



November 8, 2016

**Key Metrics**

PGNX - NASDAQ	\$5.71
Pricing Date	Nov 8 2016
Price Target	\$11.00
52-Week Range	\$8.15 - \$3.61
Shares Outstanding (mm)	70.0
Market Capitalization (mm)	\$399.7
3-Mo Average Daily Volume	1,150,880
Institutional Ownership	86%
Book Value/Share	\$1.05
Price/Book	5.4x

**EPS FY: December**

	2015A	Prior 2016E	Curr. 2016E	Prior 2017E	Curr. 2017E
1Q-Mar	(0.15)	--	(0.18)A	--	--
2Q-Jun	(0.17)	--	(0.08)A	--	--
3Q-Sep	(0.14)	0.54E	0.52A	--	--
4Q-Dec	(0.10)	0.16E	(0.20)E	--	--
FY	(0.56)	0.13E	0.06E	(0.24)E	(0.23)E
P/E	NM		95.17x		NM

**REVENUE**

	2015A	Prior 2016E	Curr. 2016E	Prior 2017E	Curr. 2017E
1Q-Mar	0.2	--	2.5A	--	--
2Q-Jun	1.9	--	8.5A	--	--
3Q-Sep	1.4	55.1E	53.9A	--	--
4Q-Dec	5.1	--	6.6E	--	--
FY	8.7	72.6E	71.4E	--	59.2E

**Company Description:**

Progenics Pharmaceuticals, Inc. is engaged in developing medicines and other products for targeting and treating cancer. The Company's products in development include therapeutic agents designed to target cancer and imaging agents, which focuses on enabling clinicians and patients to accurately visualize and manage their diseases.

## Progenics

### Rating: Buy

**3Q16: Relistor paves way for Pipeline. Reiterate \$11****Price Target****Investment Highlights:**

PGNX reported 3Q revenues of \$53.9 million and EPS of 52 cents versus consensus revenues and EPS of \$53.6 million and 55 cents, respectively. 3Q revenues were driven by the approval (which triggered a \$50 million milestone by Valeant Pharmaceuticals) and US launch of oral Relistor for OIC in adults with chronic non-cancer pain in July and September, respectively. Progenics received \$3.3 million in Relistor royalties from \$22.1 million in Valeant sales of Relistor (oral and SUBQ). Progenics also announced a Relistor royalty-based loan that has brought PGNX cash to \$98.9 million, which we expect will allow PGNX to fund Azedra to initial commercialization and develop its prostate assets through 2018. PGNX continues to expect Azedra top-line data in 1H17, and we view the trial as substantially de-risked and expect a late 2017 approval due to Breakthrough Designation status, which would make Azedra the first approved treatment for malignant or recurrent pheochromocytoma and paraganglioma in the US – we believe Azedra represents about a \$150 million market opportunity. Re-iterate our Buy rating and \$11 TP.

**Discussion:**

**Quarterly results:** Relistor (Subq and Oral) net sales for the 3Q16 totaled \$22.1 million, representing \$3.3 million in royalty revenue for Progenics. This compares to \$2.4 million in 2Q16 (from \$15.9 million Relistor revenues) and \$1.2 million in 3Q (from \$8.1 million Relistor revenues) in the year ago quarter. The company also received a \$50 million milestone payment on July 2 relating to the approval of oral Relistor. Valeant has decided to price Relistor at a premium to Astra Zeneca's Movantic, given its advantages of PRN dosing and rapid onset (1 hour versus 6-8 hours). One dose consisting of three 150mg pills is priced at \$50, and on average we assume patients will need 4.5 doses a week, which works out to \$225 a week and \$900 a month—about 3x the price of Movantic (but below the price of SUBQ). We think a premium is justified and provides greater pricing flexibility should adjustments be needed down the road. This quarter R&D expense increased to \$9.8 million from \$8.0 million in 2Q, while SG&A expense increased to \$7.8 million from \$6.2 million last quarter.

**Relistor Royalty-based Loan Provides Cash for Azedra:** Relistor announced a \$50 million loan agreement with HealthCare Royalty Partners, backed by future royalties of Relistor sales. The loan terms include \$50 million at a 9.5% per annum interest rate, with three parts: 1) royalty payments through December 31, 2017 will be applied solely to the payment of interest in the loan, with any excess to be retained by Progenics 2) 50% of Relistor royalty payments from Jan 1, 2018 through June 30, 2021, in excess of accrued interest for the quarter will be used to repay the principal of the loan, and 3) all of Relistor royalty payments received will be used to repay the interest and outstanding principal balance until the balance is fully repaid, with the loan maturing on June 30, 2025.

We expect this loan allows Progenics to have a cash balance large enough to launch Azedra (assuming a positive outcome, though we view Azedra as largely de-risked) and advance its portfolio of prostate cancer imaging agents and therapeutics, including 1404, PyL, and 1095. Progenics has about \$98.9 million in cash, with a burn rate of approximately \$10 million per month – enough for its oncology pipeline, given the upcoming Relistor milestone payments that we expect from 2017 to 2020.

(Continued on the next page.)

The Disclosure section may be found on pages 4- 5 of this report.

**Pipeline Update:** The FDA approved oral Relistor for OIC in adults with chronic noncancer pain in July 2016. VRX recently launched oral Relistor in September, and 4Q16 will represent the first full quarter of oral Relistor sales, which should provide more color on the uptake and commercial efforts of Valeant. Progenics and Valeant have not provided detail regarding discounting strategy or commercialization in Europe.

We continue to view Azedra as a derisked asset. Progenics completed enrollment in December 2015 for its 68-patient pivotal Phase 2b trial, and the company expects top-line data in the first quarter of 2017. If the trial meets the endpoints of the Special Protocol Assessment (SPA), the company plans to file a NDA submission in the first half of 2017, and approval could happen by the end of 2017. We are assuming revenues begin in 2018, and expect the commercial team to be only 10 people as the majority of patients are treated in 15 centers across the US.

Progenics is developing PSMA-targeted imaging agents, including 1404 (a SPECT/CT imaging agent) and PyL (PET/CT imaging agent). 1404 is enrolling its Pivotal Phase 3 study, and will enroll up to 450 patients with newly-diagnosed or low-grade prostate cancer who are candidates for active surveillance. The 1404 trial has a low hurdle targeting/looking only for 60% specificity/sensitivity, as an improved guide for biopsy to confirm cancer. This will position SPECT/CT as a lower cost, but higher sensitivity/specificity alternative to the 1.25 million MRI's performed annually. The company expects for an interim analysis for 150 patients by year end to assess futility and evaluate the need for trial design change. Progenics is on track to initiate a 300 patient Phase 2/3 trial of PyL imaging agent by year end to assess the accuracy of PyL. The company is initiating a 40 patient Phase 1 study for radiopharmaceutical 1095 in metastatic prostate cancer by 4Q16.

Progenics Pharmaceuticals, Inc. Income Statement Fiscal Year ends December (in 000, except per share items)																	
	2010A	2011A	2012A	2013A	2014A	1Q15	2Q15	3Q15	4Q15	2015A	1Q16A	2Q16A	3Q16A	4Q16E	2016E	2017E	2018E
Collaborative revenue	1,413	76,805	8,525	1,595	41,196	65	145	183	1,562	1,955	242	6,073	50,523	125	56,963	25,500	50,500
Gov't grants & contracts	4,573	4,810	560	344	80	9	19	5	80	113	19	23	8	20	70	50	30
Azedra sales																0	14,819
Product royalties	1,966	3,181	4,963	5,923	3,101	174	1,773	1,208	3,453	6,608	2,189	2,380	3,319	6,467	14,355	33,611	60,852
<b>Total revenue</b>	<b>7,952</b>	<b>84,796</b>	<b>14,048</b>	<b>7,862</b>	<b>44,377</b>	<b>248</b>	<b>1,937</b>	<b>1,396</b>	<b>5,095</b>	<b>8,676</b>	<b>2,450</b>	<b>8,476</b>	<b>53,850</b>	<b>6,612</b>	<b>71,388</b>	<b>59,161</b>	<b>126,201</b>
COGS																0	2,667
R&D expense	50,640	53,183	31,840	33,903	27,752	6,463	6,362	6,766	7,941	27,532	9,149	7,988	9,827	11,301	38,265	47,831	52,614
G&A expense	22,832	18,248	14,706	14,809	15,829	3,893	6,798	4,235	4,460	19,386	6,017	6,199	7,820	8,055	28,091	32,304	33,919
License fees - R&D	1,270	578	1,170	567	348	(16)	178	159		321					0		
Royalty expense	241	405	499	624	507	42	178	123		343					-		
Depreciation & amortization	2,853	2,066	1,324	939	(3,429)	132	129	137		398	0	0	0	0	-	0	0
<b>Total operating expenses</b>	<b>77,836</b>	<b>74,480</b>	<b>49,539</b>	<b>50,842</b>	<b>41,007</b>	<b>10,514</b>	<b>13,645</b>	<b>11,420</b>	<b>12,394</b>	<b>47,980</b>	<b>15,166</b>	<b>14,187</b>	<b>17,630</b>	<b>19,339</b>	<b>66,322</b>	<b>80,136</b>	<b>86,534</b>
<b>Operating income</b>	<b>(69,884)</b>	<b>10,316</b>	<b>(35,491)</b>	<b>(42,980)</b>	<b>3,370</b>	<b>(10,266)</b>	<b>(11,708)</b>	<b>(10,024)</b>	<b>(7,299)</b>	<b>(39,304)</b>	<b>(12,716)</b>	<b>(5,711)</b>	<b>36,220</b>	<b>(12,727)</b>	<b>5,065</b>	<b>(20,975)</b>	<b>39,667</b>
Total other income/expense net	64	65	60	46	51	12	11	10	19	52	43	54	79	13	50	50	100
Net interest income/expense	0	0	-	-	-					-				(1,188)	(1,188)	4,750	4,750
<b>Income before tax</b>	<b>(69,820)</b>	<b>10,381</b>	<b>(35,431)</b>	<b>(42,934)</b>	<b>3,421</b>	<b>(10,254)</b>	<b>(11,697)</b>	<b>(10,014)</b>	<b>(7,280)</b>	<b>(39,252)</b>	<b>(12,673)</b>	<b>(5,657)</b>	<b>36,299</b>	<b>(13,902)</b>	<b>3,928</b>	<b>(16,175)</b>	<b>44,517</b>
Income taxes (benefit)	95	-	-	(362)	(989)				(133)	(133)					-	-	-
Income tax percent			0%	1%	-29%					0%					0%	0%	0%
<b>Net income</b>	<b>(69,725)</b>	<b>10,381</b>	<b>(35,431)</b>	<b>(42,572)</b>	<b>4,410</b>	<b>(10,254)</b>	<b>(11,697)</b>	<b>(10,014)</b>	<b>(7,147)</b>	<b>(39,119)</b>	<b>(12,673)</b>	<b>(5,657)</b>	<b>36,299</b>	<b>(13,902)</b>	<b>3,928</b>	<b>(16,175)</b>	<b>44,517</b>
<b>EPS basic</b>	<b>(2.14)</b>	<b>0.31</b>	<b>(1.02)</b>	<b>(0.76)</b>	<b>0.06</b>	<b>(0.15)</b>	<b>(0.17)</b>	<b>(0.14)</b>	<b>(0.10)</b>	<b>(0.56)</b>	<b>(0.18)</b>	<b>(0.08)</b>	<b>0.52</b>	<b>(0.20)</b>	<b>0.06</b>	<b>(0.23)</b>	<b>0.63</b>
<b>EPS diluted</b>	<b>(2.14)</b>	<b>0.31</b>	<b>(1.02)</b>	<b>(0.76)</b>	<b>0.06</b>	<b>(0.15)</b>	<b>(0.17)</b>	<b>(0.14)</b>	<b>(0.10)</b>	<b>(0.56)</b>	<b>(0.18)</b>	<b>(0.08)</b>	<b>0.52</b>	<b>(0.20)</b>	<b>0.06</b>	<b>(0.23)</b>	<b>0.63</b>
Basic shares outstanding	32,590	33,375	34,754	55,798	68,185	69,637	69,647	69,705	69,874	69,716	69,946	69,947	70,013	70,083	69,997	70,347	70,699
Diluted shares outstanding	32,916	33,494	34,754	55,798	68,243	72,964	72,347	72,407	72,583	72,575	69,946	69,947	70,297	70,367	70,139	70,490	70,842
	0		4%	61%	22%	0.1%	0.01%	0.08%	0.24%	2%	0.1%	0.00%	0.09%	0.10%	-3%	0.5%	0.5%

Source: Company reports, Aegis Capital Corp. estimates

## **Required Disclosures**

### **Price Target**

\$11

### **Valuation Methodology**

**Our Target Price is \$11** based on DCF valuation with a discount rate of 10% and a multiple of 6 based on Progenics's 2018 EBITDA.

### **Risk Factors**

This represents a speculative investment only for those willing to take on risk. Risks to the achievement of our target price include clinical, regulatory, financing, competitive risks, as well as stock price volatility.

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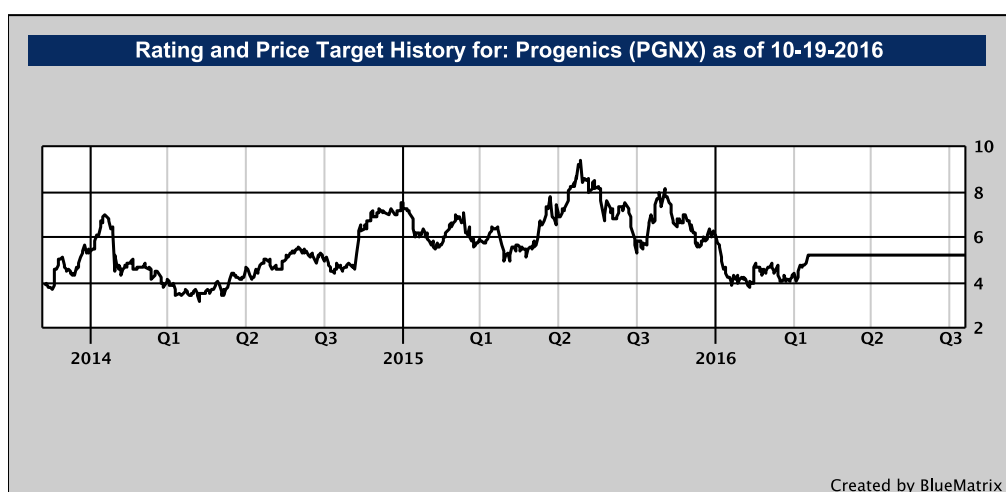
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Rating	Investment Banking Services/Past 12 Mos.	
	Percent	Percent
BUY [BUY]	87.36	43.42
HOLD [HOLD]	12.64	36.36
SELL [SELL]	0.00	0.00

#### Meaning of Ratings

- A) A Buy rating is assigned when we do not believe the stock price adequately reflects a company's prospects over 12-18 months.
- B) A Hold rating is assigned when we believe the stock price adequately reflects a company's prospects over 12-18 months.
- C) A Sell rating is assigned when we believe the stock price more than adequately reflects a company's prospects over 12-18 months.

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