

Equity Research

Five Prime Therapeutics, Inc.

FPRX:Q4--Recent Immuno-Onc Deal A Significant Boost For Platform

• **Summary:** On 3/25, FPRX announced Q4 2013 results. The company's clinical programs are progressing on track, with '1039 continuing to enroll patients in the two NSCLC arms and the new mesothelioma study arm ramping; the '008 inflammatory disease program is progressing in ph.I with an RA study expected to begin later this year. We believe that as the company pivots its discovery efforts towards immune-oncology, their efforts have received significant validation through the recently announced discovery partnership with BMS, one of the leaders in immune-oncology therapeutics. We believe FPRX's differentiated discovery platform will continue to generate enthusiasm as we believe it is well positioned to optimize discovery and characterization of novel immune-oncology candidates and generate cash flow for the company as the early clinical assets continue to mature. Adjusting 2014E EPS to -\$0.58 from -\$1.78.

• **Financials:** The company reported Q4 revenues of \$3.8MM, primarily from collaboration funding from its partners GSK and UCB. Cash and equivalents at the end of the quarter were \$75.7MM. While FPRX did not provide detailed 2014 guidance, they expect 2014 cash burn to be less than \$30MM and to end the year with at least \$100MM, which the company believes will be sufficient to fund operations until the end of 2016.

• **Recently-announced cancer immunotherapy collaboration agreement with BMS will explore two immune checkpoint pathways.** The discovery collaboration will be limited to two pathways in the immune checkpoint targets, which we believe are independent of CTLA-4 and PD-1/PDL-1 pathways, and based on management's recent discussions about potential targets, we believe they could include Tim3, LAG-3, VISTA, or B7-H3. We believe the company's differentiated platform is ideal for discovering and characterization of such cell surface protein targets, and given the rich library of well characterized known and novel extracellular proteins we believe the company is well positioned to make additional breakthroughs in discovering novel pathways with potential therapeutic applications in immuno-oncology.

• (Continued on next page)

Valuation Range: \$20.00 to \$22.00

Our valuation range is based on applying a 30x multiple to our 2023 estimated EPS and discounting at 15%, blended with 2.5x multiple of 2023 estimated sales, and discounting 10-12%, plus \$6 for technology/pipeline value. Key risks, in our view, are clinical and regulatory failure of its programs, competition, and financing.

Investment Thesis:

We believe Five Prime's technology platform and biologics stemming from it will drive long-term value.

Outperform / V

Sector: Biotechnology

Market Weight

Earnings Estimates Revised Up

EPS	2013A	2014E		2015E	
		Curr.	Prior	Curr.	Prior
Q1 (Mar.)	NE	\$0.57		NE	
Q2 (June)	NE	(0.37)		NE	
Q3 (Sep.)	(2.74)	(0.38)		NE	
Q4 (Dec.)	(0.43)	(0.38)		NE	
FY	(\$5.26)	(\$0.58)	(1.78)	(\$0.98)	
CY	(\$5.26)	(\$0.58)		(\$0.98)	
FY P/E	NM	NM		NM	
Rev.(MM)	\$14	\$34		\$27	

Source: Company Data, Wells Fargo Securities, LLC estimates, and Reuters
NA = Not Available, NC = No Change, NE = No Estimate, NM = Not Meaningful
V = Volatile, * = Company is on the Priority Stock List

Ticker	FPRX
Price (03/25/2014)	\$18.11
52-Week Range:	\$8-24
Shares Outstanding: (MM)	16.8
Market Cap.: (MM)	\$304.2
S&P 500:	1,865.62
Avg. Daily Vol.:	213,025
Dividend/Yield:	\$0.00/0.0%
LT Debt: (MM)	\$0.0
LT Debt/Total Cap.:	0.0%
ROE:	NM
3-5 Yr. Est. Growth Rate:	NM
CY 2014 Est. P/E-to-Growth:	NM
Last Reporting Date:	03/25/2014
	After Close

Source: Company Data, Wells Fargo Securities, LLC estimates, and Reuters

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All estimates/forecasts are as of 03/26/14 unless otherwise stated.

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Together we'll go far



Company Description:

Five Prime Therapeutics (FPRX), Inc., headquartered in South San Francisco, California, is a biotechnology company focused on discovering and developing protein therapeutic candidates based on its extensive library of 5,600+ extracellular proteins, including ligands and receptors. Its lead development candidate is FP-1039 [ph.I(b)], an FGFR1-targeted ligand trap in development for solid tumors and partnered with GlaxoSmithKline. Behind '1039, its unpartnered pipeline includes FPA008 (ph.I) a monoclonal antibody in development for inflammatory diseases (e.g., rheumatoid arthritis), and FPA144 (preclinical), an antibody for gastric cancer. Beyond its three lead programs, Five Prime has discovery collaborations with GSK for muscle diseases (sarcopenia and cachexia) and respiratory diseases (refractory asthma and COPD) and UCB Pharma for fibrotic-related immunologic and CNS diseases.

Continued from front page

- **'1039 in solid tumors and '008 in RA progressing in the clinic, with '144 on deck to enter the clinic by year-end.** The company reported continued progress in their pipeline programs during the quarter, with '1039 continuing dosing in first-line and second-line NSCLC patients (Arm A and B, respectively) with FGFR1 amplification. And recently, the company announced that partner GSK has initiated the "Arm C" with mesothelioma patients with FGF-1 overexpression. We believe this makes good scientific sense to explore, and note that preclinical data further supporting the rationale of this approach could be presented at AACR. The company has completed a single ascending dose study with '008 and is testing multiple ascending doses in healthy subjects, with plans initiate the RA study in 2H14. The company will explore clinical and radiographic improvements associated with treatment as well as identifying biomarkers to potentially streamline patient selection. The company is currently studying several preclinical models to explore whether '008 could have potential application in other indications such as IPF and lupus nephritis.

Upcoming Milestones

Product	Event	Timeline
FP-1039	Top-line results from ph.Ib study	2H14
	Potential pre-ph.IIb study meeting with FDA	2H14/1H15
	Consider initiating ph.II/III randomized study of SOC +/- '1039 in NSCLC	2015
	Explore studies in other cancer indications (GIST, mesothelioma, GBM, RCC, HCC)	2014/2015
FPA008	Ph.I top-line PK and safety results	end-2014
	Expand ph.I study to include RA patients	2H14
	Introduce SC formulation	2H14/2015
	File IND, initiate ph.II study likely in biologics failures	2015
FPA144	Explore other inflammatory diseases (IPF, lupus nephritis, etc.)	2015
	File IND	4q14
	Initiate ph.I study	end-2014
	Top-line ph.I results	2015

Source: Company reports and Wells Fargo Securities, LLC estimates

Product Pipeline

Product (partner)	Indication/mechanism	Status
FP-1039 (GSK)	Oncology (multiple solid tumors); FGF Ligand Trap	Phase Ib
FPA008	Autoimmune disease; CSF1R antibody	Entering phase I
FPA144	Gastric cancer; FGFR2b antibody	Pre-IND
GSK	Muscle wasting (sarcopenia and cachexia), respiratory (refractory asthma and COPD)	Discovery
UCB	Fibrosis, immunologic, and CNS diseases	Discovery
Multiple candidates	Antibodies and ligand traps vs. cancer, immunotherapy, steroid resistant asthma	Discovery

Source: Company reports and Wells Fargo Securities, LLC

Five Prime Therapeutics, Inc.

Five Prime Therapeutics (FPRX)

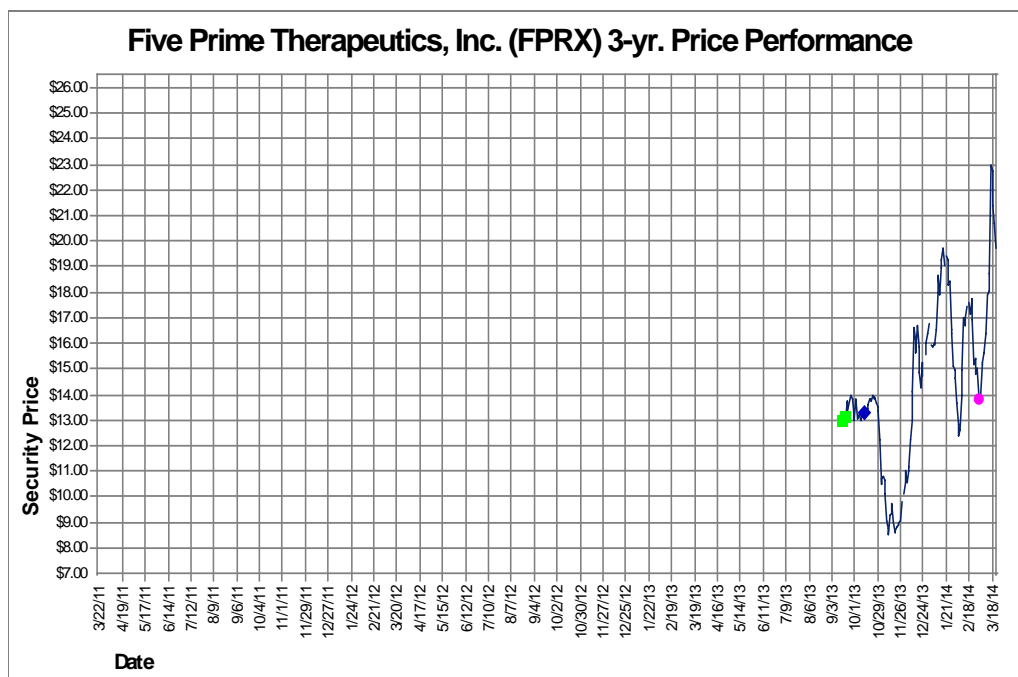
Statement of Operations (Income Statement)

(in thousands except per share amounts)

	2010A	2011A	2012A	2013E	1QE	2QE	3QE	4QE	2014E	2015E	2016E	2017E	2018E	2019E	2020E	2021E	2022E	2023E
Revenues																		
Total Global FP-1039 sales (15-35% prob-weighted by tumor type)																		
Total Global FPA008 sales (20% prob-weighted)																		
Collaborative revenue	\$23,740	\$64,916	\$9,983	\$13,791	\$23,500	\$3,500	\$3,550	\$3,600	\$34,150	\$26,800	\$97,800	\$21,500	\$34,000	\$21,500	\$39,000	\$54,000	\$39,000	\$362,757
FP-1039 (royalties; probability weighted by tumor type)																		\$61,384
FPA008 (royalties; probability weighted)																		\$34,000
Total revenues, net	\$23,740	\$64,916	\$9,983	\$13,791	\$23,500	\$3,500	\$3,550	\$3,600	\$34,150	\$26,800	\$97,800	\$21,500	\$34,000	\$21,500	\$39,000	\$54,000	\$39,000	\$362,757
Expenses																		
Research and development	\$29,417	\$34,039	\$28,778	\$32,785	\$8,239	\$8,403	\$8,571	\$8,743	\$33,956	\$35,654	\$37,437	\$38,934	\$40,491	\$41,706	\$42,957	\$44,246	\$45,573	\$46,941
Selling, general and administrative	\$8,338	\$11,216	\$9,009	\$10,427	\$3,072	\$3,103	\$3,134	\$3,166	\$12,475	\$12,974	\$13,493	\$14,033	\$14,594	\$15,178	\$15,785	\$16,417	\$17,073	\$17,756
Total operating expenses	\$37,755	\$45,255	\$37,787	\$43,212	\$11,311	\$11,506	\$11,706	\$11,908	\$46,431	\$48,628	\$50,930	\$52,967	\$55,086	\$56,884	\$58,742	\$60,663	\$62,647	\$64,697
Operating Income	(\$14,015)	\$19,661	(\$27,804)	(\$29,421)	\$12,189	(\$8,006)	(\$8,156)	(\$8,308)	(\$12,281)	(\$21,828)	\$46,870	(\$1,467)	(\$20,170)	(\$33,555)	(\$17,144)	\$4,291	\$1,697	\$34,926
Interest income	\$58	\$114	\$88	\$129	\$25	\$32	\$30	\$28	\$115	\$114	\$126	\$134	\$108	\$82	\$56	\$50	\$53	\$72
Other income (expense) net	\$491	(\$65)	\$121	\$420	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
(Loss) income before benefit from income taxes	(\$13,466)	\$19,710	(\$27,595)	(\$28,872)	\$12,214	(\$7,975)	(\$8,125)	(\$8,280)	(\$12,166)	(\$21,714)	\$46,997	(\$1,333)	(\$20,062)	(\$33,473)	(\$17,088)	\$4,341	\$1,750	\$34,998
Benefit (expense) from income taxes	\$5	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$350
Net (loss) income	(\$13,461)	\$19,710	(\$27,595)	(\$28,872)	\$12,214	(\$7,975)	(\$8,125)	(\$8,280)	(\$12,166)	(\$21,714)	\$46,997	(\$1,333)	(\$20,062)	(\$33,473)	(\$17,088)	\$4,341	\$1,750	\$35,348
Earnings Per Share (GAAP)	(\$12.22)	\$10.35	(\$23.05)	(\$5.26)	\$0.57	(\$0.37)	(\$0.38)	(\$0.38)	(\$0.58)	(\$0.98)	\$1.90	(\$1.37)	(\$0.86)	(\$1.41)	(\$0.71)	\$0.16	\$0.06	\$1.29
Shares Outstanding (Basic)	1,102	1,152	1,197	5,488	19,185	21,485	21,585	21,685	20,985	22,085	22,485	22,885	23,285	23,685	24,085	24,485	24,885	25,285
Shares Outstanding (Diluted)	1,102	1,904	1,197	6,988	21,385	23,685	23,785	23,885	23,185	24,285	24,685	25,085	25,485	25,885	26,285	26,685	27,085	27,485

Source: Company reports and Wells Fargo Securities, LLC estimates

Required Disclosures



	Date	Publication Price (\$)	Rating Code	Val. Rng. Low	Val. Rng. High	Close Price (\$)
□	9/18/2013		IPO at \$13.00			
	10/14/2013		Abrahams, M.D.			
◆	10/14/2013	13.19	1	17.00	19.00	13.25
◆	3/3/2014	13.96	1	20.00	22.00	13.78

Source: Wells Fargo Securities, LLC estimates and Reuters data

Symbol Key

- ▼ Rating Downgrade
- ▲ Rating Upgrade
- ◆ Valuation Range Change
- ◆ Initiation, Resumption, Drop or Suspend
- ◆ Analyst Change
- Split Adjustment

Rating Code Key

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- SR Suspended
- NR Not Rated
- NE No Estimate

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FPRX: Key risks, in our view, are clinical and regulatory failure of its programs, competition, and financing.

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