### UNITED STATES SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

#### FORM 8-K

**CURRENT REPORT** 

Pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934

Date of Report (Date of earliest event reported): February 11, 2016

## FibroGen, Inc.

(Exact name of registrant as specified in its charter)

Delaware (State or other jurisdiction of incorporation) 001-36740 (Commission File Number) 77-0357827 (IRS Employer Identification No.)

FibroGen, Inc. 409 Illinois Street San Francisco, CA 94158

(Address of principal executive offices, including zip code)

(415) 978-1200 (Registrant's telephone number, including area code)

Not Applicable (Former name or former address, if changed since last report.)

Check the appropriate box below if the Form 8-K filing is intended to simultaneously satisfy the filing obligation of the registrant under any of the following provisions:

□ Written communications pursuant to Rule 425 under the Securities Act (17 CFR 230.425)

□ Soliciting material pursuant to Rule 14a-12 under the Exchange Act (17 CFR 240.14a-12)

D Pre-commencement communications pursuant to Rule 14d-2(b) under the Exchange Act (17 CFR 240.14d-2(b))

D Pre-commencement communications pursuant to Rule 13e-4(c) under the Exchange Act (17 CFR 240.13e-4(c))

#### Item 7.01 Regulation FD Disclosure

Beginning February 11, 2016, FibroGen, Inc. (the Company) intends to conduct meetings with existing and prospective investors and analysts in which its corporate slide presentation will be presented. A copy of the presentation materials, including a slide setting forth certain cautionary statements intended to qualify the forward-looking statements therein, is attached as Exhibit 99.1 to this Current Report on Form 8-K and is incorporated herein by reference.

The information in this Item 7.01 is being furnished, not filed, pursuant to Regulation FD. Accordingly, the information in Item 7.01 of this report will not be incorporated by reference into any registration statement filed by the Company under the Securities Act of 1933, as amended, unless specifically identified therein as being incorporated therein by reference. The furnishing of the information in this report is not intended to, and does not, constitute a determination or admission by the Company that the information in this report is material or complete, or that investors should consider this information before making an investment decision with respect to any security of the Company.

#### Item 9.01 Financial Statements and Exhibits.

(d) Exhibits

Exhibit

No. Description

99.1 FibroGen, Inc. Presentation Materials dated February 11, 2016

#### SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the Registrant has duly caused this report to be signed on its behalf by the undersigned hereunto duly authorized.

Dated: February 11, 2016

#### FIBROGEN, INC.

By: /s/ Michael Lowenstein

Michael Lowenstein VP, Legal Affairs

#### INDEX TO EXHIBITS

#### Exhibit No. Description

99.1 FibroGen, Inc. Presentation Materials dated February 11, 2016

# **FIBROGEN**

# **Corporate Presentation**

February 2016

# Forward-Looking Statements

### **FIBROGEN**

This presentation, the accompanying modules, and in each case the oral commentary contain "forward-looking" statements that involve substantial risks and uncertainties. All statements other than statements of historical facts contained in this presentation, the accompanying modules, and in each case the oral commentary, 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 forwardlooking 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 expressions. Forward looking statements appear in a number of places throughout this presentation, the accompanying modules, and in each case the accompanying oral commentary 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 initiate or enroll clinical trials, 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, commercial opportunities, including potential market sizes and segments, 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, including all of the foregoing as it pertains to our collaboration partners AstraZeneca, AB and Astellas Pharma Inc., including cost-sharing, our results of operations, cash needs, financial condition, liquidity, prospects, growth and strategies, the industry in which we operate and the trends that may affect the industry or us.

Forward-looking statements involve known and unknown risks, uncertainties, assumptions and other factors that may cause our actual results, performance or achievements to be materially different from any future results, performance or achievements expressed or implied by the forward-looking statements. Forward-looking statements represent our management's beliefs and assumptions only as of the date of this presentation, the accompanying modules, and in each case the oral commentary. Except as required by law, we assume no obligation to update these forward-looking statements publicly, or to update the reasons why actual results could differ materially from those anticipated in the forward-looking statements, even if new information becomes available in the future.

# **Investment Highlights**

- Roxadustat a novel oral treatment for anemia in Phase 3
  - Targeting the multi-billion dollar global anemia market
  - IP protection expected through 2033 and potentially beyond
  - >1400 subjects evaluated in Ph1 + Ph2; Ph3 to enroll ~ 7500 to 8500 subjects globally
  - Global collaborations: Astellas and AstraZeneca
    - \$2.5 billion in potential payments (~\$818 million received through 9/30/15)
    - · Plus royalties, transfer prices, and clinical development support
    - Regulatory filings anticipated 2016 (China), 2018 (US)
    - Funded through expected global commercialization
- FG-3019 a novel anti-CTGF Ab for treating fibrotic disease
  - Phase 2 in idiopathic pulmonary fibrosis
  - Phase 2 in pancreatic cancer
  - Phase 2 in DMD non-ambulatory
- FG-5200 collagen type III replacement cornea & scaffold for corneal blindness

DMD: Duchenne Muscular Dystrophy

TREAT-NMD is an EU-based network aiming to advance treatments and care for patients with neuromuscular disease; TACT, the TREAT-NMD Advisory Committee for Therapeutics, is an expert multidisciplinary body that provides the neuromuscular community with guidance on advancing new therapies for neuromuscular diseases

# **Our Platforms and Product Portfolio**



# Roxadustat – Recent Highlights

- Global program on schedule to submit regulatory filings in 2016 for China and 2018 for US
- January 2016: DSMB chair reviewed safety data and recommended that studies continue with current protocols
- Target patient enrollment update (FibroGen responsible for 3 of 7 Phase 3 studies)
  - Stretch goal late 2015 one study
  - Base goal March/April 2016 two studies
- Phase 2 completed in Japan
- Development expansion beyond CKD anemia in China

# China Program - Recent Highlights

- Phase 3 clinical trials initiated
  - First patient dosed DD-CKD Q4 2015 (N=300)
  - First patient dosed ND-CKD Q4 2015 (N=150)
- Initial China regulatory submission expected in 2016 rolling review
- Development expansion beyond CKD anemia
  - AZ alignment on China CTA submission plan
    - Myelodysplastic syndromes (MDS) 1H 2016
    - · Chemotherapy-induced anemia (CIA)

# FG-3019 - Recent Highlights

## **FIBROGEN**

- IPF Study 067
  - FG-3019 vs. placebo arms >50% enrolled (target n=90)
  - Expansion of study sites to include countries where approved IPF therapies have not fully penetrated the markets
  - Expanding study to include patients on approved therapy
- Pancreatic cancer Study 069
  - Presentation of preliminary data at ASCO-GI Jan 2016
  - Trial expansion decision to be based on data from up to 42 subjects
- Duchenne Muscular Disease
  - Phase 2 study of FG-3019 in DMD patients first patient dosed Jan 2016
- Liver Fibrosis in NASH
  - Pre-IND meeting with FDA in Oct 2015
  - Assessing trial design and timing

# Q3 2015 Financial Highlights

- \$365.6M of cash, cash equivalents, investments, and receivables on September 30, 2015
- Cap of \$116.5M on FibroGen's funding obligations for roxadustat CKD anemia development (ex-China) met in Q4 2015
- Going forward, now that the cap has been met:
  - Astellas and AstraZeneca will be responsible for funding all roxadustat development in CKD
    - Through launch for all territories ex-China
  - Impact on FibroGen reduction in operating expenses and increase in partner billings to 100% of development costs
    - Largely eliminates roxadustat cash burn ex-China
- Estimated cash balances:
  - \$330M to \$340M year-end 2015
  - \$295M to \$300M year-end 2016 projected

# \$116.5M Cap, 50-50 Roxadustat Development Cost Share Met In Q4 2015

- Before/After Illustration Assuming \$160M total annual roxadustat development expenses (based on Q2/Q3 2015 run rates)
- GAAP OpEx
  - BEFORE: AstraZeneca bills FibroGen for \$40M, or 50% of its \$80M in development expenses
  - AFTER: AstraZeneca pays for all \$80M of their own development expenses; FibroGen operating expenses reduced by \$40M
- Cash Burn
  - BEFORE: FibroGen bills AstraZeneca for \$40M, or 50% of its \$80M in development expenses
  - AFTER: FibroGen bills AstraZeneca 100% of its development expenses, or \$80M; FibroGen billings increase by \$40M
- Net Outcome
  - GAAP Impact \$40M reduction in FibroGen Op Ex
  - Cash Impact FibroGen no longer pays 50% of AstraZeneca expenses; AstraZeneca pays 100% of FibroGen expenses; FibroGen cash burn reduced \$80M per annum





Roxadustat

# Anemia 101



# Roxadustat Activates a Natural Pathway to Increase Red Blood Cell Production

**FIBROGEN** 



<sup>1</sup>HIF-PH - hypoxia-inducible factor prolyl hydroxylase

# Roxadustat Achieves Target Hb within or near Physiologic EPO C<sub>max</sub> Levels

**FIBROGEN** 



<sup>1</sup> C<sub>max</sub> data for roxadustat estimated for a subset of 243 patients who achieved Hb response and were dosed at expected therapeutic doses.

<sup>2</sup> Milledge & Cotes (1985) J Appl Physiol 59:360.

<sup>3</sup> Goldberg et al. (1993), Clin Biochem 26:183, Maeda et al. (1992) Int J Hematol 55:111.

4 Kato et al. (1994) Ren Fail 16:645.

<sup>5</sup> Based on Flaherty et al. (1990) Clin Pharmacol Ther 47:557.

# ESAs Ineffective or Require High Doses in Presence of Inflammation in Preclinical Model

### **FIBROGEN**

### Normal Animals

- Roxadustat Increased Hb
- Aranesp<sup>®</sup> Increased Hb but Reduced Mean Cell Volume (Depletes Iron)
- IV Iron Ineffective



### Anemia of Inflammation

- Roxadustat Increased Hb
- Aranesp<sup>®</sup> or IV Iron Ineffective for Anemia of Inflammation



Model of inflammation using rats challenged with PG-PS, ACD; Klaus, S, et al, Induction of Erythropoiesis and Iron Utilization by FG-4592, Poster Presentation, ASN 2005.

# **Roxadustat Reduces Hepcidin**

### **FIBROGEN**

Decreased Hepcidin Improves Iron Availability and Reduces ESA Resistance

### CKD-DD Patients Previously Treated with EPO and Randomized (Study 040a) (Conversion, ESA Hyporesponders)



# CKD-DD Newly Initiated Dialysis (Study 053)



# Hb Correction and Maintenance by Roxadustat Appear Independent of Inflammation (Study 053)

### **FIBROGEN**

- As shown by CRP (marker of inflammation)
- Hb correction appears independent of inflammatory state
- Dose requirement for Hb maintenance appears independent of inflammatory state
- Greater reduction in hepcidin level in those with higher baseline hepcidin values





# Phase 2 Program Conducted Across Different CKD Populations

<b>FIBRO</b>	Gen
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STUDY		PATIENTS	WEEKS	DOSE LEVELS	TIER WEIGHTS	CONTROL	KEY RESULTS
Placebo-Co							
017	Dose Range Finding, NDD	116	4	4	No	Placebo	<ul> <li>Reduction in Hepcidin</li> <li>Dose-dependent Increase in Hb</li> </ul>
047	Pre-dialysis	91	8	2	3	Placebo	<ul> <li>Encouraging Safety Data</li> <li>Validation of Tier Weight-based Dosing</li> </ul>
ESA-Contro	olled Dialysis Convers	sion					
048	Dialysis (Converted)	96	6	3	3	ESA	<ul> <li>Encouraging Safety Data</li> <li>Successful Conversion from ESA IV &amp; SQ</li> </ul>
040a	Dialysis	60	6	3	No	ESA	<ul> <li>Successful Conversion, Includes ESA Hyporesponsive Patients</li> <li>Dose Dependent Decrease in Hepcidin</li> </ul>
Phase 2b K	ey Proof of Concept S	Studies					
041	Pre-dialysis (Six Correction and Maintenance Dose Cohorts)	145	16 and 24	6	3		<ul> <li>Both tier weight and fixed starting doses can initiate Hb correction</li> <li>Maintained Hb with TIW, BIW, QW</li> <li>Decrease in Blood Pressure Observed (Subgroup)</li> <li>Reduced Total Cholesterol Levels</li> </ul>
040b	Dialysis* (Conversion)	101	19	5	3	ESA	<ul> <li>Maintenance</li> <li>Reduced Total Cholesterol Levels</li> </ul>
053	Dialysis (Newly Initiated)	60	12	1	3		<ul> <li>Oral Iron ≈ IV Iron</li> <li>Oral Iron HD ≈ oral Iron PD</li> </ul>

\* Many patients were ESA hyporesponsive. Higher doses of ESA are generally needed to treat such patients.

# Study 017: Placebo-Controlled Proof of Concept Study in Pre-Dialysis

**FIBROGEN** 

### DESIGN

- Anemic Pre-dialysis Patients not Receiving ESA
- Randomized to Placebo or Roxadustat, BIW or TIW
  - 4-week Dose Ranging Study Evaluating 4 Weight-based Doses
  - Responder = Hb rise ≥1 g/dL

### **OBSERVATIONS**

- Statistically significant, dosedependent Hb increase for all 4 doses and for all assessments from Day 8 (p=0.025) to end of treatment (Day 22 p=0.0001; Day 26-29 p<0.0001)</li>
- 100% Response Rate at Highest Dose
- Hepcidin reduction in 1.5 mg/kg cohort (p=0.048) and in 2.0 mg/kg cohort (p=0.001)

Mean ( $\pm$  SE)  $\Delta$ hb<sub>max</sub> (g/dL)



# Study 047: Placebo-Controlled Study in Pre-dialysis

## **FIBROGEN**

### DESIGN



- Randomized to Placebo or Roxadustat TIW
  - Two Tier Weight-based Doses
  - 8 Weeks Dosing



\* Hb increase ≥ 1 g/dL and Hb ≥11.0 g/dL at end of treatment

Mean (±SE) Hb Change from BL (g/dL)

### OBSERVATIONS

- Statistically Significant, Dose-dependent Hb Increase for Both Cohorts
- 93.1% Hb response rate at highest dose

# Studies 048 and 040a: ESA Comparator Study in Stable Dialysis Patients when Switched from Epoetin α (Conversion)

**FIBROGEN** 



\* % of Patients Maintaining Hb Level No Lower than 0.5 g/dL below Baseline at Both Week 6 and Week 7

# Study 040b: ESA Comparator Study in Stable Dialysis Patients when Switched from Epoetin $\alpha$ (Conversion)

**FIBROGEN** 

----Roxadustat (n=61)



# Study 041: Dose Finding in Pre-dialysis

Different Targets, Different Correction Rates, Single Maintenance Algorithm

**FIBROGEN** 

### DESIGN

- CKD Patients not on Dialysis
- Roxadustat Starting Doses
  - TIW or BIW
  - Tier Weight Dosing: 3 Sizes
- Dose Titration to Achieve Hb
   Dose Adjustment Every 4 Wks
- Maintenance Dosing Upon Achieving Hb 11 g/dL
   TIW, BIW or QW
- Dual Endpoint ∆Hb ≥ 1 and Achieved Hb ≥ 11 g/dL
- 16 or 24 Week Treatment

### **OBSERVATIONS**

- 92% Response Rate
- Correction Achieved and Maintained to Ends of Treatment, Regardless of Starting and Maintenance Dose
- Reduction in Serum Hepcidin at Week 9 vs Baseline, p=0.0003



# Study 053: Roxadustat Corrects Anemia in Newly Initiated Dialysis Patients without IV Iron

**FIBROGEN** 

### DESIGN

- Incident Dialysis (Newly Initiated Dialysis) Patients with Low Hb Levels and not on ESAs
- All Received Roxadustat
- Comparison of Treatment Response Under Different Iron Supplementation Conditions
- HD (Hemodialysis) Randomized to

   No Iron
  - IV Iron
  - Oral Iron
- PD (Peritoneal) Received Oral Iron

#### **OBSERVATIONS**

- Roxadustat Raised Hb as Efficiently with Oral Iron as with IV Iron
- Oral and IV Iron Arms Had Similar Hb Responses in PD and HD
- ≥1 g/dL Hb correction in >90% patients at Week 12



# **Conclusions: Phase 2 Studies**

- **FIBROGEN**
- Evaluated Broad Range of CKD Patient Population: Stable Dialysis, Incident Dialysis and Nondialysis; ESA Hyporesponders
- In Dialysis and Nondialysis: Consistent, Dose-Dependent Hb Response with Roxadustat
- In Nondialysis: Both Tiered and Fixed Dosing Regimens Produced 90% Response Rates and Maintained Stable Hb
- In Nondialysis and Dialysis: Substantial Reduction of Hepcidin Observed in All Cohorts
- In Incident Dialysis: No Increased Level of Roxadustat Dosing Required (Study 053)
- In Dialysis: Oral Iron is Comparable to IV Iron in Achieving and Maintaining Hb Correction with Roxadustat in Patients on Dialysis

# Roxadustat Safety Review

SAFETY OBSERVATIONS IN COMPLETED PHASE 1 & 2 STUDIES Roxadustat Exposure ~1,100 Subjects 16 patients > 1 year 9 patients > 3 years	<ul> <li>No Overall Safety Signal <ul> <li>An independent data monitoring committee reviewed data</li> <li>Frequency and type of AEs expected in CKD patients</li> </ul> </li> <li>No Cardiovascular Signal</li> <li>Lowers Cholesterol Levels</li> <li>No Increase in Blood Pressure</li> <li>Reduction in Blood Pressure at End of TIW Dosing</li> <li>Platelet Reduction in Patients with High Platelet Count</li> <li>No Cardiac Conduction Effect (TQT Study Negative)</li> <li>No Drug Related Renal Toxicity</li> <li>No Liver Safety Signal, No Special Liver Monitoring Requirement in Phase 3</li> </ul>
EVTENON	

EXTENSIVE PRECLINICAL EVALUATION OF CANCER RISK - Carcinogenicity Studies Complete - No Clinical Evidence of Tumor Risk to Date

26

# Roxadustat Submissions for Marketing Approvals: US, Europe, and China

#### Indication

- Treatment of Anemia Associated with Chronic Kidney Disease (CKD) in Patients on Dialysis and Not on Dialysis
- Primary Efficacy Endpoints Based on Hemoglobin (Hb) Measurements
  - Change in Hb from Baseline, or % Hb responders
  - US & EU: pre-specify primary endpoint by region
- Safety Assessment Focused on Cardiovascular Events, Large Phase 3 Program for CKD Anemia
  - Dialysis (DD) in addition to stable dialysis, include incident dialysis, a high-risk population
  - Nondialysis (NDD) first placebo-controlled pivotal study for this population
- ~ 8,000 Subjects in 10 Studies\* (8 ex-China, 2 China)

REGULATORY AUTHORITIES	US	EUROPE	CHINA *
# of P3 Studies to Support Regulatory Approval	7**	6**	2
# of P3 Patients to Support Regulatory Approval	~7,500**	Up to 4,000**	450
Minimum Duration	52+ weeks	36+ weeks	26-52 weeks (100 for 1 yr)
Average Duration	1.3 to 1.5 years	1 year	6-12 months
Estimated Patient Years	~10,000	~4,000	~275
Mandatory Post-Approval Safety Study (China)	None at this time	None at this time	~2,000 patients
Pharma Partners	AstraZeneca	Astellas	AstraZeneca

\* Excludes Japan where Phase 2 studies are being completed and Phase 3 plans will be finalized in 2015.

\*\* Plan to support US regulatory approval with 7 studies (4 DD and 3 NDD), 5 of which (3DD and 2 NDD) will also be used in the European package that contains a total of 6 studies (3 DD and 3 NDD).

	David	less te t Die e							
	Roxac	iustat Pha	ise 3 Pro	ogram				FIB	ROGEN
	STUDY NUMBER	COMPARATOR	RANDOM- IZATION	N	STUDY LOCATIONS	*) CHINA	EUROPE	US	STUDY SPONSOR
		PH	IASE 3 STUDIES	S TO SUPPOR	RT REGULATORY	APPROVA	L		
Sta	able Dialysis								
	CL-613 <sup>1</sup>	Epoetin α/Darbe	376/200/174	750	EU, MEA <sup>3</sup>		36+ wks	52+wks	Astellas
	FG-064 <sup>1</sup>	Epoetin α	1:1	Up to 750	US+/-Global		36+ wks	52+wks	FibroGen
	FG-806	Epoetin α	2:1	300	China	26-52 wks			FibroGen
Inc	ident Dialysi	S							
	FG-063 <sup>1</sup>	Epoetin α	1:1	Up to 750	Global		36+wks	52+ wks	FibroGen
Inc	ident and Sta	able Dialysis							
	AZ-002	Epoetin α	1:1	1425	Global			52+ wks	AstraZeneca
No	n-Dialysis								
	FG-060*	Placebo	2:1	Up to 600	US, LA <sup>2</sup> , APAC <sup>3</sup>		36+ wks	52+ wks	FibroGen
	CL-0608*	Placebo	2:1	450-600	EU, MEA <sup>4</sup>		36+ wks	52+ wks	Astellas
	FG-808	Placebo	2:1	150	China	26-52 wks			FibroGen
	AZ-001	Placebo	1:1	~2,600	Global			52+ wks	AstraZeneca
			EUROP	EAN REIMBU	JRSEMENT STUD	Y			
	CL-0610	Darbepoetin	2:1	570	EU, MEA		36+ wks	N/A	Astellas

<sup>1</sup>Plan to support US regulatory approval with 7 studies (4 DD and 3 NDD), 5 of which (3DD and 2 NDD, highlighted) will also be used in the European package that contains a total of 6 studies (3 DD and 3 NDD) <sup>2</sup>LA - Latin America; <sup>3</sup> APAC - Asia-Pacific; <sup>4</sup> MEA - Middle East & Africa

# Roxadustat Has Potential to Address Unmet Need in Multiple Markets





# Potential Multiple Global, Multi-Billion Dollar Markets for Anemia



# China Opportunity



# China Phase 3 Program



# Corneal Implants – FG-5200 (China)

## **FIBROGEN**





### Proprietary Recombinant Human Type III Collagen

- Integration of Implants with Host Tissue
- Encourages Nerve Regeneration
  - Allows for Clearer Vision and No Rejection

URGENT, SEVERE UNMET MEDICAL NEED	<ul> <li>Approximately 4 to 5 Million Patients with Corneal Blindness in China</li> <li>100,000 New Cases per Year, Approx. 3,000 Corneal Implant Surgeries</li> <li>Cadaver Transplants Very Limited by Cultural Restriction</li> </ul>
PLATFORM TO FOCUS ON CHINA FIRST	<ul> <li>FG-5200 Targets Patients Treatable with Partial Thickness Implants</li> <li>60-month Proof of Concept Data with Prototype in 10 Patients in Sweden</li> <li>Possibility to Address Major Unmet Need – <i>Science Translational Medicine</i></li> <li>Opportunity to Expand Outside China</li> <li>Plan to Meet with CFDA on Clinical Program</li> </ul>

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# Roxadustat Global Partnerships

<b>FIBRO</b>	GEN
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		Astellas	AstraZeneca	2		
	\$ Millions	JAPAN, EU, ETC.	U.S., CHINA, ROW	CASH RECEIVED TO DATE*		
	Equity Investment in FibroGen	\$81	\$20	\$101		
PAYMENTS TO FIBROGEN	Upfront, Non-Contingent	\$360	\$402	\$360 + \$340	China	
	Development & Reg. Milestones	\$543	\$571	\$118	Partnership: 50% Profit Sharing	
	Commercial Milestones	\$15	\$653	\$0	and 50% Development and Launch Cost	
	POTENTIAL TOTAL	\$918 M	\$1,626 M	\$683 M of \$2,544 M	Responsibility	
DEVELOPMENT FUNDING	FibroGen ex-China Costs Capped at \$116.5 M (Cost-Share < 50% of Planned CKD Anemia Development Costs)					
LAUNCH FUNDING	Comme					

# **FIBROGEN**

# FG-3019

Monoclonal Antibody to Connective Tissue Growth Factor (CTGF)

# Central Role of Connective Tissue Growth Factor (CTGF) in Fibrosis

## **FIBROGEN**



### FIBROGEN: SCIENTIFIC LEADERSHIP IN FIBROSIS

- FibroGen's founding focus on the pathophysiology of fibrosis and diseases associated with persistent and excessive scarring
  - FG-3019 is an internally discovered antibody to CTGF

# FG-3019 Improved Fibrosis in Mouse Model and in Human Disease

## **FIBROGEN**

### Radiation-Induced Mouse Lung Fibrosis

#### **Reversal of Fibrosis by Micro-CT Imaging**

#### Phase 2A IPF Clinical Trial





# Phase 2 Dose-Dependent Survival in Advanced Pancreatic Cancer

### **FIBROGEN**

### FG-3019 Combined with Gemcitabine and Erlotinib (n=75)



# Phase 2 Trials in Pancreatic Cancer, DMD and IPF

LOCALLY ADVANCED INOPERABLE PANCREATIC CANCER	Main goal: convert to operable state N=42 Randomization 2:1 up to 6 months of - FG-3019, gemcitabine, nab-paclitaxel - Gemcitabine and nab-paclitaxel Endpoint: complete tumor removal Currently enrolling
DMD •	<ul> <li>Open-label study in non-ambulatory patients</li> <li>Endpoints consistent with recent FDA draft guidelines</li> <li>Primary endpoint: Pulmonary function</li> <li>Secondary endpoints <ul> <li>MRI for muscle fat/fibrosis, cardiac MRI, upper body strength &amp; mobility</li> </ul> </li> <li>Currently enrolling</li> </ul>
IPF	Randomized placebo-controlled clinical trial Naïve n=90; naïve + pirfenidone / nintedanib failures n= up to 46 Evaluating study expansion to include FG-3019 + approved IPF therapy Key endpoints - Pulmonary function: change in FVC from baseline - Fibrosis by HRCT Currently enrolling

# Localized Pancreatic Cancer

- 47,000 new cases of pancreatic cancer per year in U.S.<sup>1</sup>
- 50% of patients with pancreatic cancer have no detectable metastases at presentation
  - 23,500 classified as clinically localized (50%)<sup>1</sup>
  - 8,225 with pancreatic cancer that precludes resection<sup>1</sup>
  - 15,275 with tumors that are potentially resectable<sup>1</sup>
- Differential outcomes and clinical significance of pancreatic resection
  - Non-resectable
    - 50% survive 8 to 12 months post-diagnosis
    - · Few report 5-year survival
    - Similar to metatastatic cases
  - Resectable
    - 50% survive 17 to 27 months post-diagnosis
    - ~20% report 5-year survival

1. Heestand et al. (2015) J Clin Oncol 33:1770-1778.

40

# Preliminary Data from Open-Label Resection Study FIBROGEN

	ІТТ	Still On Treatment	Completed 6- month course of therapy	Re-scored as eligible for resection	R0 (no residual disease)	R1 (microscopic residual disease)
SOC alone (gemcitabine + nab-paclitaxel)	6	2	2 (2 others discontinued due to disease progression)	1	1	-
FG-3019 + SOC	6	2	3 (1 other discontinued due to unrelated SAE)	3	2	1

Presented at ASCO-GI in January 2016

# Preliminary LAPC Data

- Need to see more patient data, but trends are encouraging
- Subjects who failed resection scoring and were deemed inoperable were randomized to two treatment arms: chemotherapy vs. chemotherapy + FG-3019
- In the FG-3019 + chemotherapy treatment arm, the tumors in 3 of the first 4 subjects were converted from inoperable to operable
  - Tumors deemed resectable upon rescoring
  - After surgery, 2 of those 3 subjects had complete tumor removal (R0), while 1 had microscopic tumor remaining (R1)
- In comparison, only 1 of the first 4 subjects receiving chemotherapy alone was considered to have operable cancer and to be a candidate for surgery

# Changes in Tumor Marker CA19.9\*

### **FIBROGEN**



\*Preliminary Data

# Change in Tumor Size (RECIST criteria)\*

### **FIBROGEN**



\*Preliminary Data

# Duchenne Muscular Dystrophy (DMD) and CTGF Blockade

- **FIBROGEN**
- DMD rare hereditary disease: ~1 in 3,500 boys in the US
  - No FDA/EU approved treatment to date
  - Progressive muscle weakness and respiratory failure (age 5-18)
  - DMD leads to muscle fibrosis and loss of muscle function: muscles replaced by fibrotic tissue in advanced disease
- CTGF: Directly impacts not just fibrosis but muscle cell phenotype<sup>1</sup>
  - Strongly associated with fibrosis in skeletal muscle of human muscular dystrophy (MD)
  - Strongly associated with fibrosis in heart of mouse (mdx) MD
  - Induces de-differentiation of skeletal muscle cells
  - Over-expression in normal mice transiently induces features of skeletal MD
  - Reducing CTGF improves mdx mouse MD

<sup>1</sup> Au (2011); Morales (2011); Morales (2013); Pessina (2014); Vial et al (2008)

# FG-3019 Decreased Fibrosis and Increased Muscle Strength in mdx Mice

### **FIBROGEN**





\* p < 0.05 vs Normal \*\* p < 0.05 vs mdx control

Morales et al. Human Molecular Genetics, 2013, Vol. 22, No. 24

FG-3019 fibronectin content/fibrosis in muscle (mdx mouse)



# Decreased CTGF Increased Skeletal Muscle Function in mdx Mice

## **FIBROGEN**

CTGF hemi-zygous or FG-3019-treated mdx mice exhibited increased isometric force





5-min treadmill exercise tolerance test:

 mdx mice treated with FG-3019 stopped fewer times to rest than untreated mice (mdx-control) and were more similar to normal mice

Morales, Hum Mol Genet-Suppl Data (2013)
48

# **FIBROGEN**

# **HIF Research**

# **Targeting Tumor Metastasis**

- Metastasis, the process by which cancer spreads to nearby lymph nodes or distant organs, is a defining feature of cancer.
- Metastasis occurs in tumors of all types but especially in melanoma, lung, breast, ovarian, prostate, and pancreatic cancers.
- Metastases are the major cause of death from cancer, and thus the suppression of metastasis is an urgent therapeutic need.
- The progression from an isolated tumor to disseminated metastatic disease is a multistep process, involving tumor cell invasion from the primary tumor, intravasation, arrest and extravasation of the circulatory system, followed by angiogenesis and growth at a distant site.
- FibroGen is pursuing a class of compounds that have the potential to treat cancer metastasis via a novel mechanism.

# FG-6888 Significantly Reduced Tumor Burden in An Experimental Metastasis Model

**FIBROGEN** 

- The "tail vein" experimental metastasis model is used to evaluate the ability of tumor cells to arrest, extravasate, and grow in various organs following intravascular injection.
- Uses MDA-MB-231-luc <u>human breast tumor cells</u>, engineered to express luciferase for bioluminescence detection *in vivo*
- Female BALB/c nude mice (n=12/group) inoculated with 1 million cells by tail vein injection on Day 0
- Oral daily dosing of 60mg/kg FG-6888 (or vehicle) starting on Day 0 (~1 h before tumor cell injection) and continuing until Day 32
- Lung tumor burden measured on Day 32 by bioluminescence imaging



# FG-6888 Significantly Reduced Tumor Burden in Tail-Vein Model: Dose Response Study

- Female BALB/c nude mice (n=14/group) inoculated with 1 million cells by tail vein injection on Day -3
- Oral daily dosing of 20-80mg/kg FG-6888 (or vehicle) starting on Day 0 (3 days after tumor cell injection) and continuing until Day 32
- Lung tumor burden measured on Day 32 by bioluminescence imaging



52



