Claim for which indemnity is being sought. The Indemnified Party may participate in and monitor such defense with counsel of its own choosing at its sole expense; provided, however, the Indemnifying Party shall have the right to assume and conduct the defense of the Claim with counsel of its choice. The Indemnifying Party shall not settle any Claim without the prior written consent of the Indemnified Party, not to be unreasonably withheld, unless the settlement involves only the payment of money. So long as the Indemnifying Party is actively defending the Claim in good faith, the Indemnified Party shall not settle any such Claim without the prior written consent of the Indemnifying Party. If the Indemnifying Party does not assume and conduct the defense of the Claim as provided above, (a) the Indemnified Party may defend

against, and consent to the entry of any judgment or enter into any settlement with respect to the Claim in any manner the Indemnified Party may deem reasonably appropriate (and the Indemnified Party need not consult with, or obtain any consent from, the Indemnifying Party in connection therewith), and (b) the Indemnifying Party will remain responsible to indemnify the Indemnified Party as provided in this Article 11.

11.4 Insurance. Each Party shall self-insure or procure and maintain insurance, including product liability insurance, with respect to its activities hereunder and which are consistent with normal business practices of prudent companies similarly situated at all times during which any Product is being clinically tested in human subjects or commercially distributed or sold until the expiration or termination of this Agreement or four (4) years after termination of any such clinical testing or commercial distribution, whichever is later. It is understood that such insurance shall not be construed to create a limit of either Party's liability with respect to its indemnification obligations under this Article 11. Each Party shall provide the other with written evidence of such insurance upon request. Each Party shall provide the other with written notice at least thirty (30) days prior to the cancellation, non-renewal or material change in such insurance or self-insurance which materially adversely affects the rights of the other Party hereunder.

11.5 DFCI Agreement. [*]

ARTICLE 12

CONFIDENTIALITY

12.1 Product Information. FibroGen recognizes that by reason of, among other things, AstraZeneca's status as licensee pursuant to the grants under Section 7.1, AstraZeneca has an interest in FibroGen's retention in confidence of information relating to the Collaboration Compounds or Products, and the Development and Commercialization thereof. Accordingly, during the Term, FibroGen shall, and shall cause its Affiliates and their respective officers, directors, employees and agents to, keep confidential, and not publish or otherwise disclose, other than under written confidentiality and non-use terms, and not use directly or indirectly for any purpose other than to perform FibroGen's obligations under this Agreement and the China Agreement, to conduct research, Development and Commercialization of Products outside the Territory pursuant to the Astellas Agreements or any Subsequent Agreement entered into pursuant to Section 7.4(c), in connection with FibroGen's research, development and commercialization of other products, and as otherwise authorized under this Agreement (including pursuant to Section 3.10), any (a) Regulatory Material (including any Regulatory Approvals) with respect to any Collaboration Compound or Product and (b) Information that is either Controlled by FibroGen or provided to FibroGen pursuant to this Agreement relating to the Development or Commercialization of Collaboration Compounds or Products, including development, sales or marketing plans therefor (collectively, (a) and (b), "***Product Information***"), except, in each case, to the extent (i) the Product Information was generally available to the public or otherwise part of the public domain, prior to the Effective Date, or thereafter became generally available to the public or otherwise part of the public domain through no fault of FibroGen, its Affiliates or any of their respective officers, directors, employees or agents or (ii) the disclosure or use of such Product Information would be expressly permitted under Section 12.3 or is otherwise expressly authorized under this Agreement. For clarification, the disclosure or transfer by FibroGen to AstraZeneca or

by AstraZeneca to FibroGen of any Product Information shall not cause such information to cease to be subject to the provisions of this Section 12.1. In the event this Agreement is terminated in its entirety or in a given country for any reason, this Section 12.1 shall as from the effective date of such termination have no continuing force or effect (provided that if such termination is with respect to one or several specific country(ies) only, then this Section 12.1 will have no continuing force or effect as to such specific country(ies)) and all Product Information shall be deemed to be Confidential Information of FibroGen for purposes of the surviving provisions of this Agreement. For clarity, the foregoing shall not affect the Parties' respective ownership of Product Information.

12.2 Confidentiality General. Except to the extent expressly authorized by this Agreement or otherwise agreed in writing by the Parties, each Party agrees that, during the Term and for ten (10) years thereafter, it shall keep confidential and shall not publish or otherwise disclose and shall not use for any purpose other than as provided for in this Agreement or the China Agreement (which includes the exercise of any rights or the performance of any obligations hereunder or thereunder) any Confidential Information furnished to it by the other Party pursuant to this Agreement except for that portion of such information or materials that the receiving Party can demonstrate by competent written proof:

(a) was already known to the receiving Party or its Affiliate, other than under an obligation of confidentiality, at the time of disclosure by the other Party;

(b) was generally available to the public or otherwise part of the public domain at the time of its disclosure to the receiving Party;

(c) became generally available to the public or otherwise part of the public domain after its disclosure and other than through any act or omission of the receiving Party in breach of this Agreement;

(d) is subsequently disclosed to the receiving Party or its Affiliate by a Third Party without obligations of confidentiality with respect thereto; or

(e) is independently discovered or developed by the receiving Party or its Affiliate without the aid, application, or use of the disclosing Party's Confidential Information.

For the avoidance of doubt, Confidential Information that is also Product Information is governed both by the terms of Section 12.1 and by the terms of this Section 12.2.

12.3 Authorized Disclosure. FibroGen may disclose Product Information and each Party may disclose Confidential Information belonging to the other Party to the extent such disclosure is reasonably necessary in the following situations:

(a) filing or prosecuting FibroGen Patents in accordance with Article 9;

(b) regulatory filings and other filings with Governmental Authorities (including Regulatory Authorities), including filings with the SEC or FDA, with respect to a Product;

(c) prosecuting or defending litigation;

(d) complying with applicable laws and regulations, including regulations promulgated by securities exchanges;

(e) disclosure to its Affiliates, employees, agents, and independent contractors, and any licensees or Sublicensees, in each case only on a need-to-know basis and solely in connection with the performance of this Agreement or the China Agreement (and in the case of FibroGen, the Astellas Collaboration or any Subsequent Agreement entered into pursuant to Section 7.4(c)), provided, however, that each disclosee must be bound by obligations of confidentiality and non-use at least equivalent in scope to those set forth in this Article 12 prior to any such disclosure and provided, further, that the disclosing Party shall cause such disclosee to comply with confidentiality and non-use obligations at least as restrictive as those set forth in this Article 12;

(f) disclosure of the material terms of this Agreement to any bona fide potential or actual investor, investment banker, acquirer, merger partner, or other potential or actual financial partner, and in the case of FibroGen, to any licensee or sublicensee of Products (including Astellas and its sublicensees); provided that in connection with such disclosure, the disclosing Party shall inform each disclosee of the confidential nature of such Confidential Information and cause each disclosee to treat such Confidential Information as confidential; and

(g) disclosure of any Inventions or status reports (including data from any Clinical Trials) to any bona fide potential or actual investor, investment banker, acquirer, merger partner, or other potential or actual financial partner, and in the case of FibroGen, to any licensee of Products (including Astellas and its sublicensees); provided that each disclosee must be bound by obligations of confidentiality and non-use at least as restrictive as those set forth in this Article 12 prior to any such disclosure.

Notwithstanding the foregoing, in the event FibroGen is required to make a disclosure of Product Information or either Party is required to make a disclosure of the other Party's Confidential Information pursuant to Sections 12.3(a), 12.3(b), 12.3(c) or 12.3(d), it will, except where impracticable, use Commercially Reasonable Efforts to secure confidential treatment of such information. In any event, the Parties agree to take all reasonable action to avoid disclosure of Confidential Information hereunder.

12.4 Publicity; Terms of Agreement.

(a) The Parties agree that the material terms of this Agreement are the Confidential Information of both Parties, subject to the special authorized disclosure provisions set forth in Section 12.3 and this Section 12.4. The Parties have agreed to make a joint public announcement of the execution of this Agreement substantially in the form of the press release attached as **Exhibit N** on or promptly after the Effective Date.

(b) After release of such press release, if either Party desires to make a public announcement concerning the material terms of this Agreement or any activities under this Agreement, such Party shall give reasonable prior advance notice of the proposed text of such announcement to the other Party for its prior review and approval (except as otherwise provided herein), such approval not to be unreasonably withheld, except that in the case of a press release or

governmental filing required by law, the disclosing Party shall provide the other Party with such advance notice as it reasonably can and shall not be required to obtain approval therefor. A Party commenting on such a proposed press release shall provide its comments, if any, within five (5) Business Days after receiving the press release for review. FibroGen shall have the right to make a press release announcing the achievement of each milestone under this Agreement as it is achieved, and the achievements of Regulatory Approvals as they occur, subject only to the review procedure set forth in the preceding sentence. In relation to AstraZeneca's review of such an announcement, AstraZeneca may make specific, reasonable comments on such proposed press release within the prescribed time for commentary, but shall not withhold its consent to disclosure of the information that the relevant milestone or Regulatory Approval has been achieved and triggered a payment hereunder. Neither Party shall be required to seek the permission of the other Party to repeat any information regarding the terms of this Agreement that have already been publicly disclosed by such Party, or by the other Party, in accordance with this Section 12.4.

(c) The Parties acknowledge that either or both Parties may be obligated to file a copy of this Agreement with the SEC or other Government Authorities. Each Party shall be entitled to make such a required filing, provided that it requests confidential treatment of at least the commercial terms and sensitive technical terms hereof and thereof to the extent such confidential treatment is reasonably available to such Party. In the event of any such filing, each Party will provide the other Party with a copy of the Agreement marked to show provisions for which such Party intends to seek confidential treatment and shall reasonably consider and incorporate the other Party's comments thereon to the extent consistent with the legal requirements governing redaction of information from material agreements that must be publicly filed.

12.5 Publications.

(a) Subject to the International Committee of Medical Journal Editors ("ICMJE") Uniform Requirements for Manuscripts Submitted to Biomedical Journals and applicable legal requirements, the JDC (with approval of the JSC) will determine the overall strategy for publishing and presenting results of studies pertaining to the Products and the JDC shall approve all publications in the Territory prior to publication.

(b) Neither Party shall publicly present or publish results of studies carried out under this Agreement (each such presentation or publication a "***Publication***") without the opportunity for prior review by the other Party, except to the extent otherwise required by applicable laws or regulations, in which case Section 12.4(c) shall apply with respect to disclosures required by applicable securities laws and Section 12.3(b) shall apply with respect to disclosures required for regulatory filings. The submitting Party shall provide the other Party the opportunity to review any proposed Publication at least thirty (30) days prior to the earlier of its presentation or intended submission for publication. The submitting Party agrees, upon request by the other Party, not to submit or present any Publication until the other Party has had thirty (30) days to comment on any material in such Publication. The submitting Party shall consider the comments of the other Party in good faith, and no Publication shall be submitted for publication without the approval of the JDC or JCC. The submitting Party shall provide the other Party a copy of the Publication at the time of the submission or presentation. Notwithstanding the foregoing, AstraZeneca shall not have the right to publish or present FibroGen's Confidential Information without FibroGen's prior written consent, and FibroGen shall not have the right to publish or

present AstraZeneca's Confidential Information without AstraZeneca's prior written consent. Each Party agrees to acknowledge the contributions of the other Party, and the employees of the other Party, in all publications as scientifically appropriate.

ARTICLE 13

TERM AND TERMINATION

13.1 Term. This Agreement shall become effective on the Effective Date and, unless earlier terminated pursuant to this Article 13, shall remain in effect until the date that AstraZeneca is no longer Developing or selling Products in the Territory (the "***Term***").

13.2 Termination by AstraZeneca at Will. AstraZeneca shall have the right to terminate this Agreement at any time upon one hundred eighty (180) days prior written notice to FibroGen, either (a) in its entirety or (b) with respect to one or more of the following (each a "region"): (i) the U.S., (ii) Asia, (iii) Africa or (iv) one or more of Mexico, Brazil, Canada, India or Australia and New Zealand (each considered a separate region). During such one hundred eighty (180) day period, AstraZeneca shall continue to perform all of its obligations under this Agreement and shall continue to be responsible for all costs incurred under the Agreement to be borne by AstraZeneca according to the Agreement during such one hundred eighty (180) day period.

13.3 Termination by AstraZeneca for Technical Product Failure. AstraZeneca may terminate this Agreement in its entirety at any time after the Effective Date effective upon written notice to FibroGen in the event of Technical Product Failure, such notice to describe the basis for such Technical Product Failure in reasonable detail; provided, however, that AstraZeneca shall *not* be entitled to terminate this Agreement pursuant to this Section 13.3 if such Technical Product Failure pertains only to one or several specific Collaboration Compound(s) or Product(s) but does not affect (a) FG-4592 (if FG-4592 is then still being Developed or Commercialized under this Agreement) or (b) any other Collaboration Compound or Product then in a Phase 2 Clinical Trial or later stage of Development or Commercialization under this Agreement. Disputes related to whether or not a Technical Product Failure has occurred will be resolved in accordance with Section 14.8.

13.4 Termination by Either Party for Breach.

(a) Breach. Subject to Section 13.4(b), FibroGen shall have the right to terminate this Agreement upon written notice to AstraZeneca if AstraZeneca materially breaches its obligations under this Agreement and, after receiving written notice from FibroGen identifying such material breach by AstraZeneca in reasonable detail, fails to cure such material breach within ninety (90) days from the date of such notice (or within thirty (30) days from the date of such notice in the event such material breach is solely based upon AstraZeneca's failure to pay any material amounts due to FibroGen hereunder). Subject to Section 13.4(b), AstraZeneca shall have the right to terminate this Agreement upon written notice to FibroGen if FibroGen materially breaches its obligations under this Agreement and, after receiving written notice from AstraZeneca identifying such material breach by FibroGen in reasonable detail, fails to cure such material breach within ninety (90) days from the date of such notice (or within thirty (30) days from the date of such notice in the event such material breach is solely based upon FibroGen's failure to pay any material amounts due to AstraZeneca hereunder).

(b) Disputed Breach. If the alleged breaching Party disputes in good faith the existence or materiality of a breach specified in a notice provided by the other Party in accordance with Section 13.4(a), and such alleged breaching Party provides the other Party notice of such dispute within such ninety (90) day (or thirty (30) day, as the case may be) period, then the non-breaching Party shall not have the right to terminate this Agreement under Section 13.4(a) unless and until the arbitral tribunal, in accordance with Article 14, has determined that the alleged breaching Party has materially breached the Agreement and such Party fails to cure such breach within ninety (90) days following such arbitral tribunal's decision (except to the extent such breach is solely based on the failure to make a payment when due, which breach must be cured within thirty (30) days following such arbitral tribunal's decision); provided that with respect to a failure to pay amounts due, arbitration shall be conducted in accordance with Article 14, except that it shall be conducted by only one arbitrator and shall be resolved within ninety (90) days. It is understood and agreed that during the pendency of such dispute, all of the terms and conditions of this Agreement shall remain in effect and the Parties shall continue to perform all of their respective obligations hereunder.

(c) DFCI Agreement. FibroGen shall have the right to terminate AstraZeneca's license under the FibroGen Technology licensed from DFCI immediately upon written notice upon a termination of the DFCI Agreement under Section 8.2 of the DFCI Agreement, provided, however, that FibroGen shall use Commercially Reasonable Efforts to ensure that AstraZeneca is afforded an opportunity to obtain a license directly with DFCI as set out in Section 8.4.5 of the DFCI Agreement.

13.5 Termination for Patent Challenge. FibroGen may terminate this Agreement in its entirety immediately upon written notice to AstraZeneca if AstraZeneca or its Affiliates or Sublicensees (directly or indirectly, individually or in association with any other person or entity) challenges the validity, enforceability or scope of any FibroGen Patent in the Territory and such challenge is not permanently withdrawn within ninety (90) days.

13.6 Effects of Termination. Upon any termination of this Agreement other than pursuant to Section 13.3 for Technical Product Failure, the following shall apply (in addition to any other rights and obligations under Section 13.8 or otherwise under this Agreement with respect to such termination) and, in the case of termination with respect to a particular region only, shall apply only to the terminated region (it being understood that any reference below to the "terminated region" will apply to the Territory as a whole if this Agreement is terminated in its entirety):

(a) Rights and Licenses to the FibroGen Technology. As from the effective date of the termination, all licenses and rights to the FibroGen Technology granted to AstraZeneca under Article 7 shall terminate with respect to the terminated region, except to the extent and for so long as is necessary to permit AstraZeneca to comply with its obligations under this Section 13.6, to dispose of any remaining inventory of Products pursuant to Section 13.6(g) and to perform any activity that cannot be terminated as of such date under applicable law, including GCP, it being agreed that all such activities and responsibilities shall be discontinued and ceased (unless otherwise agreed) by transitioning such activities and responsibilities to FibroGen as soon as practicable and subject to applicable law, including GCP.

(b) AstraZeneca Technology. AstraZeneca hereby grants to FibroGen, effective only upon the effective date of such termination, a non-exclusive, fully-paid, perpetual,

irrevocable, royalty-free license, with the right to grant multiple tiers of sublicenses, under the AstraZeneca Technology, to research, develop, make, have made, use, import, export, offer for sale, and sell Products in the Field in the terminated region; provided that FibroGen shall indemnify, defend and hold harmless AstraZeneca and each of the AstraZeneca Indemnitees as set forth in Section 11.1 from and against any AstraZeneca Damages arising out of or resulting from AstraZeneca Claims that arise or result from FibroGen's, its Affiliates' or licensees' activities performed under the foregoing license.

(c) Marks. AstraZeneca shall assign to FibroGen all right, title and interest in and to the Marks for the terminated regions (excluding any such Marks that include, in whole or part, any corporate name or logo of AstraZeneca or its Affiliate or Sublicensee or that relate to any other products of AstraZeneca or its Affiliates).

(d) Regulatory Materials. AstraZeneca shall transfer and assign to FibroGen all Regulatory Materials and Regulatory Approvals for Products in the terminated regions, if any, that are Controlled by AstraZeneca or its Affiliates or Sublicensees.

(e) Transition Assistance. AstraZeneca shall, at no cost to FibroGen, provide reasonable consultation and assistance for a period of no more than one hundred eighty (180) days following the effective date of termination for the purpose of transferring or transitioning to FibroGen, all AstraZeneca Know-How solely related to a Product not already in FibroGen's possession, and, at FibroGen's request, all then-existing commercial arrangements relating specifically to the terminated region and the Products to the extent reasonably necessary or useful for FibroGen to commence or continue developing, manufacturing, or commercializing Products in the terminated region, and further to the extent AstraZeneca is contractually able to do so. The foregoing consultation and assistance shall include, without limitation, assigning, upon request of FibroGen, any agreements with Third Party suppliers or vendors that specifically cover the supply or sale of Products in the Territory, to the extent such agreements are assignable by AstraZeneca. If any such contract between AstraZeneca and a Third Party is not assignable to FibroGen (whether by such contract's terms or because such contract does not relate specifically to Products) but is otherwise reasonably necessary or useful for FibroGen to commence or continue developing, manufacturing, or commercializing Products, then AstraZeneca shall reasonably cooperate with FibroGen to negotiate for the continuation of such license and/or supply from such entity. In any event, if AstraZeneca is manufacturing bulk or finished Product under an agreement entered into pursuant to Section 6.4, then AstraZeneca shall supply such bulk or finished Product, as applicable, to FibroGen and Astellas, for a reasonable transitional period (not to exceed twelve (12) months from the effective date of the termination, subject to reasonable extension by FibroGen if AstraZeneca is unable to timely effect the technology transfer required to have a Third Party manufacturer designated by FibroGen undertake the manufacturing responsibilities) under the terms of such agreement until FibroGen either enters into a separate agreement with such Third Party supplier or vendor or establishes an alternate, validated source of supply for the Products. In consideration of such supplies, FibroGen shall pay to AstraZeneca a price equal to AstraZeneca's actual cost to manufacture or acquire such supplies, provided that where termination is by AstraZeneca pursuant to Section 13.4(a), FibroGen shall pay to AstraZeneca a price equal to AstraZeneca's actual cost to manufacture or acquire such supplies plus a mark-up [*] of such actual cost.

(f) Ongoing Clinical Trials. As soon as practicable and subject to applicable law, including GCP, AstraZeneca shall transfer to FibroGen the management and continued performance of all Clinical Trials for Products for the terminated regions ongoing as of the effective date of such termination, that are being conducted by AstraZeneca at such time.

(g) Remaining Inventories. If this Agreement is terminated in its entirety, FibroGen shall have the right to purchase from AstraZeneca any or all of the inventory of Products held by AstraZeneca as of the effective date of the termination (that are not committed to be supplied to any Third Party in the ordinary course of business as of the date of termination) at a price equal to AstraZeneca's actual cost to acquire such inventory. FibroGen shall notify AstraZeneca within sixty (60) days after the effective date of the termination whether FibroGen elects to exercise such right. In the event FibroGen does not elect to exercise such right AstraZeneca shall be entitled to dispose of such inventory as it sees fit in compliance with applicable law, subject to all applicable payments to FibroGen under Article 8.

(h) Funding of Development Costs. If AstraZeneca terminates this Agreement under Section 13.2 (but not in the event of any other termination), then AstraZeneca shall remain responsible for all (or, if during the Development Sharing Period, fifty percent (50%) of) Development Costs and all Commercialization Costs incurred by FibroGen under the respective Development Plans and Commercialization Plans [*], under the process in Section 8.2. If AstraZeneca terminates this Agreement under Section 13.2 (but not in the event of any other termination), AstraZeneca shall [*].

(i) Post-Termination Restriction. If this Agreement is terminated by AstraZeneca at will under Section 13.2 or by FibroGen under Section 13.4 for AstraZeneca's material breach or by FibroGen under Section 13.5 for patent challenge, AstraZeneca shall continue to comply with the restrictive covenant set out in Section 7.8(a) for three (3) years after the effective date of the termination.

(j) No Other Rights. For the avoidance of doubt, the rights granted to FibroGen under this Section 13.6 are restricted to Collaboration Compounds and Products and AstraZeneca does not grant any rights whatsoever to any other compounds or products or to any Patents or other intellectual property rights other than as set forth in this Section 13.6. Moreover, AstraZeneca shall not be obligated to provide FibroGen with any other intellectual property rights or other rights or services than that which are explicitly provided for under this Section 13.6.

(k) Certain Additional Provisions for Termination for FibroGen's Breach. If this Agreement is terminated under Section 13.4 for FibroGen's material breach, FibroGen shall – in addition to any other remedies available to AstraZeneca under this Agreement or applicable law as a consequence of such breach – compensate AstraZeneca for any costs or expenses incurred by AstraZeneca or its Affiliates in connection with performing any of the activities contemplated by the applicable provisions in this Section 13.6.

13.7 Effect of Termination for Technical Product Failure. Upon termination of this Agreement pursuant to Section 13.3 for a Technical Product Failure, all licenses and rights to the FibroGen Technology granted to AstraZeneca under Article 7 shall terminate and, to the extent appropriate given the nature of the Technical Product Failure and subject to applicable law, including GCP, the other termination consequences set out in Sections 13.6(a) through 13.6(g) as well as Section 13.6(j) shall apply.

13.8 Other Remedies. Termination or expiration of this Agreement for any reason shall not release either Party from any liability or obligation that already has accrued prior to the effective date of such expiration or termination, nor affect the survival of any provision hereof to the extent it is expressly stated to survive such termination. Termination or expiration of this Agreement for any reason shall not constitute a waiver or release of, or otherwise be deemed to prejudice or adversely affect, any rights, remedies or claims, whether for damages or otherwise, that a Party may have hereunder or that may arise out of or in connection with such termination or expiration.

13.9 Bankruptcy.

(a) A Party shall have the right to terminate this Agreement in its entirety before the end of the Term upon the bankruptcy or insolvency of, or the filing of an action to commence insolvency proceedings against the other Party, or the making or seeking to make or arrange an assignment for the benefit of creditors of the other Party, or the initiation of proceedings in voluntary or involuntary bankruptcy, or the appointment of a receiver or trustee of such Party's property, in each case that is not discharged within sixty (60) days of the applicable filing, action or initiation of proceedings.

(b) All rights and licenses granted under or pursuant to this Agreement by FibroGen and AstraZeneca are, and shall otherwise be deemed to be, for purposes of Section 365(n) of the U.S. Bankruptcy Code, licenses of right to "intellectual property" as defined under Section 101 of the U.S. Bankruptcy Code. The Parties agree that each Party, as licensee of certain rights under this Agreement, shall retain and may fully exercise all of its rights and elections under the U.S. Bankruptcy Code. The Parties further agree that, in the event of the commencement of a bankruptcy proceeding by or against a Party (such Party, the "***Bankrupt Party***") under the U.S. Bankruptcy Code, the other Party shall be entitled to a complete duplicate of (or complete access to, as appropriate) any intellectual property licensed to such other Party and all embodiments of such intellectual property, which, if not already in such other Party's possession, shall be promptly delivered to it (i) upon any such commencement of a bankruptcy proceeding upon such other Party's written request therefor, unless the Bankrupt Party elects to continue to perform all of its obligations under this Agreement or (ii) if not delivered under clause (i), following the rejection of this Agreement by the Bankrupt Party upon written request therefor by the other Party.

13.10 Survival. Termination or expiration of this Agreement shall not affect rights or obligations of the Parties under this Agreement that have accrued prior to the date of termination or expiration of this Agreement. Notwithstanding anything to the contrary, the following provisions shall survive and apply after expiration or termination of this Agreement: Sections 3.10(b), 3.11, 4.4 (last sentence only), 7.8(a)-(c) (only as and to the extent set forth in Section 13.6(i)), 7.8(d), 7.9, 8.1, 8.9-8.15, 9.2, 10.5, 12.1 (provided that all Product Information will be FibroGen's Confidential Information upon termination (but not expiration) of this Agreement), 12.2, 12.3, 12.4, 13.6, 13.7, 13.8 and 13.10 and Articles 11, 14 and 15. In addition, the other applicable provisions of Article 8 shall survive to the extent required to make final reimbursements, reconciliations or other payments with respect to Net Sales and costs and expenses incurred or

accrued prior to the date of termination or expiration. For any surviving provisions requiring action or decision by a Committee or an Executive Officer, each Party will appoint representatives to act as its Committee members or Executive Officer, as applicable. All provisions not surviving in accordance with the foregoing shall terminate upon expiration or termination of this Agreement and be of no further force and effect.

ARTICLE 14

DISPUTE RESOLUTION AND GOVERNING LAW

14.1 Disputes. It is the objective of the Parties to establish procedures to facilitate the resolution of disputes arising under this Agreement in an expedient manner by mutual cooperation and without resort to litigation. In the event of any disputes, controversies or differences which may arise between the Parties out of or in relation to or in connection with this Agreement (including disputes arising from the JSC that are not resolved pursuant to Section 2.6), including, without limitation, any alleged failure to perform, or breach, of this Agreement, or any issue relating to the interpretation or application of this Agreement (each, a "***Dispute***"), then upon the request of either Party by written notice, the dispute will be referred to the Executive Officers of each Party, who shall meet and discuss in good faith a possible resolution thereof, which good faith efforts shall include at least one in-person meeting. If the matter is not resolved within thirty (30) days following the written request for discussions, either Party may then invoke the provisions of Section 14.2.

14.2 Arbitration. Any dispute, controversy, difference or claim which may arise between the Parties, out of or in relation to or in connection with this Agreement (including, without limitation, arising out of or relating to the validity, construction, interpretation, enforceability, breach, performance, application or termination of this Agreement) that is not resolved pursuant to Section 14.1, except for a dispute, claim or controversy under Section 14.7 or 14.8, shall be settled by binding arbitration administered by the American Arbitration Association (the "***AAA***") in accordance with its Commercial Arbitration Rules (or the AAA International Arbitration Rules, if recommended under the AAA guidelines), as such rules may be modified by this Section 14.2 or otherwise by subsequent written agreement of the Parties. The arbitration shall be governed by the U.S. Federal Arbitration Act, 9 U.S.C. §§ 1-16 (the "***Federal Arbitration Act***"), to the exclusion of any inconsistent state laws. The arbitration will be conducted in New York, New York. The number of arbitrators shall be three (3), of whom the Parties shall select one (1) each. The two arbitrators so selected will select the third and final arbitrator. If the arbitrators selected by the Parties are unable or fail to agree upon the third arbitrator, the AAA shall select the third arbitrator. The language to be used in the arbitral proceedings will be English. The Parties shall have the right to be represented by counsel. The arbitration proceeding shall be confidential. Except as required by applicable law, no Party shall make (or instruct the arbitrator to make) any public announcement with respect to the proceedings or decision of the arbitrator without prior written consent of the other Party. The existence of any dispute submitted to arbitration, and the award, shall be kept in confidence by the Parties and the arbitrator, except as required in connection with the enforcement of such award or as otherwise required by applicable law. Any judgment or award rendered by the arbitrators shall be final and binding on the Parties. The Parties agree that such judgment or award may be enforced in any court of competent jurisdiction.

[*] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed separately with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

14.3 Governing Law. Resolution of all Disputes and any remedies relating thereto shall be governed by and construed under the substantive laws of the State of California, excluding any conflicts or choice of law rule or principle that might otherwise refer construction or interpretation of this Agreement to the substantive law of another jurisdiction.

14.4 Decision. The arbitrators shall issue a reasoned opinion following a full comprehensive hearing, no later than twelve (12) months following the selection of the arbitrators.

14.5 Award. Any award shall be promptly paid in Dollars free of any tax, deduction or offset; and any costs, fees or taxes incident to enforcing the award shall, to the maximum extent permitted by law, be charged against the Party resisting enforcement. If as to any issue the arbitrators should determine under the applicable law that the position taken by a Party is frivolous or otherwise irresponsible or that any wrongdoing it finds is in callous disregard of law and equity or the rights of the other Party, the arbitrators shall also be entitled to award an appropriate allocation of the adversary's reasonable attorney fees, costs and expenses to be paid by the offending Party, the precise sums to be determined after a bill of attorney fees, expenses and costs consistent with such award has been presented following the award on the merits. Each Party agrees to abide by the award rendered in any arbitration conducted pursuant to this Article 14. The award shall include interest from the date of any damages incurred for breach of the Agreement, and from the date of the award until paid in full, at a rate fixed by the arbitrators. With respect to money damages, nothing contained herein shall be construed to permit the arbitrators or any court or any other forum to award punitive or exemplary damages. By entering into this agreement to arbitrate, the Parties expressly waive any claim for punitive or exemplary damages. The only damages recoverable under this Agreement are compensatory damages.

14.6 Injunctive Relief. Provided a Party has made a sufficient showing under the rules and standards set forth in the U.S. Federal Rules of Civil Procedure and applicable case law, the arbitrator shall have the freedom to invoke, and the Parties agree to abide by, injunctive measures after either Party submits in writing for arbitration claims requiring immediate relief. Nothing in this Article 14 will preclude either Party from seeking equitable relief or interim or provisional relief from a court of competent jurisdiction, including a temporary restraining order, preliminary injunction or other interim equitable relief, concerning a dispute either prior to or during any arbitration if necessary to protect the interests of such Party or to preserve the status quo pending the arbitration proceeding.

14.7 Patent and Trademark Disputes. Any dispute, controversy or claim relating to the scope, validity, enforceability or infringement of any patents or trademarks covering the manufacture, use, importation, offer for sale or sale of the Product shall be submitted to a court of competent jurisdiction in the country in which such patent or trademark rights were granted or arose.

14.8 Expedited Arbitration for Disputes Related to Technical Product Failure. Disputes with respect to a Technical Product Failure that are not resolved at the JSC or by the Executive Officers within twenty (20) Business Days after referral thereto, in the case of a Technical Product Failure as defined in Section 1.120(a), or resolved by the Parties, in the case of a Technical Product Failure as defined in Section 1.120(b), shall be finally determined as set forth in this Section 14.8. Within five (5) Business Days after the end of such twenty (20)-Business Day

period, each Party shall propose a list of three (3) individuals, each of whom has at least ten (10) years of significant relevant technical experience in the pharmaceutical industry, and none of whom is or has been affiliated with either Party or with either Party's Affiliates, licensees, sublicensees or business partners, or otherwise has any interest in the resolution of the issue to be submitted by the Parties for resolution (the foregoing requirements, the "***Requirements***"). Within five (5) Business Days after the Parties exchange such lists, the Parties shall either agree upon one of such proposed individuals to resolve the disputed matter, or if the Parties do not so select one such individual within such period of time, each Party shall select one (1) such individual from the list proposed by the other Party, and the two (2) selected individuals shall select a third individual who otherwise meets the Requirements to resolve the disputed matter (the selected individual, the "***Industry Expert***"). Each Party shall submit written materials to the other Party and to the Industry Expert relating to the matters in issue within five (5) Business Days after the Industry Expert is selected. Each Party shall then have five (5) Business Days to submit a written rebuttal to the other Party's submission to the other Party and to the Industry Expert. The Industry Expert shall have the discretion to interview the Parties' officers and employees to obtain further information relating to the matters in issue and to hear oral argument. Each Party shall cooperate with the Industry Expert. The Industry Expert's determination shall be binding as to whether a Technical Product Failure has occurred, and such determination shall be given retroactive effect. Until such determination is delivered to the Parties, the Parties shall continue to perform their obligations under this Agreement in good faith and make any applicable payments accordingly. If the Industry Expert decides in AstraZeneca's favor, then the Parties shall bear all expenses incurred pursuant to this Section 14.8 equally, and if the Industry Expert decides in FibroGen's favor, then AstraZeneca shall bear all expenses incurred pursuant to this Section 14.8, including reasonable reimbursement of FibroGen's expenses for internal personnel and external advisors.

ARTICLE 15

MISCELLANEOUS

15.1 Entire Agreement; Amendment. This Agreement, including the Exhibits hereto, sets forth the complete, final and exclusive agreement and all the covenants, promises, agreements, warranties, representations, conditions and understandings between the Parties hereto with respect to the subject matter hereof and supersedes, as of the Effective Date, all prior agreements and understandings between the Parties with respect to the subject matter hereof, including, without limitation, the Existing Confidentiality Agreement. The foregoing shall not be interpreted as a waiver of any remedies available to either Party as a result of any breach, prior to the Effective Date, by the other Party of its obligations pursuant to the Existing Confidentiality Agreement. In the event of any inconsistency between any plan hereunder (including the Development Plan and/or U.S. Commercialization Plan) and this Agreement or between the terms of this Agreement and the China Agreement (but solely with respect to the U.S. and RoW), the terms of this Agreement shall prevail. There are no covenants, promises, agreements, warranties, representations, conditions or understandings, either oral or written, between the Parties other than as are set forth herein and therein. No subsequent alteration, amendment, change or addition to this Agreement shall be binding upon the Parties unless reduced to writing and signed by an authorized officer of each Party.

[*] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed separately with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

15.2 Force Majeure. Both Parties shall be excused from the performance of their obligations under this Agreement to the extent that such performance is prevented or delayed by force majeure and the nonperforming Party promptly provides notice of the prevention to the other Party. Such excuse shall be continued so long as the condition constituting force majeure continues and the nonperforming Party takes reasonable efforts to remove the condition. For purposes of this Agreement, force majeure shall mean conditions beyond the control of the Parties, including without limitation, an act of God, war, civil commotion, terrorist act, labor strike or lock-out, epidemic, failure or default of public utilities or common carriers, destruction of production facilities or materials by fire, earthquake, storm or like catastrophe, and failure of plant or machinery (provided that such failure could not have been prevented by the exercise of skill, diligence, and prudence that would be reasonably and ordinarily expected from a skilled and experienced person engaged in the same type of undertaking under the same or similar circumstances). The non-performing Party shall within thirty (30) days after a force majeure provide the other Party a good faith estimate of the anticipated duration and any action being taken to avoid or minimize its effect. The suspension of performance shall be of no greater scope and no longer duration than is reasonably necessary and the non-performing Party shall use Commercially Reasonable Efforts to remedy its inability to perform. Notwithstanding the foregoing, a Party shall not be excused from making payments owed hereunder because of a force majeure affecting such Party.

15.3 Notices. Any notice required or permitted to be given under this Agreement shall be in writing, shall specifically refer to this Agreement, and shall be addressed to the appropriate Party at the address specified below or such other address as may be specified by such Party in writing in accordance with this Section 15.3, and shall be deemed to have been given for all purposes (a) when received, if hand-delivered or sent by a reputable international expedited delivery service, or (b) five (5) Business Days after mailing, if mailed by first class certified or registered mail, postage prepaid, return receipt requested.

If to FibroGen:	FibroGen, Inc. 409 Illinois St. San Francisco, CA 94158 USA Attention: Chief Executive Officer
With a copy to:	FibroGen, Inc. 409 Illinois St. San Francisco, CA 94158 USA Attn: Michael Lowenstein, Vice President, Legal

If to AstraZeneca: AstraZeneca AB
Pepparedsleden 1, 431 83 Mölndal
Gothenburg
Sweden
Attention: Chief Financial Officer

With a copy to: AstraZeneca UK Limited
Alderley Park
Macclesfield
Cheshire SK10 4TF
Attention: Liam McIlveen, Deputy General Counsel

15.4 No Strict Construction; Headings. Each of the Parties acknowledges and agrees that this Agreement has been diligently reviewed by and negotiated by and between them, that in such negotiations each of them has been represented by competent counsel and that the final agreement contained herein, including the language whereby it has been expressed, represents the joint efforts of the Parties hereto and their counsel. Accordingly, in the event an ambiguity or a question of intent or interpretation arises, this Agreement will be construed as if drafted jointly by the Parties and no presumption or burden of proof will arise favoring or disfavoring any Party by virtue of the authorship of any provisions of this Agreement. The headings of each Article and Section in this Agreement have been inserted for convenience of reference only and are not intended to limit or expand on the meaning of the language contained in the particular Article or Section.

15.5 Assignment. Neither Party may assign or transfer this Agreement (either in whole or part) or any rights or obligations hereunder without the prior written consent of the other, except that a Party may make such an assignment or transfer without the other Party's consent to Affiliates or to a successor to substantially all of the business of such Party, whether in a merger, sale of stock, sale of assets or other transaction. Any permitted successor or assignee of rights and/or obligations hereunder shall, in a writing to the other Party, expressly assume performance of such rights and/or obligations (and in any event, any Party assigning this Agreement to an Affiliate shall remain bound by the terms and conditions hereof). In the event that a Party is acquired by a Third Party (such Third Party, hereinafter referred to as an "***Acquiror***"), then the intellectual property of such Acquiror held or developed by such Acquiror (whether prior to or after such acquisition) shall be excluded from the FibroGen Technology (in the case when the acquired Party is FibroGen) and AstraZeneca Technology (in the case when the acquired Party is AstraZeneca), and such Acquiror (and Affiliates of such Acquiror which are not controlled by the acquired Party itself) shall be excluded from "Affiliate" solely for purposes of the applicable components of the foregoing intellectual property definitions, in all such cases if and only if: (a) the acquired Party remains a wholly-owned subsidiary of the Acquiror; (b) all intellectual property of the acquired Party and all research and development assets and operations of the acquired Party with respect to the Product remain with the acquired Party and are not transferred to the Acquiror or another Affiliate of the Acquiror; (c) the scientific and development activities with respect to Product of the acquired Party and the Acquiror (if any) are maintained separate and distinct, and (d) there is no exchange of confidential Information relating to this Collaboration between the acquired Party and the Acquiror. For clarity, in the event that a Party is acquired by an Acquiror and any of the criteria described in subsections (a) through (d) is not satisfied, then the intellectual

property of such Acquiror shall be included within FibroGen Technology (in the case when the acquired Party is FibroGen) and AstraZeneca Technology (in the case when the acquired Party is AstraZeneca). Any permitted assignment of the rights and obligations of a Party under this Agreement shall be binding on the successors of the assigning Party. Any assignment or attempted assignment by either Party in violation of the terms of this Section 15.5 shall be null, void and of no legal effect.

15.6 Performance by Affiliates. Subject to the limitations of Section 7.3, each Party may discharge any obligations and exercise any right hereunder through any of its Affiliates. Each Party hereby guarantees the performance by its Affiliates of such Party's obligations under this Agreement, and shall cause its Affiliates to comply with the provisions of this Agreement in connection with such performance. Any breach by a Party's Affiliate of any of such Party's obligations under this Agreement shall be deemed a breach by such Party, and the other Party may proceed directly against such Party without any obligation to first proceed against such Party's Affiliate.

15.7 Further Actions. Each Party agrees to execute, acknowledge and deliver such further instruments, and to do all such other acts, as may be necessary or appropriate in order to carry out the purposes and intent of this Agreement.

15.8 Compliance with Applicable Law. Each Party shall comply with all applicable laws and regulations in the course of performing its obligations or exercising its rights pursuant to this Agreement.

15.9 Limitation of Liability. NEITHER PARTY SHALL BE LIABLE TO THE OTHER FOR ANY SPECIAL, CONSEQUENTIAL, INCIDENTAL, PUNITIVE, OR INDIRECT DAMAGES ARISING FROM OR RELATING TO ANY BREACH OF THIS AGREEMENT OR ANY TORT CLAIMS ARISING HEREUNDER, REGARDLESS OF ANY NOTICE OF THE POSSIBILITY OF SUCH DAMAGES. NOTWITHSTANDING THE FOREGOING, NOTHING IN THIS SECTION 15.9 IS INTENDED TO OR SHALL LIMIT OR RESTRICT THE INDEMNIFICATION RIGHTS OR OBLIGATIONS OF ANY PARTY UNDER SECTION 11.1, 11.2 OR 11.3, OR DAMAGES AVAILABLE FOR A PARTY'S BREACH OF ITS CONFIDENTIALITY OBLIGATIONS UNDER ARTICLE 12.

15.10 Severability. To the fullest extent permitted by applicable law, each Party hereby waives any provision of law that would render any provision hereof illegal, invalid or unenforceable in any respect. If any one or more of the provisions of this Agreement is held to be invalid or unenforceable by an arbitrator or by any court of competent jurisdiction from which no appeal can be or is taken (within the time period prescribed for appeal), the provision shall be considered severed from this Agreement and shall not serve to invalidate any remaining provisions hereof. The Parties shall make a good faith effort to replace any invalid or unenforceable provision with a valid and enforceable one that achieves, as nearly as possible, the objectives contemplated by the Parties when entering this Agreement.

15.11 No Waiver. Any delay in enforcing a Party's rights under this Agreement or any waiver as to a particular default or other matter shall not constitute a waiver of such Party's rights to the future enforcement of its rights under this Agreement, except with respect to an express written and signed waiver relating to a particular matter for a particular period of time.

15.12 Independent Contractors. It is expressly agreed that FibroGen, on the one hand, and AstraZeneca, on the other hand, shall be independent contractors and that the relationship between the two Parties shall not constitute a partnership, joint venture or agency. Neither FibroGen, on the one hand, nor AstraZeneca, on the other hand, shall have the authority to make any statements, representations or commitments of any kind, or to take any action that will be binding on the other, without the prior written consent of the other Party to do so. All persons employed by a Party shall be employees of such Party and not of the other Party and all costs and obligations incurred by reason of any such employment shall be for the account and expense of such first Party.

15.13 English Language. This Agreement shall be written and executed in and all other communications under or in connection with this Agreement shall be in, the English language. Any translation into any other language shall not be an official version thereof and in the event of any conflict in interpretation between the English version and such translation, the English version shall control.

15.14 Counterparts. This Agreement may be executed in one (1) or more counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument.

[Signature Page Follows]

[*] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed separately with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

IN WITNESS WHEREOF, the Parties have executed this Agreement in duplicate originals by their duly authorized officers as of the Execution Date.

FIBROGEN, INC.	**ASTRAZENECA AB**
By: Thomas B. Neff	By: /s/ Elisabeth Björk
Name: /s/ Thomas B. Neff	Name: Elisabeth Björk
Title: CEO	Title: VP, GMed Head, CVMD

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EXHIBITS

Exhibit A – Territory – Excluded Countries

Exhibit B – DFCI Agreement

Exhibit C – Chemical Structure of FG-4592

Exhibit D – Field Indications

Exhibit E – Listed Patents

Exhibit F – AstraZeneca's Anti-Corruption Rules and Policies

Exhibit G – Initial Members of the JSC

Exhibit G(a) – JDC Responsibilities Delegated by the JSC to the Core JPT

Exhibit G(b) – JCC Responsibilities Delegated by the JSC to the Core JPT

Exhibit H – Initial Development Plan

Exhibit I – U.S. Co-Commercialization Terms

Exhibit J – Development Supply Terms

Exhibit K – Commercial Supply Terms

Exhibit L – Invoicing Requirements

Exhibit M – Patents that May be Extended

Exhibit N – Joint Press Release

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Exhibit A

Excluded Countries

— Albania
— Andorra
— Armenia
— Austria
— Azerbaijan
— Belarus
— Belgium
— Bosnia & Herzegovina
— Bulgaria
— Croatia
— Cyprus
— Czech Republic
— Denmark
— Estonia
— Finland
— France
— Georgia
— Germany
— Greece
— Hungary
— Iceland
— Ireland
— Italy
— Japan
— Kazakhstan
— Kyrgyzstan
— Latvia
— Liechtenstein
— Lithuania
— Luxembourg
— Macedonia
— Malta
— Moldova
— Monaco
— Netherlands
— Norway
— Poland
— Portugal
— Romania
— Russia
— San Marino
— Serbia and Montenegro (Yugoslavia)
— Slovakia
— Slovenia
— Spain
— Sweden
— Switzerland
— Tajikistan
— Turkey
— Turkmenistan
— Ukraine
— United Kingdom
— Uzbekistan
— Vatican City
— Bahrain
— Egypt
— Iran
— Iraq
— Israel
— Jordan
— Kuwait
— Lebanon
— Oman
— Qatar
— Saudi Arabia
— Syria
— United Arab Emirates
— Yemen
— South Africa

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Exhibit B

DFCI Agreement

This Exhibit B is filed as Exhibit 10.24 to the Registration Statement on Form S-1 (Commission File No. 333-199069).

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Exhibit C

Chemical Structure of FG-4592

**[***]

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Exhibit D

Field Indications

[*]

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Exhibit E

Listed Patents

DOCKET NO.	TERRITORY	STATUS	APPLICATION NO.	FILING DATE	PATENT NO.	GRANT DATE

[*]

[*] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed separately with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

Exhibit F

AstraZeneca's Anti-Corruption Rules and Policies

ASTRAZENECA GLOBAL POLICY
ETHICAL INTERACTIONS
ANTI-BRIBERY & ANTI-CORRUPTION
EXTERNAL INTERACTIONS

This Global Policy describes what is required to meet our commitment to operate ethically and with integrity in our business and personal interactions and activities.

This Policy applies to all Employees.

The Company is committed to acting responsibly and in compliance with the requirements of the UK Bribery Act, Foreign Corrupt Practices Act and other relevant laws, regulations and adopted industry codes

CONTENTS

1. SCOPE, APPLICATION & INTERPRETATION

1.1 This Policy applies to all Employees and represents the minimum requirements that the Company has set for Interactions.

An alphabetised Glossary containing definitions for all capitalised terms used in this Policy is included at the end of this Policy.

For certain Interactions, You must refer to more than one Section of this Policy. The relevant Sections are cross-referenced as appropriate.

Other Global Policies may also apply to Interactions. For example, the *Global Data Privacy Policy* applies to Interactions where there is a need to protect the confidentiality of Patient information.

Global Standards may also apply to Interactions. The Global Standards give additional information about what is required to ensure compliance for particular Interactions. The requirements of this Policy and of the supporting Global Standards must be considered as a whole to evaluate and support compliant Interactions. Global Standards are cross-referenced in each relevant section of this Policy.

1.2 This Policy expands on the Company's *Code of Conduct*, and aligns with (and in some cases exceeds) the requirements of applicable law and adopted industry codes.

You must follow the spirit of this Policy and not just its letter. The absence of a specific requirement relating to a particular Interaction does not mean that the Interaction is necessarily permitted; You must avoid any Interaction that breaches the Company's *Code of Conduct* or supporting Global Policies, Global Standards or Relevant Procedures.

1.3 Employees must not attempt to avoid the requirements of this Policy by requesting, allowing or enabling Third Parties (including relatives, friends or other associates) to be involved in the Interactions prohibited by this Policy on the Employee's (or the Company's) behalf.

In some cases, local law, adopted industry codes particular to a jurisdiction, or rules particular to a Business Unit (e.g., Senior Executive Team ("SET") function), may apply to Interactions, and may be more restrictive than this Policy. Where that is the case, You must follow the more restrictive rules set out in Relevant Procedures. For example, local marketing organisations must establish Relevant Procedures with respect to Interactions with Public Officials, where local law is more restrictive than this Policy.

To the extent appropriate, Business Units must establish Relevant Procedures to assure compliance with the requirements of this Policy and supporting Global Standards, including requirements for sufficient monitoring and/or audit. Employees must use reasonable judgement to create business records sufficient to demonstrate compliance with the requirements of this Policy, supporting Global Standards and these Relevant Procedures (e.g., business records of required approvals and required rationales for approvals).

For purposes of this Policy, required approvals must be obtained in advance of any Interaction.

Where the scope or interpretation of a particular provision of this Policy, supporting Global Standards or Relevant Procedures is unclear, You should seek guidance from Your line manager or Your relevant Legal and/or Compliance partner.

2. ANTI-BRIBERY & ANTI-CORRUPTION

2.1 AstraZeneca has zero tolerance for Bribery or corruption (i.e., improper influence).

The Company will support Employees and Third Parties who refuse requests to Give or Receive Bribes on the Company's behalf. Employees and Third Parties will not be subject to retaliation or other adverse consequences for such refusal, even if the Company loses business as a result.

See Section 7 for prohibitions and other requirements regarding Facilitation Payments, including payments Given under duress.

2.2 You may Give or Receive something of value in compliance with the requirements and limits of this Policy, supporting Global Standards and Relevant Procedures.

For purposes of this Policy, supporting Global Standards and Relevant Procedures, "something of value" means any financial or non-financial benefit of any kind, including, but not limited to:

a) the Giving and Receiving of Items of Value and Hospitality (See Section 3 and the *Global Standard on Items of Value and Hospitality*);

b) prices, discounts and rebates for Company Products Given to Third Parties (See Section 4);

c) Contributions Given to Third Parties (See Section 5 and the *Global Standard on Contributions*);

d) Political Support Given to Public Officials or Political Organisations and participation in Political Activities (See Section 6);

e) payments Given to Public Officials and Public Sector Organisations (See Section 7);

f) appointments, paid and volunteer work outside of the Company or other interests associated with actual, apparent or potential Conflicts of Interest (See Section 8);

g) the venue, conduct or other arrangements made for Meetings, as well as the selection and/or support of External Stakeholders to attend Meetings or independent congresses, including professional education credits and capability-building sessions (See Section 9 and the *Global Standard on Meetings*);

h) the engagement of Third Parties to provide Services, including compensation and expense reimbursement (See Section 10 and the *Global Standard on Engaging Third Parties*); and

i) support for External Stakeholders for Non-Interventional Studies and Investigator Sponsored Studies (See Sections 13 and 14).

2.3 You must not Give or Receive something of value that is intended or could be seen as improper influence.

If you are in doubt about any Interaction, you must consult with your line manager or your relevant Legal and/or Compliance partner for appropriate guidance.

2.4 All monetary payments by the Company to Third Parties that are permitted by this Policy must be made via an approved Company financial payment system by bank transfer, cheque or company credit card, must not take the form of cash or cash equivalent (e.g., debit cards, gift cards, gift certificates), and must be accurately and appropriately recorded in the Company's books and records.

All such payments may also be made via a specifically authorised Third Party (unless otherwise noted in this Policy or supporting Global Standards), when genuine business needs require, and Relevant Procedures (with adequate controls) support such an arrangement. In such cases, the Third Party must be contractually obligated to accurately document, track and report to the Company the amounts paid on its behalf, as required by the Relevant Procedures.

This Section 2.4 prohibits cash and cash equivalent payments by Employees (or Third Parties acting on the Company's behalf), except as specifically permitted by Relevant Procedures established or approved by the Global Finance function. Also, see paragraph 1.18 of the *Global Standard on Items of Value and Hospitality* for requirements regarding exceptional Cultural Courtesy Gifts in the form of cash or cash equivalent.

2.5 You must not Give a Bribe.

Give means to directly or indirectly offer, promise or give, or to authorise such actions.

You must not Give something of value to any Third Party or any fellow Employee that is intended or could be seen to:

a) influence or reward an official action or decision (e.g., by a Public Official);

b) enable or induce a Third Party or fellow Employee to perform their function improperly, or make any decision or take any action favourable to the interests of the Company (or You) on an improper basis, or reward them for doing so;

c) provide incentive or reward to a Third Party for past, present or future willingness to prescribe, administer, recommend, purchase, pay for, reimburse, authorise, approve, supply or use any Company Product or service; or
d) obtain or retain improper business, or secure any improper professional or personal advantage.

2.6 You must not Receive a Bribe.

Receive means to directly or indirectly solicit, agree to receive or accept, or to authorise such actions. You must not Receive something of value from any Third Party or any fellow Employee that is intended or could be seen to:

a) compromise Your independence or judgement;

b) enable or induce You to perform Your function improperly, or make any decision or take any action favourable to the interests of the Third Party (or fellow Employee) on an improper basis, or reward You for doing so; or

c) obtain or retain improper business, or secure any improper professional or personal advantage.

3. ITEMS OF VALUE & HOSPITALITY

3.1 You must not Give or Receive Items of Value or Hospitality that are intended or could be seen as improper influence.

To the extent appropriate, Business Units must establish Relevant Procedures on actual or perceived value and frequency when Giving and Receiving Items of Value and Hospitality. These Relevant Procedures must include specific limits on value (modest) and frequency (occasional) and definitions for “modest” and “occasional,” to guide Employees on appropriate value and frequency levels that would not create actual or perceived improper influence, taking into account local custom and practice (See paragraph 2.1 of the *Global Standard on Meetings*).

To the extent appropriate, Business Units must establish Relevant Procedures to enable the Company to satisfy transparency obligations, with respect to the Giving of Items of Value and Hospitality to External Stakeholders.

Items of Value and Hospitality that exceed Company limits, either separately or in total, to or from the same individual or organisation, are prohibited.

Any Giving or Receiving of Items of Value or Hospitality that is based upon a genuine personal relationship independent of the Company and that is personally funded by the individuals involved (without Company reimbursement) is permissible and is not restricted by this Policy**,** if it is not intended and could not be seen as improper influence.

3.2 See Section 2 of this Policy and the *Global Standard on Items of Value and Hospitality* for further requirements on Items of Value and Hospitality.

4. PRICING, DISCOUNTS & REBATES

4.1 To the extent appropriate, Business Units must have an approved pricing model in place, based on objective criteria, to govern the pricing, rebates and discounts (and other commercial advantages or favourable terms) that can be Given to Third Parties.

The pricing model must be reviewed on a regular basis by the head of the relevant Business Unit or designee to ensure appropriateness and transparency.

These Business Units must document the purpose of any prices, rebates or discounts (or other commercial advantages or favourable terms) Given to Third Parties that fall outside the approved pricing model, and this documented purpose must be approved by the head of the relevant Business Unit or designee to ensure appropriateness and transparency.

4.2 See Section 2 of this Policy for further requirements on prices, discounts and rebates.

5. CONTRIBUTIONS (DONATIONS, SPONSORSHIPS & PARTNERSHIPS)

5.1 The Company is committed to making a positive impact on Our local communities and supporting the work of others in the healthcare and scientific arenas.

Contributions may be classified as Donations, Sponsorships or Partnerships, and may take the form of financial or non-financial support (e.g., funds or in-kind assistance, such as resources, facilities or employee time).

Contributions may generally only be Given for legitimate scientific, educational and/or charitable purposes to support the following: health or healthcare, medical or scientific education, advances in medical or scientific research and disaster relief. Contributions may also be Given for other purposes on an exceptional basis, only with senior management approval, as set out in Relevant Procedures.

For the avoidance of doubt, this Section does not prohibit individual Employees from supporting charities and other organisations in a purely personal capacity and without any involvement of the Company, if the support meets the requirements of Section 8 of this Policy. This Section 5 also does not prohibit Employees from organising charitable efforts on the Company premises (such as a local food drive or book drive), with line manager approval, where Employees use only their personal funds and resources to participate, if the support meets the requirements of Section 8 of this Policy.

Generally, Contributions to support a Meeting or other event must only be Given where the venue and location of the supported event are appropriate and conducive to the intended purpose, and where any Meals or other Hospitality provided by the Company or by the recipient of the Contribution are modest and incidental to the purpose of the event. See the *Global Standard on Contributions,* the *Global Standard on Items of Value and Hospitality* and the *Global Standard on Meetings* for specific requirements and exceptions.

Certain charitable Donations, Sponsorships and Partnerships that meet the relevant criteria described in the *Global Standard on Contributions* and the *Global Procedure and Guidance Community Investment* specifically qualify as Community Investment Contributions.

5.2 Contributions may only be given to reputable, recognised and independent institutions or other legitimate, established organisations, and only for legitimate purposes.

The relevant Business Unit managing the Contribution must conduct appropriate due diligence on the proposed recipient of any Contribution to establish that the proposed recipient satisfies the requirements of this Section 5.2 and to establish that Contribution will be well used. In addition, the relevant Business Unit may agree upfront with the recipient organisation to conduct appropriate post-funding review (e.g., review of a summary of the completed projects or other results of the

In addition to the requirements of Section 2, a Contribution must not be Given for any other improper purpose or use, including, but not limited to, the following:

a) to help offset an External Stakeholder's cost of purchasing or reimbursing Company Products or to influence any other decisions about listing, purchasing or reimbursing of Company Products;

b) to organisations or activities that are known to discriminate on any unlawful basis;

c) to support programming or editorial content containing gratuitous violence or sexually explicit material or any activity that does not reflect the values and/or mission of the Company, or could cause embarrassment to the Company; or d) to support any activities prohibited by Relevant Procedures.

Contributions that might be considered as excessive or inappropriate in scale and/or affiliation are not permitted.

Contributions must not be Given to avoid the restrictions on Giving Items of Value and Hospitality to Third Parties (See Section 3 and the *Global Standard on Items of Value and Hospitality*).

5.3 Contributions must not be Given to any organisation for the personal benefit of any individual or Healthcare Professional ("HCP") practice (i.e., a group of HCPs sharing premises or other resources) selected by the Company, or to disguise or conceal any such personal benefit (except as permitted in paragraph 4.5 of the *Global Standard on Contributions* regarding Fellowships and Preceptorships for scientists to support research activities).

Contributions must not be Given by the Company directly to an individual or HCP practice.

For the avoidance of doubt, direct Company support for individual External Stakeholders to attend Meetings or independent congresses is not considered to be a Contribution for purposes of this Policy and is permissible only in limited circumstances (See section 3 of the *Global Standard on Meetings*).

For the avoidance of doubt, awards to individuals are not considered Contributions. See the *Global Standard on Items of Value and Hospitality* for requirements regarding awards and awards ceremonies.

An individual who formally represents an organisation may request a Contribution from the Company on behalf of the organisation, and such request must be considered and processed as required by Relevant Procedures. Contributions must not be Given to an organisation at the request of any other individual (e.g., to a Public Official's preferred charity), except for Sympathy Gifts Given to a designated non-profit organisation as a memorial in the event of a death, or Contributions Given at the request of an Employee as part of a Company matching fund programme.

Contributions must not be Given to financially benefit HCPs or HCP practices by replacing any assets or funding any activities that they would be expected or required to provide themselves to fulfil obligations they have under local law, contract or customary business practice. For example, Contributions must not be Given to improve business efficiencies or administrative processes of an HCP or HCP practice, such as support for billing or taxes. For the avoidance of doubt, Contributions to support HCP education are permissible, in the interest of improving Patient care and/or Patient health.

5.4 See Section 2 of this Policy and the *Global Standard on Contributions* for further requirements on Contributions.

Contributions must not be Given by Third Parties on behalf of the Company, except for Company Product Donations (See the *Global Procedure and Guidance Community Investment* and the *Global Guidance for Product Donations*).

For the avoidance of doubt, Contributions do not include Political Support or participation in Political

6. POLITICAL SUPPORT & POLITICAL ACTIVITIES

6.1 Employees must not Give Political Support on behalf of the Company unless specifically authorised to do so by the Government Affairs function or the Reviewer.

Third Parties must not Give Political Support on behalf of the Company under any circumstance. The Company will not reimburse in any way or form any Third Party or non-authorised Employee for Giving Political Support.

Political Support may only be Given where it is expressly permitted by local law and where acceptable as part of local custom and practice.

All Political Support must be Given directly to the recipient organisation or individual. The name of the organisation or individual, purpose, nature and value of the Political Support and the date of the Political Support must be properly documented and recorded in the Company's books and records, to enable public disclosure.

The Government Affairs function will establish or approve Applicable Internal Review Procedures for the Giving of Political Support.

6.2 Employees and Third Parties must not participate in Political Activities on behalf of the Company unless specifically authorised to do so by the Government Affairs function or the Reviewer.

The Government Affairs function will establish or approve Applicable Internal Review Procedures for participation in Political Activities.

6.3 The Company recognises the rights of Employees to use their own funds, time and other personal resources to Give Political Support or to participate in Political Activities.

You must ensure that you do not act or appear to act as a representative of the Company when participating in Political Activities or Giving Political Support in a personal capacity. You must make it clear that your views and actions are Your own, and that any Political Support You provide is Given on a personal basis, using Your own funds, time or other personal resources.

6.4 See Section 2 of this Policy for further requirements on Political Support and Political Activities.

7. PAYMENTS TO PUBLIC OFFICIALS & PUBLIC SECTOR ORGANISATIONS

7.1 The Company does not permit Employees or Third Parties providing Services to Give Facilitation Payments, either directly or indirectly, to Public Officials (including HCPs and other individuals employed by Public Sector Organisations), regardless of whether such payments are nominal in amount.

Employees and Third Parties must not attempt to conceal or disguise Facilitation Payments to avoid the requirements of this Section.

The nature of the Company's business involves legitimate Interactions with a range of Public Officials. Examples include Public Officials responsible for issuing Company Product licences, making Company Product listing decisions, determining Company Product pricing and payment, providing permits and regulatory Authorisations and conducting facility inspections.

You may Give payments to individual Public Officials where they are engaged to provide legitimate Services (See Section 10). You must not Give any other payments to individual Public Officials unless such payments are required or otherwise expressly permitted by local law and not otherwise prohibited by this Policy.

You may Give legitimate and lawful payments to Public Sector Organisations with respect to taxes, permits, licences, inspections and other fees required or otherwise expressly permitted by local law and not otherwise prohibited by this Policy. Official government receipts must be obtained to support all such payments.

7.2 The Company recognises that, in exceptional circumstances, payments may be demanded under duress from Employees or Third Parties providing Services. It is permissible for Employees and Third Parties to Give payments demanded under duress, where there is reasonable fear for personal safety.

Duress describes situations of actual or threatened violence or imprisonment to force a person to act against their will. The Company is committed to ensuring the safety of its Employees and Third Parties and does not expect them to compromise their safety in such situations.

Employees and Third Parties must promptly report in writing to their line manager all incidents where:

a) Facilitation Payments are requested but not paid; or

b) payments are demanded under duress, whether paid or not.

The line manager must then promptly inform the relevant Legal partner of such incidents in writing and ensure that any payments actually made are properly documented and recorded in the Company's books and records. The line manager must also consult with the relevant Legal partner regarding the reporting of such incidents to the relevant authorities and the steps to be taken to prevent recurrence.

7.3 See Section 2 of this Policy for further requirements on payments to Public Officials and Public Sector Organisations.

8. AVOIDING CONFLICTS OF INTEREST

8.1 You must ensure that Your interests, activities and associations outside of the Company do not result in actual, apparent or potential Conflicts of Interest with Your professional duties and decisions as an Employee, by directly or indirectly compromising Your independence or professional judgement, or creating an appearance of doing so.

You must not allow, or appear to allow, a personal relationship to influence Your decision-making or judgement. You must ensure that the Company's interests are paramount when business opportunities are assessed and commercial decisions are taken.

You may make personal financial investments, pursue other business interests and maintain social relationships with people You meet through Your Employment, if all of the relevant requirements of this Section of the Policy are met. You must ensure that these Interactions do not result in actual, apparent or potential Conflicts of Interest with the Company's business activities.

You must not use Company resources or your position as an Employee for Your own personal benefit or for the benefit of Your relatives, friends or other associates.

8.2 You must inform Your line manager in writing of any actual, apparent or potential Conflicts of Interest at the time they become known. Engagement Owners must also inform their line managers in writing of any actual, apparent or potential Conflicts of Interest of a Third Party providing Services, at the time they become known.

Line managers must provide written direction on how to resolve or avoid the Conflict of Interest after obtaining any necessary advice from the relevant Legal and/or Compliance partner.

If You, a relative or close friend has a financial or management interest in a Third Party (other than a nominal shareholding interest through a publicly-available investment), You must disclose the situation as a potential Conflict of Interest to Your line manager. You must not participate in any purchasing or other Company decisions related to that Third Party.

8.3 You must not do any volunteer or paid work outside of the Company related to Your Company work responsibilities or work product (e.g., speaking engagement, authoring or publishing) unless You obtain written approval from Your line manager, on the basis that such work is unlikely to create an actual, apparent or potential Conflict of Interest and on the basis that any payment is not intended and could not be seen as improper influence.

For all such work, You may Receive necessary and modest travel, accommodation, Meals and other directly related, incidental expenses, with written line manager approval, on the basis that such expenses are not intended and could not be seen as improper influence.

8.4 You must not accept any appointment to the Board of Directors of an external organisation in the healthcare or scientific arena, unless You obtain written approval from Your line manager.
Approval should not normally be provided for directorships of Third Parties who are conducting, or may conduct, business directly within Your scope of responsibility or where You will gain a financial benefit that could be open to question or misinterpretation if publicly disclosed.

8.5 You must not use non-public Company information for personal gain.
You must not pass such information to anyone else (either inside or outside the Company), who does not have a legitimate need for the information.

8.6 See Section 2 of this Policy for further requirements on Conflicts of Interest.

9. MEETINGS

9.1 Organising or supporting Meetings with External Stakeholders is part of Our business. Where doing so, You must follow the requirements listed in the Global Standard on Meetings.

The location, venue, conduct and other arrangements made for Meetings must be modest, conducive and appropriate to the purpose of the Meeting.

9.2 Meetings must always have a scientific, medical education and/or other legitimate business purpose, which must be clearly stated.

The Company may Give a Contribution (See Section 5) to a Meeting organiser to support the conduct of a Meeting (e.g., a Sponsorship). Any such Contribution must meet the relevant requirements of both the *Global Standard on Contributions* and the *Global Standard on Meetings*, with respect to the substance of the Meeting as well as the conduct and arrangements made for the Meeting.

9.3 See Section 2 of the Policy and the *Global Standard on Meetings* for further requirements on Meetings.

The *Global Standard on Meetings* also includes specific requirements on Company support for External Stakeholders to attend independent congresses.

10. ENGAGING THIRD PARTIES & ENSURING COMPLIANCE

10.1 The Company is committed to engaging only those Third Parties who embrace standards of ethical behavior that are consistent with Our own.

Engagement Owners are accountable for ensuring that the Third Party's reputation and conduct are consistent with the Company's ethical standards (See Section 10.5).

For the avoidance of doubt, engagements do not include informal, routine business Interactions between Employees and Third Parties, where no Services are provided and no payment is Given (e.g., informal discussions at professional Meetings or independent congresses for scientific exchange, or routine phone calls in the normal course of business).

10.2 Engagement Owners must engage a Third Party only where there is a genuine business need for Third Party Services and must only engage the necessary and appropriate Third Parties to provide those Services.

Engagement Owners must ensure that the selected Third Party has the relevant qualifications, expertise, reputation, knowledge, experience and ability to fulfill the genuine business need, and is the most appropriate choice to provide the Services.

External Stakeholders may be engaged by the Company (either directly or through a specifically authorised Third Party on the Company's behalf) to provide Services. Such Services include, but are not limited to: providing input and information as an Advisor or consultant, speaking at Meetings (e.g., a Promotional Speaker), acting as a clinical investigator or a study site, or educating or otherwise presenting to Representatives at Representative training or business cycle sessions. Patients and Other Third Parties may also be engaged by the Company to provide Services.

Each engagement with an External Stakeholder or Patient for Services must be documented in a signed contract. If the External Stakeholder or Patient is not accepting compensation, or payment or reimbursement of expenses, the requirement for a signed contract may be waived with documented line manager approval.

Each engagement with Other Third Parties for Services must be documented in the format required for the particular Services to be provided, such as a contract, Terms & Conditions, a Purchase Order or other required documentation of offer and acceptance of Services.

Third Parties must not provide any Service on behalf of the Company, in connection with the execution of an engagement or otherwise, unless the Service has been specifically authorised in the signed contract (or other required documentation of the engagement) between the Company and the Third Party, or has otherwise received appropriate documented approval.

You must not Give any Payments for Voluntary or Incidental Activities to any Third Party.

10.3 Our Interactions and engagements with External Stakeholders and Patients must at all times be professional exchanges, designed to enhance the practice of medicine, to benefit Patients, or to fulfill a genuine business need.

In no circumstances may the engagement of an External Stakeholder or Patient be used as a means to gain access or to disguise Promotional Activities, or create an appearance of doing so.

10.4 To the extent appropriate, Business Units must establish adequate Relevant Procedures to mitigate the risk of actual or apparent improper influence over individual External Stakeholders engaged to provide Services, and for monitoring compliance.

To the extent appropriate, Business Units must establish Relevant Procedures that include Fair Market Value guidelines, as well as limits on aggregate compensation provided to individual External Stakeholders and limits on frequency of engagement of individual External Stakeholders. The scope of such guidelines and limits ultimately established will vary, based upon locality and/or function. In developing Fair Market Value guidelines, these Business Units must consider local established compensation levels, varying levels of expertise and/or prominence of Third Parties, varying types and durations of Services to be provided, and the spirit and principles of this Policy.

Third Parties must be paid compensation consistent with and no greater than Fair Market Value, taking into account individual qualifications, experience, ability and reputation, and only for the Services actually provided, consistent with the terms of the engagement.

To the extent appropriate, Business Units must establish Relevant Procedures to enable the Company to satisfy transparency obligations, with respect to payments made to External Stakeholders.

10.5 Prior to the selection and engagement of a Third Party, Engagement Owners must conduct appropriate and proportionate risk assessments, as well as associated, due diligence procedures (if necessary), according to Relevant Procedures. Engagement Owners must take these steps to ensure that the Third Party's reputation and conduct relating to the execution of the engagement are consistent with the Company's ethical standards, with respect to all relevant areas of risk.

To the extent appropriate, Business Units must establish Relevant Procedures to guide Engagement Owners on how to assess, develop, communicate, implement and enforce required compliance expectations for Third Parties. Required compliance expectations will vary, based upon the nature of the Third Party, the Services to be provided and the nature of the associated risks. Based upon the risk assessment and outcomes for a particular Third Party, Engagement Owners may be required to implement one or more of the following actions with respect to that Third Party:

a) improvement plans or action plans;

b) monitoring or auditing requirements;

c) contractual obligations, including written assurances or commitments by the Third Party;

d) provision of Global Policies, Global Standards, Relevant Procedures or other reference materials, and/or associated training;

e) prior review of the engagement or aspects of the engagement or Services from the relevant Legal and/or Compliance partner; and/or

f) other actions to mitigate identified areas of risk, such as contractual risk mitigation clauses.

At a minimum, Engagement Owners must not engage a Third Party where it is known, or where there is a reason to believe, that the Third Party has Given or Received Bribes, unless the Engagement Owner has documented his/her satisfaction with all of the following, in consultation with the relevant Legal and/or Compliance partner:

a) the actions and improvements undertaken by the Third Party to remediate the concerns and/or behaviour;

b) the current level of compliance by the Third Party; and

c) evidence of the Third Party's ability to provide strong governance and monitoring and to prevent future occurrences of such concerns and/or behaviour.

Engagement Owners, in consultation with an appropriately senior level of management, must periodically reassess existing Third Party relationships, following the required timeframes outlined in the Relevant Procedures, and taking into account any unanticipated changes in the conduct, reputation or risks related to the particular Third Party.

10.6 See Section 2 of this Policy for further requirements on Engaging Third Parties. Engagement Owners must also refer to the *Global Standard on Engaging Third Parties* for further requirements, prior to entering into any engagement with a Third Party.

11. PROMOTIONAL & NON-PROMOTIONAL ACTIVITIES & MATERIALS

11.1 A key part of Our business is to provide information about Company Products and, where and when appropriate, to Promote their use. Promotional and Non-Promotional Activities and Materials must always be accurate, fair and balanced and not misleading in their content.

The Company has a duty to support the safe and effective use of Company Products. While the Company cannot provide medical advice to External Stakeholders or Patients, the Company may engage in Promotional and Non-Promotional Activities where this is appropriate and permitted by local law. For example, Promotional and Non-Promotional Activities directed to Patients (i.e., “direct to consumer” activities) may only be undertaken where this is permitted by local law.

Our activities must never undermine the relationship between HCPs and their Patients. All Promotional and Non-Promotional Activities and Materials directed to HCPs or Patients must therefore support HCPPatient Interactions and must allow the therapeutic value of Company Products to be assessed by HCPs in the interest of Patient care.

Promotional and Non-Promotional Materials about Company Products directed to Patients must be understandable, taking into account varying levels of education between and within populations. These Materials must be educational, scientific and balanced, and should encourage the Patient to seek further information from the appropriate HCP.

The Company may display Promotional or Non-Promotional exhibits, either in conjunction with a Meeting or as a stand-alone activity, according to the requirements included in Relevant Procedures. See the *Global Standard on Meetings* for further requirements on exhibits (with or without a Meeting).

11.2 The Company must only Promote Company Products once the time is right to do so (which will never be before the Company Product or Use has received the necessary Authorisation), and only consistent with the approved labeling.

Promotional Activities and Promotional Materials must meet all of the following requirements:

a) They must provide a fair balance between a Company Product’s benefits and its risks or limitations. They must not exaggerate the benefits or downplay the risks or limitations;

b) They must not mislead by distortion, exaggeration, undue emphasis, omission or in any other way, and must not involve false or unapproved statements about other companies’ products. Company Products must only be Promoted on their own proven merits; and

c) They must be capable of substantiation by reference to the approved labeling or scientific evidence consistent with the approved labeling, and must not involve discussions of Unauthorised Company Products or Uses.

Representatives and other Employees in customer-facing roles (e.g., public relations, telemarketing, Marketing, Medical) must be trained as appropriate to their role and must do all of the following in an accurate, responsible manner:

a) They must possess sufficient Company Product and disease area knowledge to present information to External Stakeholders or Patients, as appropriate to their role; and

b) They must be able to recognise inquiries regarding Unauthorised Company Products or Uses and refer these inquiries to Scientifically Trained Personnel.

All training and educational materials must be approved through the Applicable Internal Review Procedures.

Representatives and other Employees in customer-facing roles must have available a copy of the current, approved labeling for each Company Product or Use discussion they initiate with External Stakeholders.

Any revisions to the approved labeling must be communicated to Representatives and other relevant customer-facing Employees as soon as reasonably possible.

Promotional Activities that are directed to External Stakeholders must be confined to those individuals who are recognised practitioners in the area of medicine concerning Authorised Company Products or Uses.

Promotional Activities and Promotional Materials must not be directed to External Stakeholders who have requested that they not be sent such information.

11.3 Non-Promotional Activities and Materials (including those regarding disease awareness programs) must not be used to Promote Company Products. Non-Promotional Activities and Materials must be presented in an objective, balanced manner, and must be scientific in tone, language, appearance and intent.

Where local law allows the Company to respond to Company Product-related questions from Patients, any such response may only be made by Scientifically Trained Personnel or other specifically authorised Employee or Third Party, according to Relevant Procedures. Patients communicating with the Company must not be given medical advice, but must instead be referred to their HCP.

Specifically authorised Employees are permitted to proactively issue press releases or other Non-Promotional Materials, such as those relating to financial or investor information.

Scientifically Trained Personnel are permitted to proactively present scientific data or findings regarding Authorised or Unauthorised Company Products or Uses with a view to generating further scientific insight, supporting the medical community in learning about scientific/medical progress or sharing information on current medical practice, such as at scientific congresses or similar events.

All inquiries concerning Unauthorised Company Products or Uses (whether from External Stakeholders or Patients) must be referred to Scientifically Trained Personnel. All responses to such inquiries, either oral or written, must then come directly and only from such Scientifically Trained Personnel, and must meet all of the following requirements:

a) Information must only be provided in response to unsolicited inquiries;

b) Information must be accompanied by the approved labeling, as applicable;

c) All responses must be limited to the scope of the inquiry and must provide data which are appropriate to the source of the inquiry; and

d) All responses must contain (as relevant) a statement that the information requested involves an Unauthorised Company Product or Use and that the Company does not recommend Unauthorised Uses of the Company Product.

11.4 Promotional Materials and Non-Promotional Materials must be approved through the Applicable Internal Review Procedures. Any modification to approved Promotional or Non-Promotional Materials must also be approved through the Applicable Internal Review Procedures.

You must not create, use or provide “home-made” or other unapproved Promotional or Non-Promotional Materials on any topic. You must not alter any approved Promotional or Non-Promotional Materials in any way, unless such creation or alteration is for the express purpose of submitting these Materials for review and approval.

Promotional and Non-Promotional Materials must be assigned an expiration date upon approval, must be monitored for expiration date and must not be used after the expiration date specified in the original approval, unless they are formally re-approved through the Applicable Internal Review Procedures.

Promotional and Non-Promotional Materials must be accompanied by the approved labeling where applicable, as required by Relevant Procedures.

12. PRE-AUTHORISATION ACTIVITIES & MATERIALS

12.1 It is permissible to engage in Pre-Authorisation Activities (i.e., Profiling, Market Access and Pre-Authorisation Training activities), and to use materials supporting such activities, to prepare for a successful commercial launch of a Company Product or Use. Pre-Authorisation Activities must not be used to disguise Pre-Authorisation Company Product Promotion, or create an appearance of doing so.

Materials used for Pre-Authorisation Activities must be approved through the Applicable Internal Review Procedures.

12.2 Relevant Employees (e.g., Employees in the Marketing, Medical or Sales functions) and specifically authorised Third Parties may Profile customers prior to Authorisation of a new Company Product or Use, to assist in segmentation and targeting activities.

Profiling Activities may only be conducted if all of the following requirements are met:

a) Employees engaging in Profiling must use materials (e.g., scripts) that have been approved through the Applicable Internal Review Procedures;

b) These materials must be structured to allow for a brief conversation to collect broad information about an External Stakeholder’s involvement in a disease area, such as treatments and classes used (e.g., “What classes do you use to treat this disease state?”), as well as their needs and the needs of their Patients;

c) These materials must contain clear instructions on proper execution. These materials must contain a clear, prominent prohibition against engaging in Promotional Activities about the new Company Product or Use during a Profiling conversation;

d) These materials must not contain targeted questions that are specific or unique to a Company Product or Use;

e) If asked by the External Stakeholder about the purpose of the Employee’s questions, Employees may objectively state that the Company has submitted a Company Product or Use for regulatory Authorisation. Employees must not proactively discuss the Company Product or Use in any further detail; and

f) In the event that the External Stakeholder asks for more details about the Company Product or Use during a Profiling discussion, Employees (other than those in the Medical function) may provide appropriate contact information for the External Stakeholder to submit his/her own request for such information (i.e., a “professional information request”), but such Employees must not directly respond to the request or submit the request on behalf of the External Stakeholder. Employees in the Medical function may directly respond to the request and may submit a professional information request on behalf of the External Stakeholder.

During, and in support of, internal Company segmentation and targeting activities, relevant Employees may share existing knowledge and review and share prescribing data and other Company-purchased or publicly available information.

For the avoidance of doubt, Profiling activities are also permitted after Authorisation of a new Company Product or Use.

12.3 Relevant Employees other than Representatives or their first line managers (e.g., Employees in the Market Access or Medical functions) and specifically authorised Third Parties may perform Market Access activities prior to Authorisation of a new Company Product or Use, by providing Company Product or relevant disease area information to Healthcare Organisations ("HCOs") (i.e., payers) or Public Officials to support regulatory Authorisation, pricing or reimbursement discussions.

For the avoidance of doubt, Market Access activities are also permitted after Authorisation of a new Company Product or Use.

12.4 Pre-Authorisation Training on Unauthorised Company Products or Uses may be initiated as necessary to allow for sufficient time to study and understand the new information presented regarding the Company Product or Use, disease area, disease management, External Stakeholder and Patient needs and/or the current market, including the current state of medical practice, competitors and existing therapies, and treatment protocols and Guidelines.

In making the determination of the timing and sequencing of Pre-Authorisation Training for a particular new Company Product or Use (as a guideline, no longer than 60 days before the expected Authorisation date), the Reviewer must seek input from Employees in the Medical, Training, Commercial, Compliance and/or Legal functions ("contributing functions"), as applicable, and must take into account all of the following considerations:

a) whether the training will involve a new or familiar disease area;

b) whether the training will involve an Unauthorised Company Product or an Unauthorised Use of an Authorised Company Product;

c) the likelihood of receiving significant changes and comments to the proposed labeling submitted to the regulatory agency responsible for Authorisation;

d) the risks of pre-Authorisation Promotion arising from providing training on Unauthorised Company Products or Uses and/or Promotional messages; and

e) other factors deemed relevant to the particular proposed training by the Reviewer and/or contributing functions, who are evaluating the training need and the associated risks.

All Pre-Authorisation Training materials must be marked with a clear, prominent, appropriate disclaimer stating that the material is strictly for internal purposes only (e.g., "For Internal Use Only"). These materials may include information on Unauthorised Company Products or Uses or relevant disease areas, and may include relevant reprints. These materials, or the information they contain, must not be shown, discussed, or distributed outside the Company, except where an appropriate Third Party must also be trained (e.g., a contract sales force or sales force of a co-promotional partner).

After the relevant Authorisation has been obtained, information included in Pre-Authorisation Training materials that is appropriate for discussion with External Stakeholders or Patients may be included in Promotional and/or Non-Promotional Materials specifically designed and approved for those purposes.

13. NON-INTERVENTIONAL STUDIES

13.1 Non-Interventional Studies ("NISs") must address a scientifically and medically valid question to which the Company needs the answer.

These may include: the effectiveness and/or safety of a Company Product, medical practice and drug utilisation characterisation, disease epidemiology and clinical epidemiology, burden of disease (e.g., costs and quality of life) or other Patient-reported outcomes, and compliance/adherence to a therapeutic regimen.

13.2 The Company must not be involved in the decision to place a particular Patient on a specific Company Product. That decision is made solely by the Patient's HCP.

An NIS must not be used to induce the use or prescription of a Company Product or to train HCPs on the use of a particular therapy.

Patients must not be given a Company Product or switched to a Company Product for the purpose of taking part in the study.

13.3 NISs must be observational in nature and the collected data must undergo a formal analysis by the Company or by a Third Party on the Company's behalf.

Additional diagnostic or monitoring procedures must not be applied to the Patients, and epidemiological methods must be used for the analysis of collected data.

13.4 See Section 2 of this Policy for further requirements on NISs. Employees must also refer to the Relevant Procedures (i.e., International Procedures) for further requirements.

All NISs must be registered and their results posted according to the requirements of the Relevant Procedures.

The decision to conduct an NIS and the selection, engagement and payment of NIS investigators must meet all of the relevant requirements of Section 10 of this Policy and the *Global Standard on Engaging Third Parties.*

Support for NISs may be Given by specifically authorised Third Parties on behalf of the Company according to the Relevant Procedures.

14. INVESTIGATOR SPONSORED STUDIES

14.1 The Company recognises the importance of Investigator Sponsored Studies ("ISSs") in expanding scientific knowledge related to potential Uses of Company Products.

An ISS may be conducted with Authorised or Unauthorised Company Products or Uses.

All ISSs supported by the Company must be consistent with the research strategy for the relevant Company Product.

14.2 The Company may provide support for an ISS, but must not be considered to be the sponsor or to have any partial sponsorship role in the study in accordance with local law.

The decision to provide support for an ISS must be based on whether the study expands scientific knowledge related to potential Uses of Company Products and/or associated disease area(s) through a properly conducted independent clinical study that will result in the publication of meaningful new data.

14.3 See Section 2 of this Policy for further requirements on ISSs. Employees must also refer to the Relevant Procedures (i.e., International Procedures) for further requirements.

A contract approved through the Applicable Internal Review Procedures must be negotiated and signed by authorised representatives of the Company and the sponsor and, as applicable, the investigator, prior to study initiation.

The level of financial support that may be provided will vary among countries. It must always be consistent with Fair Market Value for the activities to be conducted as part of the clinical trial, and payments must be milestone-driven.

The Company must not provide Company Product Samples for use in ISSs.

Support for ISSs may be Given by specifically authorised Third Parties on behalf of the Company according to the Relevant Procedures.

GLOSSARY

Advisory Boards refers to internal Meetings organised by the Company where the Company engages External Stakeholders (i.e., "**Advisors**") to provide the Company with independent advice and input within their area of expertise.

Advisors refers to the definition provided within the definition of Advisory Boards.

Applicable Internal Review Procedures refers to the review and approval requirements for Interactions and supporting materials, as set out in Relevant Procedures. These requirements include, but are not limited to, review and approval by Nominated Signatories, Scientifically Trained Personnel, the Legal Department, other specialist functions (e.g., Procurement) or line managers, as appropriate (i.e., "**Reviewers**"). Reviewers must take into account the substance, as well as the intended purpose and audience, when approving Interactions or supporting materials, and approval must be obtained in advance of any Interaction or use of supporting materials.

Authorisation or **Authorised** refers to approval of a Company Product or Use by the relevant local regulatory agency, to permit entry into the local market or to permit inclusion into the local approved labeling.

Bribe or **Bribery** refers to Giving or Receiving of something of value that is intended or could be seen as an inducement or reward for improper behaviour (i.e., behaviour that is dishonest or illegal or a breach of duty of impartiality, trust or good faith), to influence any official act or decision, or to obtain or retain business, favourable treatment or other advantage or benefit. Giving or Receiving of Bribes is a wellrecognised form of corruption (collectively referred to as "improper influence" through this Policy).

Business Unit refers to a distinct section of the Company, such as a consolidated legal entity, a local marketing organisation, a Senior Executive Team ("SET") function, a department or operating entity within a SET function, or, in some cases, a cross-functional unit comprising Employees with common responsibilities.

Community Investment Contributions refers to certain charitable Donations, Sponsorships or Partnerships Given by the Company to non-profit organisations that meet the relevant criteria described in the *Global Standard on Contributions* and the *Global Procedure and Guidance Community Investment*.

Company or **Our** refers to AstraZeneca PLC and its consolidated legal entities worldwide, including MedImmune.

Company Product refers to any pharmaceutical or biological product or medical device that is developed and/or marketed by the Company, including investigational products/devices and co-promoted products/devices. For purposes of this Policy, references to Company Products include both Authorised and Unauthorised Company Products, unless specifically noted.

Conflicts of Interest refers to situations where personal, financial or other interests, activities or associations outside of the Company may influence or compromise, or could be seen to influence or compromise, the professional duties and decisions of an Employee or Third Party providing Services.

Contributions refers to financial or non-financial support (e.g., funds or in-kind assistance, such as resources, facilities or Employee time) Given by the Company to a Third Party. Contributions may be classified as either Donations, Sponsorships or Partnerships.

Cultural Courtesy Gift refers to a personal Gift traditionally given to acknowledge a significant national, cultural or religious holiday or event.

Donations refers to the type of Contributions Given by the Company to a non-profit or Public Sector Organisation, that may or may not be for a designated pre-defined initiative.

Employee or **You(r)** refers to all Company full-time and part-time directors, officers, employees and temporary staff worldwide.

Engagement Owners refers to Employees responsible for engaging with and managing the Services provided by a Third Party.

External Stakeholders refers to the category of Third Parties who are external customers and other relevant stakeholders, including Healthcare Professionals (“HCPs”) and Healthcare Organisations (“HCOs”), Scientifically Trained Personnel engaged by the Company to provide Services, Public Officials, Patient Groups and other relevant public and private organisations and groups.

A **Facilitation Payment** (or “grease” payment) is an unofficial payment or anything else of value Given to Public Officials (including HCPs and other individuals employed by Public Sector Organisations) to secure or speed up routine actions that the recipient has a duty to perform. Examples include additional payments required to issue permits or licences, speed passage through immigration controls and release goods held at port or in customs.

Fair Market Value refers to the amount that a service or item would be worth to a typical buyer who is under no duty to purchase and who receives no special advantage. Fair Market Value is determined by the home country of the relevant service provider (who receives payment for the service) or relevant buyer of the item.

Fellowships and **Preceptorships** refer to programmes conducted at host institutions and designed to provide basic training (i.e., training necessary to obtain a degree or licence) or advanced education to HCPs or scientists in a particular specialty, therapeutic area or field of research.

Gift refers to an Item of Value that is provided as a mark of appreciation, commemoration or friendship.

Give, Giving or **Given** means to directly or indirectly offer, promise or give, or to authorise such actions.

Global Policies refers to the mandatory documents that support the Company’s *Code of Conduct* by setting out the compliance commitments of the Company and the key principles to be followed to meet those commitments.

Global Standards refers to the mandatory documents that support the Global Policies by describing the compliance rules to be followed to deliver the intent stated in the Global Policies or in the Company's *Code of Conduct*.

Guidelines refers to any of the following materials and may or may not relate to a specific disease state: practice guidelines, treatment guidelines, medication algorithms, disease definitions or Research & Development quality standards. Guidelines are not intended to refer to treatment guidelines or protocols developed by HCOs, where such development is essential to the business of the HCO (such as a formulary or benefit administrator), or those developed by HCP practices.

Healthcare Professionals ("HCPs") and **Healthcare Organisations ("HCOs")** refer to individuals or organisations, respectively, who may or do prescribe, administer, recommend, purchase, pay for, reimburse, authorise, approve or supply any Company Product or service, including any members of the medical, dental, pharmacy or nursing professions, and relevant associated administrative staff; and/or hospitals and other care organisations, health plans, health insurers, managed care organisations, pharmacies, formulary or benefit administrators and clinical research organisations, and relevant staff at such entities.

Hospitality refers to Meals, travel/accommodation, and other directly related, incidental expenses, as well as invitations or tickets to social or entertainment events. Entertainment events include sporting, theatre, music or recreational events.

Interactions refers to the business and personal interactions and activities described in this Policy.

Interacts refers to the conduct of an Interaction.

Investigator Sponsored Study (ISS) refers to a clinical study that is independently initiated, designed and conducted by an external investigator (who assumes both the sponsor and principal investigator role) or medical institution, collaborative research group or academic research organisation (which assumes the sponsor role and appoints principal investigator(s) for the study). For purposes of this Policy, sponsor/investigator is used as a generic term for both situations described above.

Item of Medical Utility refers to an Item of Value primarily designed to educate External Stakeholders or Patients or help External Stakeholders educate Patients about disease management in disease state areas relevant to Authorised Company Products or Uses.

Items of Value refers to Gifts, Items of Medical Utility, items used to assist in screening or diagnosis of Patients, items linked to the safe and effective administration of Company Products, logistical items, Samples (including Samples vouchers or coupons), awards and Patient Programmes.

Market Access refers to discussions with HCOs (i.e., payers) or Public Officials about regulatory Authorisation, pricing or reimbursement decisions.

Market Research refers to the systematic gathering and interpretation of quantitative or qualitative data on the market environment from External Stakeholders or Patients using statistical and analytical methods to gain insight and support decision-making. It does not include the gathering and interpretation of "real world evidence" or Company-purchased HCP-level data.

Meals refers to food and/or beverages.

Meeting refers to a planned gathering of External Stakeholders, which the Company organises or supports, either financially or non-financially. Non-financial support includes in-kind assistance, such as resources, facilities or Employee time. Meetings may be for an internal Employee audience, or for an external audience of External Stakeholders and may be held in-person or virtually.

Non-Interventional Study (NIS) refers, in general terms, to a study where the assignment of the Patient to a particular therapeutic strategy is not decided in advance by a study protocol but falls within the HCP's current practice, and the prescription of the Company Product is clearly separated from the decision to include the Patient in the study.

Non-Promotional Activity refers to any activity that is not a Promotional Activity that is intended to provide scientific or educational information about Company Products, relevant disease areas or health and medicines generally. Non-Promotional Activities may be oral or written and may be conducted through any medium, including the Internet. Non-Promotional Activities may take a number of forms, including, but not limited to, leaflets provided with Company Products, point of sale information, information regarding disease awareness programmes, responses to queries from External Stakeholders or Patients, information provided to inform the development of Guidelines or other information contributing to scientific exchange.

Non-Promotional Materials refers to materials intended to be used during Non-Promotional Activities or to support Non-Promotional Activities.

Our or **Company** refers to AstraZeneca PLC and its consolidated legal entities worldwide, including MedImmune.
Other Third Parties refers to the category of Third Parties who are not External Stakeholders or Patients, including, but not limited to, the media, suppliers, distributors, agents and joint venture, co-promotion, research and licensing partners.

Partnerships refers to the type of Contributions Given by the Company in collaboration with a non-profit, for-profit or Public Sector Organisation for a pre-defined initiative, involving substantive, active Company participation and resulting in the delivery of specific, measurable outcomes. For purposes of this Policy, Partnerships do not include research or commercial collaborations aimed at the development or marketing of Company Products or services for the Company's benefit.

Patient Groups refers to non-profit organisations formally representing the needs of Patients, their families and other caregivers.

Patient Programmes refers to Items of Value, specifically vouchers, rebates, coupons, co-pay assistance cards, motivational information and other programmes and materials designed to increase access and affordability of Company Products or to enhance therapy compliance.

Patients refers to the category of Third Parties who are members of the general public and who use or may use Company Products.

Payments for Voluntary or Incidental Activities refers to any compensation or expense reimbursement Given to an individual or organisation as a "thank you" for voluntary activities or for activities that are not necessary to address a genuine business need. They do not include payments made to Third Parties for contracted Services that address a genuine business need.

Policy refers to this *AstraZeneca Global Policy on Ethical Interactions*.

Political Activities refers to attendance or participation in public policy or other political activities, including participation in political conventions or fundraising events for Political Organisations or individual Public Officials and their causes.

Political Organisations refers to political parties and their employees, Political Action Committees ("PACs") and other political organisations. Political Support is distinct from Company Contributions to Public Sector Organisations (See Section 5), as well as payments to Public Officials or Public Sector Organisations (See Sections 7 and 10).

Political Support refers to financial or non-financial support (e.g., funds or in-kind assistance, such as resources, facilities or Employee time) Given to Political Organisations or individual Public Officials and their causes.

Pre-Authorisation Activities refers to Profiling, Market Access and Pre-Authorisation Training activities undertaken by Employees in preparation for Authorisation of a new Company Product or Use.

Pre-Authorisation Training refers to Company-provided education to Representatives and/or their first line managers in preparation for Authorisation of a new Company Product or Use.

Preceptorships and **Fellowships** refer to programmes conducted at host institutions and designed to provide basic training (i.e., training necessary to obtain a degree or licence) or advanced education to HCPs or scientists in a particular specialty, therapeutic area or field of research.

Presentation refers to each segment of a Meeting, where a distinct speaker is used and/or distinct topic is discussed.

Presentation Materials refers to all materials intended to be shown and/or distributed to the speaker or audience before, during or after a Presentation, including but not limited to speaker briefing documents, written summaries of Presentation objectives, slides and reference documents.

Profiling (also known as “disease insight visits”) refers to discussions with External Stakeholders to gain an understanding of their involvement in a disease area, including therapeutic options, medical gaps, External Stakeholder needs or the needs of Patients. For the avoidance of doubt, Profiling is not considered Market Research.

Promote, **Promotion** or **Promotional** refers to the conduct of Promotional Activities.

Promotional Activity refers to any activity that is intended or could be seen to Promote the prescription, administration, recommendation, purchase, payment, reimbursement, authorisation, approval, supply or use of Company Products or services. Promotional Activities may be oral or written and may be conducted through any medium, including the Internet.

Promotional Materials refers to materials intended to be used during Promotional Activities or to support Promotional Activities.

Promotional Speaker Programmes refers to Promotional Meetings organised by the Company to Promote Authorised Company Products or Uses, where the Company engages External Stakeholders

(i.e., “**Promotional Speakers**”) to speak to other External Stakeholders on behalf of the Company about such topics.

Promotional Speakers refers to the definition provided within the definition of Promotional Speaker Programmes.

Public Official refers to an individual who:

- Holds a legislative, administrative or judicial position of any kind, whether appointed or elected, or is a candidate for such a position, or
- Exercises a public function for a country or territory of a country, or for any Public Sector Organisation of a country or territory, at the national, regional or local level,
- Acts as an official or agent of an international Public Sector Organisation, or
- Is any other employee (including HCPs) of a Public Sector Organisation.

Public Sector Organisation refers to an agency, enterprise, or other entity of a government that sets or administers public policy or exercises executive, political and/or sovereign power through customs,

institutions and laws within a country or territory of a country, at the national, regional or local level. It also includes state-owned and state-controlled entities, such as a state-owned or state-controlled hospital, university, energy company, telecommunications company or other similar state-owned or statecontrolled enterprises.

Receive, Receiving or **Received** means to directly or indirectly solicit, agree to receive or accept, or to authorise such actions.

Relevant Procedures refers to the written local and/or functional policies, standards, procedures and guidelines that contain details, processes and controls for compliance with this Policy and the supporting Global Standards.

Representatives refers to Employees who are members of any Commercial channel who Promote Company Products directly to External Stakeholders. Representatives may be referred to as sales representatives, service team associates, inside sales agents, medical representatives or other titles, depending upon the relevant local marketing organisation. Representatives include any Third Parties fulfilling such responsibilities on the Company's behalf (i.e., a contract sales force). Representatives do not include other Employees, such as those performing marketing or market access activities.

Reviewers refers to the definition provided within the definition of Applicable Internal Review Procedures.

Sample refers to an Item of Value, specifically a unit of pharmaceutical Company Product that is not to be sold but is provided free of charge to an HCP to allow the HCP and appropriate Patients to determine tolerability and effectiveness of the Company Product.

Scientifically Trained Personnel refers to individuals employed or engaged by the Company who are highly-trained experts, who have relevant, specialised scientific and/or medical knowledge and whose responsibilities include the provision of scientific and/or medical information. This excludes anyone in the Sales, Marketing or other non-Medical Commercial functions, even if they have scientific or medical training or backgrounds.

Section refers to Sections 1 through 14 of this Policy, listed in the Table of Contents. Each Section covers a category of Interactions.

Services refers to the activities performed by a Third Party engaged by the Company. Services include activities performed on behalf of the Company, goods, services or information provided to the Company, or the activities performed in collaboration with the Company.

Sponsorships refers to the type of Contributions Given by the Company to a non-profit, for-profit or Public Sector Organisation for a pre-defined initiative, where the Company's name is associated with the initiative and/or the Company receives other substantial recognition for the Sponsorship.

Sympathy Gift refers to a personal Gift to express sympathy for bereavement or serious illness of the recipient or immediate family member.

Third Party(ies) refers to any person or organisation who is not the Company or an Employee, with whom Employees Interact. The various types of Third Parties are categorised as either External Stakeholders, Patients, or Other Third Parties. Where a Third Party fits into more than one category, the more restrictive rules apply.

Uses refers to the indications, dosing, populations and other uses of Company Products. For purposes of this Policy, references to Uses include both Authorised and Unauthorised Uses of Company Products, unless specifically noted.

Unauthorised refers to a Company Product or Use that has not yet received Authorisation from the relevant local regulatory agency. An Unauthorised Company Product may also be referred to as “investigational.” An Unauthorised Use (i.e., an “off-label use”) is inconsistent with the local approved labeling for a Company Product.

Voluntary or Incidental Activities refers to any voluntary activities or activities that are not necessary to address a genuine business need.

You(r) or **Employee** refers to all Company full-time and part-time directors, officers, employees and temporary staff worldwide.

REFERENCES

Global Standard on Items of Value and Hospitality
http://portalapps.is.astrazeneca.net/azgard-components/ldms-documents/Global_Compliance/effective/Global%20Standard/LDMS_001_00145832.pdf

Global Standard on Contributions
http://portalapps.is.astrazeneca.net/azgard-components/ldms-documents/Global_Compliance/effective/Global%20Standard/LDMS_001_00145831.pdf

Global Procedure and Guidance Community Investment
http://portalapps.is.astrazeneca.net/azgard-components/ldms-documents/Global_Compliance/effective/Procedure/LDMS_001_00146359.pdf

Global Guidance for Product Donations
http://portalapps.is.astrazeneca.net/azgard-components/ldms-documents/Global_Compliance/Active/Guidance%20Materials/LDMS_001_00146361.pdf

Global Standard on Meetings
http://portalapps.is.astrazeneca.net/azgard-components/ldms-documents/Global_Compliance/effective/Global%20Standard/LDMS_001_00145768.pdf

Global Standard on Engaging Third Parties
http://portalapps.is.astrazeneca.net/azgard-components/ldms-documents/Global_Compliance/effective/Global%20Standard/LDMS_001_00145830.pdf

[*] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed separately with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

Exhibit G

Initial Members of the JSC

AstraZeneca

Fouzia Laghrissi Thode, Vice President, Global Product Portfolio Strategy

Elisabeth Björk, Global Product Vice President, Global Medicines Development

Howard Hutchinson, Vice President for Product Licensing, Global Medicines Development

Peter Honig, VP Global Regulatory Affairs, Global Regulatory Affairs

David Snow, President, China & Hong Kong, Global Commercial

AstraZeneca Secretariat: Joseph McCullough

FibroGen

Frank Valone

Peony Yu

Al Lin

Michael Lowenstein

Chris Chung

FibroGen Secretariat: Kirara Tsuboi

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Schedule G (a)

Until the date when the JDC has been formed, the JSC delegates the following responsibilities to the Core Joint Project Team. Unless otherwise directed by the JSC, the Core JPT shall:

(i) provide regular reports to the JSC regarding the development of the Product, and discuss, prepare and submit to the JSC for approval annual and interim amendments to the Development Plan (and the Development Budget) for each Product;

(ii) discuss and manage the implementation of the Initial Development Plan;

(iii) discuss the audited final report from the Carcinogenicity Studies, including whether or not a Technical Product Failure has occurred, and provide input thereon to the JSC;

(iv) propose to the JSC particular studies to be conducted;

(v) create, propose for JSC review and approval, and implement the Development Strategy for Development in the Territory and the design of all Clinical Trials and Nonclinical Studies conducted under each Development Plan, including Phase 4 Clinical Trials;

(vi) create and propose the CMC related development plan for JSC review and approval, and oversee any CMC related development activities according to the plan, e.g. stability studies or packaging development, as well as other activities to prepare for supply of drug substance and finished Product for Commercialization, including to oversee the selection process for, and select (pursuant to Section 6.4), a contract manufacturer to be used by FibroGen for commercial supplies;

(vii) allocate budgeted resources and determine priorities for each Clinical Trial and Nonclinical Study under each Development Plan, including Phase 4 Clinical Trials;

(viii) supervise, with regular oversight by the JSC, the conduct of all Clinical Trials and Nonclinical Studies under each Development Plan, including Phase 4 Clinical Trials;

(ix) endorse the selection of Third Party contractors to conduct Clinical Trials of Products;

(x) facilitate, with regular oversight by the JSC, the flow of Information between the Parties with respect to the Development of Products, including Development Data and Astellas Data pursuant to Section 3.10, as well as any other Information related to the Astellas Collaboration that has a material impact on AstraZeneca's rights under this Agreement;

(xi) discuss the priority of life cycle management Development of Products for other indications and propose any such indications to the JSC;

(xii) propose to the JSC for approval allocation of primary responsibility as between the Parties for tasks relating to Development of Products where not already specified in the Development Plan;

(xiii) discuss the requirements for Regulatory Approval in the Territory and oversee and coordinate regulatory matters with respect to Products in the Territory, including to review and approve material regulatory filings (other than the filing of an NDA in the U.S., which shall be approved by the JSC) prior to submission thereof;

(xiv) propose to the JSC for approval and implement a publication strategy for publications and presentations related to Products in the Territory and review and approve all such publications in accordance with Section 12.5, provided that the responsibilities under this subsection (xvi) with respect to a certain Product shall transition from the JDC to the JCC following the first NDA approval of such Product in the U.S., the more precise timing of such transition to be mutually agreed by the Parties;

(xv) facilitate the flow of Information between the Parties with respect to obtaining Regulatory Approval for Products; and

(xvi) perform such other functions as may be appropriate to further the purposes of this Agreement, as directed by the JSC.

Schedule G (b)

Until the date when the JCC has been formed, the JSC delegates the following responsibilities to Core Joint Project Team. Unless otherwise directed by the JSC, the Core JPT shall:

(xvii) regularly report to the JSC regarding the Commercialization of the Products, and discuss, prepare and submit for approval to the JSC the U.S. Commercialization Plan for each Product in the U.S., including any amendments thereto;

(xviii) coordinate the Commercialization activities of FibroGen and AstraZeneca with respect to Products, including pre-launch and post-launch activities;

(xix) propose to the JSC for approval the allocation of primary responsibility as between the Parties for tasks relating to Commercialization of Products in the U.S.;

(xx) propose to the JSC for approval the amount of Product to be distributed free of charge annually for regulatory or marketing purposes or investigator-initiated trials (it being understood and agreed that neither Party shall have the right to distribute the Product as samples except pursuant to Section 5.7); and

(xxi) perform such other functions as appropriate to further the purposes of this Agreement, as directed by the JSC.

Exhibit H

FG-4592 Initial Development Plan

[*]

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Exhibit I

U.S. Co-Commercialization Terms

Unless the Parties agree in writing upon an alternate allocation of responsibility, the Parties shall have the following rights and obligations with respect to the operational responsibilities for the Commercialization of Products in the U.S. under each U.S. Commercialization Plan, under the direction of the JCC as specified in Section 2.4 and Article 5.

[*]

Exhibit J

Development Supply Terms

The supply from FibroGen to AstraZeneca, or to FibroGen internally where FibroGen has been assigned (either by the JDC or under the terms of the Agreement) the lead responsibility for the conduct of a Clinical Trial for which the supply is intended, shall include those GMP quantities of Product, and those development activities, in either case, approved by the JDC. As of the Effective Date, the JDC has not been convened. Therefore, the Parties have agreed that the following provisions shall govern the manufacture and delivery of the supplies necessary to conduct the Clinical Trials under the Development Plan.

FibroGen shall manufacture and supply an appropriate amount (currently estimated at up to approximately 3 million units of Product (i.e. 3 million tablets of active drug) and approximately 1.5 million tablets of placebo) for the conduct of the Phase 3 Clinical Trials sponsored by AstraZeneca as well as the amount required to support FibroGen's studies and regulatory submissions. The Parties shall agree upon more exact quantities as soon as possible. Such unit numbers shall include varying drug strengths for the Clinical Trials and shall be delivered at least four (4) months ahead of the start of the Clinical Trials, subject to Section 6.2.

FibroGen shall continue its already started development of a solid formulation, e.g. tablet, aimed at enabling attributes such as commercially viable shelf-life and use of standard primary packages, a dosage unit size to enable an attractive intake by patients as well as deemed possible to manufacture by conventional manufacturing technology in a cost effective manner and that does not reduce the clinical effectiveness or increase a hypothetical adverse event profile of the Product. FibroGen shall initiate *in vivo* testing as needed and according to timelines agreed by the JDC.

The supplies and activities set forth in this Exhibit J may be amended from time to time by the JDC or the JSC.

FibroGen shall report the progress of the items listed above to AstraZeneca's appointed Pharmaceutical Development contacts on a regular and reasonable basis. FibroGen shall also consult AstraZeneca prior to making any critical decisions with material impact on further development, e.g. choice of solid state form, particle size control methodology, choice of excipients, process technology and packaging materials, stability testing protocols, quality specifications and analytical testing methodology, choice of starting materials and sourcing.

Exhibit K

Main Terms for Supply Agreement and Quality Agreement

The Supply Agreement ("**SA**") and Quality Agreement ("**QA**") referenced at Section 6.3 of the Agreement shall contain the following main terms and conditions. Capitalized terms used but not defined in this Exhibit K shall have the meaning ascribed to such terms in the Agreement.

Supply

— Effective Date of SA/QA: The SA and the QA will provide for an effective date which is earlier than the execution date, in case supply of Product is required prior to execution of the SA and the QA.

— Conflict: In the event of a conflict between the Agreement and the SA or the QA, the SA once executed will control with respect to supply matters, and the QA, once executed, will control with respect to quality matters.

— Forecasting, Ordering and Delivery: Terms relating to forecasting and ordering shall be set forth in the SA. The Parties shall agree and include in the SA, a mechanism for defining the lead-times for all Products ordered by AstraZeneca. Delivery of Product shall be EXW INCOTERMS 2010 to an address specified by AstraZeneca. Title shall pass to AstraZeneca on delivery to AstraZeneca or its designee.

— Failure to Supply: The SA will include remedies and other consequences for supply failure (to be defined in the SA) including: (i) rights for AstraZeneca to access relevant information in the possession of FibroGen and its affiliates relating to the manufacturing processes for the Product; and (ii) rights for AstraZeneca to contact FibroGen's suppliers (including suppliers of the active pharmaceutical ingredient for the Product), both (i) and (ii) to assess the feasibility of (including contracting with) such suppliers manufacturing and supplying the Product to AstraZeneca, solely in the event of a supply failure by FibroGen.

— Insurance and Risk: The agreement will contain provisions requiring FibroGen to maintain insurance coverage of the types and in the amounts typically carried by providers of manufacturing services in the pharmaceutical or chemical area. FibroGen shall bear the risk of loss of materials (including API) and Product while within FibroGen's or its subcontractor's control.

— Subcontractors: FibroGen may engage subcontractors ("Subcontractors") that meet the quality standards agreed by the Parties. No such subcontract shall release FibroGen from any of its obligations under the SA or the QA except to the extent such obligations are satisfactorily performed by such Subcontractor in accordance with the SA and the QA. To the extent that AstraZeneca has genuine concerns and can demonstrate with reasonable documentation to FibroGen the basis for its concern with respect to the performance of the work for which the Subcontractor is to be engaged, the choice of such Subcontractor shall be subject to AstraZeneca's approval.

— Formulation: In the event the Parties decide that AstraZeneca will carry out formulation of the Product, such activities will be included in the SA and any applicable terms will be added to the SA to account for AstraZeneca's role in the formulation activities.

— Non-Conforming Product: The agreement will contain provisions relating to the determination and replacement of nonconforming product and the use of a Third Party testing laboratory to resolve disputes relating to nonconforming product.

— Shortfalls: The SA will include consequences relating to any failure or inability to supply full quantities of Product in compliance with the applicable product specifications ordered by AstraZeneca, including an obligation that in the event of a shortage, FibroGen will allocate an amount of its remaining manufacturing capacity in an equitable manner to be set forth in the Supply Agreement.

— Pricing and Payment: The pricing provisions set out in Section 6.5 of the Agreement shall be incorporated into the terms of the SA. AstraZeneca shall pay invoices in accordance with the terms set forth in the Agreement.

— Legal and Regulatory Requirements: Appropriate provisions shall be included in the SA to ensure that each Party complies with all relevant local, national and international legal or regulatory requirements and other relevant requirements applicable to the manufacture, handing, transport and storage of all Products at all times.

— Governance: The SA will include governance and reporting provisions specific to the manufacturing activities, which governance provisions will be designed to provide AstraZeneca transparency into the activities under such agreement, including subcontracting and CMO arrangements, and to facilitate effective management of the supply chain.

— Health and Safety: FibroGen shall be wholly accountable and liable for the safety, health and environmental aspects of all work performed on its or any of its subcontractor's premises.

— AstraZeneca Policies: The SA will include provisions required to comply with applicable AstraZeneca standard policies, including with respect to responsible procurement, product security and waste handling.

— Document Retention**:** Appropriate provisions shall be included in the SA with regard to maintaining appropriate documentation for patent and regulatory purposes and in full compliance with all applicable laws.

— Technology Transfer: The technology transfer provisions in the Agreement will remain in effect during the term of the SA (and any post-expiration or termination supply period, as described above in Section 13.6(e) or (g)), even after the Agreement has terminated or expired.

— Liability and Indemnity: The SA will include provisions relating to liability and indemnification that are consistent with the principles of allocation of liability described in the Agreement.

— Warranties: FibroGen will be required to provide customary representations and warranties within the SA, including (but not limited to) as to the following:

(a) that it has full power and authority, and has taken all necessary actions and has obtained all necessary authorizations, licenses, consents and approvals required, to execute and perform the SA, and

(b) that its retention as a supplier by AstraZeneca and its performance of the SA do not, and shall not, breach any agreement with any other third party.

— Generally:

- The SA shall include such terms as are reasonable and customary for similar supply agreements.
- Each of the Parties agree and acknowledge that the SA will contain a number of provisions which shall be consistent with provisions in the body of the Agreement, including Confidentiality, Assignment, Governing Law and Dispute Resolution.

Quality

— General: A Quality Agreement shall be negotiated in good faith between the Parties and shall include all appropriate provisions as would normally be contained in such an agreement. Any breach of the QA shall be deemed a breach of the SA.

— The QA shall include:

- Notice to AstraZeneca of inspections by regulatory authorities and access to such inspections
- Notice to AstraZeneca of and access to all investigations concerning the manufacture of Products
- Provision by FibroGen of documentation required by AstraZeneca
- Maintenance of a change control system which allows for the pre-approval of major changes
- Rights for AstraZeneca to conduct quality audits on FibroGen or any Subcontractor
- Agreed procedures on a product recall

— Each of the Parties agrees and acknowledges that the Products must satisfy appropriate specifications and associated tests, details of which shall be set out in the QA, and a mechanism for handling any defective products shall be agreed and included in the QA.

Exhibit L

Invoicing Requirements

Subject to any separate instructions to be agreed between the Parties regarding payments to health care professionals or health care organizations in the Territory, as required by applicable laws and regulations, invoices should be sent to:

AstraZeneca AB
AstraZeneca R&D Mölndal
Att. Christina Wågestrand
CVGI iMed Strategy
431 83 Mölndal
Sweden

Invoices shall contain the following information:

a. AstraZeneca's Agreement ID: Elisabeth Björk, Global Product Vice President, Global Medicines Development, ECHO Project ID 10007956
b. the number and date of invoice
c. the latest date of payment according to Agreement
d. description of services
e. name and address of FibroGen, Inc.
f. FibroGen, Inc. VAT registration number or EIN/TaxID,
g. AstraZeneca's VAT registration number SE556011748201 (in EC),
h. VAT rate (%), if any,
i. taxable amount per VAT rate, if any,
j. VAT amount, if any
k. legal reference or explanation when VAT is excluded,
l. invoice amount and currency,
m. bank details, preferably IBAN code, otherwise account number and bank code, and
n. SWIFT-address.

Exhibit M

Patents that may be Extended

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Exhibit N

ASTRAZENECA AND FIBROGEN COLLABORATE TO DEVELOP AND COMMERCIALISE FG-4592, A TREATMENT FOR ANAEMIA IN CHRONIC KIDNEY DISEASE AND END-STAGE RENAL DISEASE

Collaboration to include US, China and selected other markets

31 July 2013

AstraZeneca and FibroGen today announced that they have entered into a strategic collaboration to develop and commercialise FG-4592, a first-in-class oral compound in late stage development for the treatment of anaemia associated with chronic kidney disease (CKD) and end-stage renal disease (ESRD).

This broad collaboration focuses on the US, China and all major markets excluding Japan, Europe, the Commonwealth of Independent States, the Middle East and South Africa, which are covered by an existing agreement between FibroGen and Astellas Pharma Inc. The AstraZeneca-FibroGen joint effort will be focused on the development of FG-4592 to treat anaemia in CKD and ESRD, and may be extended to other anaemia indications.

FG-4592 is a small molecule inhibitor of hypoxia-inducible factor (HIF) prolyl hydroxylase. HIF is a protein that responds to oxygen changes in the cellular environment and meets the body's demands for oxygen by inducing erythropoiesis, the process by which red blood cells are produced. FG-4592 has the potential to address the considerable unmet medical need for an effective treatment for anaemia that offers the convenience of oral administration and an improved safety profile as compared to current standards of care. At present, treatment options involve a combination of injectable erythropoiesis-stimulating agents (ESAs) and iron supplements. FG-4592 works through the body's natural oxygen-sensing and response system to help produce red blood cells. This can be compared to the body's natural response to conditions at high altitude, where oxygen levels are low, which is to produce more red blood cells.

In Phase II clinical studies, FG-4592 met its primary objective of demonstrating anaemia correction in treatment-naïve CKD patients not on dialysis as well as maintenance of haemoglobin levels and anaemia correction in patients on dialysis. FG-4592 has demonstrated this efficacy combined with an acceptable safety profile in clinical trials, and has been shown to achieve anaemia correction in the absence of intravenous iron supplementation.

The companies plan to undertake an extensive FG-4592 phase III development programme for the US, and to initiate phase III trials in China, with anticipated regulatory filings in China in 2015 and in the US in 2017.

AstraZeneca will pay FibroGen committed upfront and subsequent non-contingent payments totalling $350 million, as well as potential future development related milestone payments of up to $465 million, and potential future sales related milestone payments in addition to tiered royalty payments on future sales on FG-4592 in the low 20% range. Additional development milestones will be payable for any subsequent indications which the companies choose to pursue.

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AstraZeneca will be responsible for the US commercialisation of FG-4592, with FibroGen undertaking specified promotional activities in the ESRD segment in this market. The companies will also co-commercialise FG-4592 in China where FibroGen will be responsible for clinical trials, regulatory matters, manufacturing and medical affairs, and AstraZeneca will oversee promotional activities and commercial distribution.

Pascal Soriot, Chief Executive Officer, AstraZeneca, said: “Our collaboration with FibroGen on FG-4592 is an important addition to AstraZeneca’s growing late-stage portfolio in cardiovascular and metabolic disease, one of our core therapy areas. We know from our research into complications of renal disease that anaemia continues to be a challenge for patients with chronic kidney disease, due in part to the inconvenience and complexity of existing injectable and intravenous therapies and the safety concerns associated with them. The science behind this compound is compelling. Through our collaboration with FibroGen we aim to offer a first-in-class, convenient treatment option for doctors and patients.”

Thomas B. Neff, Chief Executive Officer, FibroGen, said: “FG-4592 has the potential to offer anaemia patients an oral therapy that provides coordinated erythropoiesis, that increases natural erythropoietin within the normal physiological range, and that is effective without intravenous iron supplementation and without an increased risk for hypertension. We are especially pleased that AstraZeneca will share our commitment to making China the first-to-launch country for FG-4592 and join our effort to bring important innovation in anaemia therapy to CKD and ESRD patients in the US and other countries. This agreement secures proper development and commercialisation resources for FG-4592, and ensures US clinical trial efforts are fully funded.”

– ENDS –

NOTES TO EDITORS

About chronic kidney disease and anaemia

Diabetes, high blood pressure, and other conditions can cause significant damage to the kidneys. If left untreated, those can result in chronic kidney disease and progress to kidney failure. Such deterioration can lead to patients needing a kidney transplant or being placed on dialysis to remove excess fluid and toxins that build up in the body. The progression of CKD also increases the prevalence of anaemia, a condition associated with having fewer of the red blood cells that carry oxygen through the body, and/or lower levels of haemoglobin, the protein that enables red blood cells to carry oxygen. As haemoglobin falls, the lower oxygen-carrying capacity of an anaemic patients’ blood results in various symptoms including fatigue, loss of energy, breathlessness, and angina. Anaemia in CKD patients has been associated with increased hospitalisation rates, increased mortality, and reduced quality of life.

CKD is a worldwide critical healthcare problem that affects millions of people and drives significant healthcare cost. In the US, prevalence of CKD has increased dramatically in the past

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20 years, from 10% of the adult population (or approximately 20 million US adults) as stated in the National Health and Nutrition Evaluation Survey (NHANES) 1988-1994, to 15% (or approximately 30 million adults) in NHANES 2003-2006. In 2009, total Medicare costs for CKD patients were $34 billion. China has an estimated 125 million CKD patients, or 5 times the number of CKD patients in the US [Lancet April 2012].

About FG-4592

FG-4592 is an orally administered small molecule inhibitor of hypoxia-inducible factor (HIF) prolyl hydroxylase activity, in development for the treatment of anaemia in patients with chronic kidney disease (CKD). HIF is a protein transcription factor that induces the natural physiological response to conditions of low oxygen, “turning on” erythropoiesis (the process by which red blood cells are produced) and other protective pathways. FG-4592 has been shown to correct anaemia and maintain haemoglobin levels without the need for supplementation with intravenous iron in CKD patients not yet receiving dialysis and in end-stage renal disease patients receiving dialysis. An Independent Data Monitoring Committee has found no signals or trends to date to suggest that treatment with FG-4592 is associated with increased risk of cardiovascular events, thrombosis, or increases in blood pressure requiring initiation or intensification of antihypertensive medications.

Under a licensing agreement between FibroGen, Inc. and Astellas Pharma Inc., Astellas is developing FG-4592 for the treatment of anaemia in CKD and ESRD patients in Europe, Japan, the Commonwealth of Independent States, the Middle East, and South Africa.

About FibroGen

FibroGen, Inc., is a privately-held biotechnology company focused on the discovery, development, and commercialization of therapeutic agents for treatment of fibrosis, anaemia, cancer, and other serious unmet medical needs. FibroGen’s FG-3019 monoclonal antibody is in early-stage clinical development for treatment of idiopathic pulmonary fibrosis and other proliferative diseases, including pancreatic cancer and liver fibrosis, and FG-4592 is a small molecule inhibitor of hypoxia-inducible factor (HIF) prolyl hydroxylase currently in clinical development for the treatment of anaemia. FibroGen is also currently pursuing the use of proprietary recombinant human type III collagens in synthetic corneas for treatment of corneal blindness. For more information please visit: www.fibrogen.com

About AstraZeneca

AstraZeneca is a global, innovation-driven biopharmaceutical business that focuses on the discovery, development and commercialisation of prescription medicines, primarily for the treatment of cardiovascular, metabolic, respiratory, inflammation, autoimmune, oncology, infection and neuroscience diseases. AstraZeneca operates in over 100 countries and its innovative medicines are used by millions of patients worldwide. For more information please visit: www.astrazeneca.com

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Exhibit 23.1

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We hereby consent to the use in this Registration Statement on Form S-1 of FibroGen, Inc. of our report dated June 11, 2014, except for the effects of the reverse stock split described in Note 1 to the consolidated financial statements, as to which the date is November 10, 2014, relating to the consolidated financial statements of FibroGen, Inc., which appears in such Registration Statement. We also consent to the reference to us under the heading “Experts” in such Registration Statement.

/s/ PricewaterhouseCoopers LLP

San Jose, California

November 10, 2014