Ardelyx, Inc. (ARDX)

Initiating Coverage at Market Outperform; When a Blockage in the Gut is a Good Thing

MARKET DATA

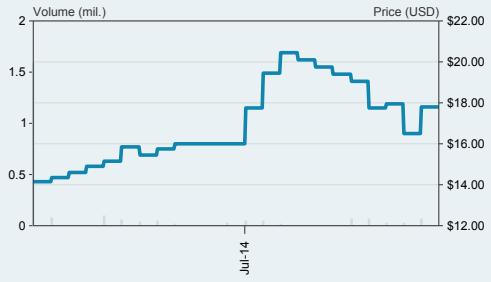
Price	$17.75
52-Week Range:	$14.05 - $21.60
Shares Out. (M):	17.1
Market Cap ($M):	$303.5
Average Daily Vol. (000):	65.0
Cash (M):	$33
Cash/Share:	$1.95
Enterprise Value (M):	$310
LT Debt (M):	$0

Source: Thomson Reuters and JMP Securities LLC

FY DEC		2013A	2014E	2015E
Revenue ($M)	1Q	--	$8.6	$13.3
	2Q	--	$11.5	$34.0
	3Q	--	$12.1	$14.7
	4Q	--	$12.6	$40.6
	FY	**$28.9**	**$44.8**	**$102.6**
EPS	1Q	--	($0.23)	($0.77)
	2Q	--	$0.11	($0.85)
	3Q	--	$0.07	($0.94)
	4Q	--	$0.04	($1.03)
	FY	**($0.50)**	**$0.02**	**$2.24**
	P/E	NM	NM	7.9x

Source: Company reports and JMP Securities LLC

STOCK PRICE PERFORMANCE



MARKET OUTPERFORM | Price: $17.75 | Target Price: $26.00

INVESTMENT HIGHLIGHTS

Initiating coverage of Ardelyx, the industry leader in the development of non-absorbed drugs, with a Market Outperform rating and $26 price target based on the synthesis of our DCF and SOTP valuation analyses. The company completed its IPO transaction on June 19, 2014. Ardelyx is utilizing its first-in-class chemistry to discover and develop non-absorbed, small molecule compounds that block the absorption of a variety of ions (e.g., sodium, potassium, calcium) across the lumen of the gastrointestinal (GI) tract for the treatment of cardiorenal, GI, and metabolic diseases. The foundation of Ardelyx is built upon the discoveries of co-founder and Chief Scientific Officer, Dominique Charmot, PhD, a successful entrepreneur in the biotech space who founded Ilypsa, a company that developed a non-absorbed phosphate binder that was eventually sold to Amgen for $420MM in 2007.

Unique mix of novel chemistry and gut biology. Ardelyx has spent most of its existence optimizing a chemistry platform to create compounds that remain in the gut with minimal systemic absorption. This has enabled it to create multiple clinical development candidates in a relatively short period of time, as much of the ADME process - absorption, distribution, metabolism, and excretion - is reduced or eliminated by features of the company's compounds. The benefit of this approach is a greater number of potential development candidates and probability of success compared to those focused on systemically absorbed small molecules. We believe this time and capital-efficient model should produce above-average returns to shareholders.

Ardelyx is unique in its focus upon the gut as drug target "white space". Ardelyx reports that it has identified nearly 4,000 unique proteins in the gut that may be suitable to drug targeting. Given the company's successful target identification track record to date, it is our view that Ardelyx will continue to reap benefits based on its strategic decision to focus on this promising area. Amongst the large disease categories, for which gut-specific receptors, ion channels, enzymes, and other targets may play a role are cardio-renal, gastrointestinal, and metabolic diseases.

Large disease indications with unmet need. The initial portfolio of target opportunities being exploited by Ardelyx includes sodium, phosphorous, potassium, and chloride, along with manipulation of the receptors for GLP-1 and -2 (glucagon-like peptide-1 and -2). Its lead program, tenapanor, inhibits the NH3 transporter responsible for the transport of sodium across the gut and is intended for use in patients with end stage renal disease (ESRD) and chronic kidney disease (CKD). Tenapanor has also been shown to have the additional benefit of blocking phosphorous absorption. Tenapanor has been administered to more than 700 patients/subjects and has shown an encouraging safety and efficacy profile. The molecule has been licensed to AstraZeneca in a lucrative financial relationship.

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Management horsepower. It is, perhaps, no coincidence that the initial therapeutic area upon which Ardelyx has trained its focus is renal disease. As we mentioned, co-founder, Dominique Charmot, has already created significant value in the renal space via the co-founding and sale of Ilypsa to Amgen. Mike Raab, President and CEO, was Senior VP, Therapeutics and General Manager of the Renal Division at Genzyme (now part of Sanofi, SNY, NC) for approximately 12 years. Other members of the management team have experience tracing back to GelTex, a company acquired by Genzyme for its products, RenaGel and Renvela. This rare combination of proven scientific and commercial skill is rare in companies the size of Ardelyx, and we believe it is a key ingredient for the company's ultimate success.

Phase IIb study results of the use of tenapanor for IBS-C during 4Q14 key to near-term value creation. Tenapanor has also shown the ability to improve pain and bowel function in a Phase IIa clinical trial of patients with IBS-C. Results of a Phase IIb study of three doses of tenapanor vs. placebo should be available later this year. We note that the endpoint used in both studies is identical to that used by Ironwood Pharmaceuticals (IRWD, NC), a company valued at roughly $2 billion, for its drug, Linzess for IBS-C. We recommend that investors build positions in advance of these data, while we also remain optimistic over the long term.

INVESTMENT THESIS

Companies in the biotechnology field often search for one of two things: expertise in a scientific platform (e.g., novel small molecule chemistry, antibody technology, antisense or RNAi) or a specific area of biology (e.g., hematologic malignancy, CNS, cardiovascular disease). Rare is the company that can combine the two. That is, however, the story of Ardelyx. Ardelyx was conceived from the outset as a company focused exclusively upon the development of non-absorbed, gut-specific, small molecule drugs directed at the untapped landscape of promising drug targets within the gut lumen. In this regard, Ardelyx is unique in both aspects of its business model. When combined with the business acumen of the management team in renal disease and other chronic conditions of the gut where unmet need is still the rule, it adds up to a powerful investment opportunity indeed. We also have a high degree of confidence in management, with a particular emphasis on co-founder and CSO, Dominique Charmot, PhD, and President and CEO, Mike Raab. We believe the pair brings together the uncommon combination of scientific insight and commercial skills necessary for success in renal disease and beyond. The recent capital raise (~$61MM IPO), along with collaboration fees and milestones received from development and marketing partners, AstraZeneca and Sanofi, place Ardelyx in an enviable position for success, in our view.

FIGURE 1. Ardelyx Development Pipeline

PROGRAM	INDICATION	Research	Phase 1	Phase 2	Status	Development and Commercial Rights
				2a 2b		
Tenapanor *(NHE3 Inhibitor)*	ESRD-Pi				Phase 2b data in 1H:2015	AstraZeneca • $870mm total potential deal size including $35mm up front and $237.5mm development milestones; tiered royalties • AZ funds and is responsible for all R&D • Ardelyx has right to co-promote in U.S.
	IBS-C				Phase 2b data in 4Q:2014	
	CKD				Phase 2a data in 2H:2015	
RDX002 *(NaP2b Inhibitor)*	ESRD-Pi				Research	SANOFI • $198mm total potential deal size; tiered royalties • Sanofi funds and is responsible for all R&D • Ardelyx has right to co-promote in United States
RDX009 *(TGR5 agonist)*	IBD				Research	ARDELYX
RDX013(K+ channel modulator)	Hyper-kalemia				Research	ARDELYX
RDX020 (Cl- channel modulator)	Fluid Overload				Research	ARDELYX

Source: Ardelyx company reports

FIGURE 2. Upcoming Catalysts

Timing	Program	Catalyst
4Q14	Tenapanor	Ph. IIB IBS-C results expected
1H15	Tenapanor	Ph. IIB ESRD-Pi results expected (potential $20MM milestone payment)
2H15	Tenapanor	Ph. IIA CKD-T2DM results expected
2H15	Tenapanor	Initiation of Ph. III trial in ESRD-Pi (triggers $50 million milestone payment)

Source: Company presentations

VALUATION

We derive our twelve-month price target of $26 based on the synthesis of a discounted cash flow (DCF) analysis and our sum-of-the-parts analysis (Figure 3).

FIGURE 3. Twelve-month Price Target Synthesis

Synthesis of Valuation Approaches	
Approach	**Valuation**
DCF Analysis	$ 24.03
SOTP	29.90
Price Target	**$ 26.00**

Source: JMP Securities LLC

Discounted Cash Flow Analysis

Our DCF valuation projects royalty income on worldwide commercial sales of tenapanor across all indications, while subtracting projected operating expense and tax. Net cash flows to the company are discounted to present values by 30% which, in our view, represents an appropriate risk-adjusted, discount factor for Phase II-ready asset with demonstrated clinical activity. A terminal value for the company, calculated by applying a terminal growth rate of 0% to 2025 cash flow estimates, was similarly discounted to present day. Present values of free cash flows, together with the terminal value, were added to arrive at a residual value for the company, to which cash on hand and long-term debt were added and subtracted, respectively. We thereby arrive at an equity valuation of $410MM. Dividing this amount by our estimated 2014 year-end outstanding share count of 17.1MM shares, we derive a per share valuation of $24.03. Our DCF assumptions are detailed in Figure 4.

FIGURE 4. Discounted Cash Flow Analysis

Discount Cash Flow Model	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Sales and Royalty Revenue	-	-	-	-	2.9	28.8	97.6	192.3	272.2	333.4	378.9	412.1
License and milestone revenue	22.0	25.0	13.3	1.3	-	-	-	-	-	-	-	-
Milestone Revenue	-	45.0	75.0	65.0	117.5	130.0	225.0	106.8	70.0	-	-	-
Collaboration revenue	22.8	32.6	35.9	46.6	65.3	78.3	86.1	90.4	90.4	90.4	90.4	90.4
Total Revenues	44.8	102.6	124.2	112.9	185.7	237.1	408.8	389.5	432.7	423.8	469.3	502.5
R&D expenses	35.4	51.9	63.5	83.8	99.6	106.1	114.9	121.1	128.7	138.3	150.3	165.2
R&D as % of revenues	*79.2%*	*50.6%*	*51.1%*	*74.2%*	*53.6%*	*44.8%*	*28.1%*	*31.1%*	*29.8%*	*32.6%*	*32.0%*	*32.9%*
SG&A expenses	6.4	9.4	12.2	14.6	16.1	17.7	19.4	21.4	23.5	25.9	28.4	31.3
SG&A as % of sales	*14.3%*	*9.1%*	*9.8%*	*12.9%*	*8.6%*	*7.4%*	*4.8%*	*5.5%*	*5.4%*	*6.1%*	*6.1%*	*6.2%*
Operating Income (EBIT)	**2.9**	**41.3**	**48.6**	**14.5**	**70.0**	**113.3**	**274.4**	**247.1**	**280.4**	**259.6**	**290.6**	**306.0**
% Margin					*2397.7%*	*393.1%*	*281.1%*	*128.5%*	*103.0%*	*77.9%*	*76.7%*	*74.3%*
Taxes			-	-	-	-	13.7	24.7	56.1	90.9	101.7	107.1
Tax Rate	**0.0%**	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*5.0%*	*10.0%*	*20.0%*	*35.0%*	*35.0%*	*35.0%*
After-Tax Operating Income	**2.9**	**41.3**	**48.6**	**14.5**	**70.0**	**113.3**	**260.7**	**222.3**	**224.4**	**168.8**	**188.9**	**198.9**
% Margin			*39.1%*	*12.8%*	*37.7%*	*47.8%*	*63.8%*	*57.1%*	*51.9%*	*39.8%*	*40.2%*	*39.6%*
Discounting Year	-	1.0	2.0	3.0	4.0	5.0	6.0	7.0	8.0	9.0	10.0	11.0
Discount Factor	1.00	1.30	1.69	2.20	2.86	3.71	4.83	6.27	8.16	10.60	13.79	17.92
PV	2.9	31.8	28.7	6.6	24.5	30.5	54.0	35.4	27.5	15.9	13.7	11.1
Terminal Value										**Terminal Value**		37.0

Residual Value of CF	**$**	**320**
+ Cash and Cash Equivalents	**$**	**91**
Value of Company	**$**	**410**
- LT Debt		
Value of Equity	**$**	**410**
Price/share=	**$**	**24.03**

Assumptions

Blended Discount Rate	30.0%
Cash and Cash Equivalents (YE 2014 estimate	$ 90.6
Terminal Growth Rate 2025	0%
Shares Outstanding (YE 2014 estimate)	17.1

Source: JMP Securities LLC

Sum-of-the-Parts-Valuation

In valuing ARDX shares based on a sum-of-the-parts (SOTP) analysis, we projected tenapanor revenues per anticipated approved indications of ESRD-Pi, CKD-T2DM, and IBS-C in the U.S., EU, and Japan. As per the agreement with AstraZeneca whereby ARDX is set to receive tiered mid-high single-digit to mid-high double-digit royalties on worldwide sales, we conservatively model a straight-line royalty of 12.5%, which we subsequently discount to present values using a discount rate of 30%. Terminal values for each of the potential royalty income streams were determined by applying a long-term growth rate of 0%. In ESRD-Pi, our model estimates total tenapanor royalty revenues approaching ~$77MM at peak, contributing to a present valuation of $30MM, or $1.79 per share. Similarly in CKD-T2DM, we derive a present valuation of $60MM, or $3.60 per share. Finally, we model $71MM in IBS-C royalties on an NPV basis, for a per share value of $4.16. Potential milestone payments in lieu of greater economics on future sales are directly tied to the probability of success of tenapanor and total $703.3MM. Similarly discounted, we value milestone payments at $257MM on an NPV basis, or $15.05 per share. Adding cash on hand of $5.30 per share, we arrive at an SOTP valuation of $29.90. Our SOTP valuation, together with revenue and our contribution modeling assumption, is detailed in Figure 5.

FIGURE 5. Sum-of-the-Parts Valuation

Sum of the Parts Valuation		
Market	**($ MM)**	**$/Share**
ESRD	**$ 30.49**	**$ 1.79**
CKD	**61.52**	**3.60**
IBS-C	**71.02**	**4.16**
Milestones	**256.94**	**15.05**
Cash	**90.56**	**5.30**
Value of Equity	**$ 511**	**$ 29.90**

ESRD - Dialysis Dependent		2018	2019	2020	2021	2022	2023	2024	2025
US Royalty Income ($MM)			**$ 2.9**	**$ 10.0**	**$ 18.4**	**$ 27.9**	**$ 34.5**	**$ 37.1**	**$ 39.7**
Contribution Margin			*85%*	*85%*	*85%*	*85%*	*85%*	*85%*	*85%*
Discount Period			5.0	6.0	7.0	8.0	9.0	10.0	11.0
PV			**0.7**	**1.8**	**2.5**	**2.9**	**2.8**	**2.3**	**1.9**
Terminal Value									**6.3**
Discount Rate	30%								
Terminal Growth Rate	0%								
NPV	**$21.05**								
# Shares outstanding	17.1								
Incremental Price	**$1.23**								
US Royalty Income ($MM)			**$ -**	**$ 1.6**	**$ 5.4**	**$ 9.6**	**$ 13.6**	**$ 16.6**	**$ 17.5**
Contribution Margin			*85%*	*85%*	*85%*	*85%*	*85%*	*85%*	*85%*
Discount Period			5.0	6.0	7.0	8.0	9.0	10.0	11.0
PV			**0.0**	**0.3**	**0.7**	**1.0**	**1.1**	**1.0**	**0.8**
Terminal Value									**2.8**
Discount Rate	30%								
Terminal Growth Rate	0%								
NPV	**$4.78**								
# Shares outstanding	17.1								
Incremental Price	**$0.28**								
JPN Royalty Income ($MM)			**$ -**	**$ 5.7**	**$ 10.4**	**$ 14.8**	**$ 18.2**	**$ 19.4**	**$ 20.5**
Contribution Margin			*85%*	*85%*	*85%*	*85%*	*85%*	*85%*	*85%*
Discount Period			5.0	6.0	7.0	8.0	9.0	10.0	11.0
PV			**0.0**	**1.2**	**1.7**	**1.8**	**1.7**	**1.4**	**1.1**
Terminal Value									**3.2**
Discount Rate	30%								
Terminal Growth Rate	0%								
NPV	**$4.65**								
# Shares outstanding	17.1								
Incremental Price	**$0.27**								

T2DM CKD		2018	2019	2020	2021	2022	2023	2024	2025
US Royalty Income ($MM)			**$ 3.6**	**$ 14.4**	**$ 40.1**	**$ 57.4**	**$ 74.0**	**$ 81.9**	**$ 88.7**
Contribution Margin			*85%*	*85%*	*85%*	*85%*	*85%*	*85%*	*85%*
Discount Period			5.0	6.0	7.0	8.0	9.0	10.0	11.0
PV			**0.8**	**2.5**	**5.4**	**6.0**	**5.9**	**5.0**	**4.2**
Terminal Value									**14.0**
Discount Rate	30%								
Terminal Growth Rate	0%								
NPV	**$44.00**								
# Shares outstanding	17.1								
Incremental Price	**$2.58**								
EU Royalty Income ($MM)			**$ -**	**$ 4.0**	**$ 13.2**	**$ 31.0**	**$ 44.3**	**$ 57.8**	**$ 66.3**
Contribution Margin			*85%*	*85%*	*85%*	*85%*	*85%*	*85%*	*85%*
Discount Period			5.0	6.0	7.0	8.0	9.0	10.0	11.0
PV			**-**	**0.7**	**1.8**	**3.2**	**3.6**	**3.6**	**3.1**
Terminal Value									**10.5**
Discount Rate	30%								
Terminal Growth Rate	0%								
NPV	**$16.21**								
# Shares outstanding	17.1								
Incremental Price	**$0.95**								
JPN Royalty Income ($MM)			**$ -**	**$ -**	**$ 3.6**	**$ 6.1**	**$ 9.6**	**$ 13.2**	**$ 17.7**
Contribution Margin			*85%*	*85%*	*85%*	*85%*	*85%*	*85%*	*85%*
Discount Period			5.0	6.0	7.0	8.0	9.0	10.0	11.0
PV			**-**	**-**	**0.6**	**0.7**	**0.9**	**1.0**	**1.0**
Terminal Value									**3.3**
Discount Rate	30%								
Terminal Growth Rate	0%								
NPV	**$1.32**								
# Shares outstanding	17.1								
Incremental Price	**$0.08**								

IBS-Constipation		2018	2019	2020	2021	2022	2023	2024	2025
US Royalty Income			**$ 13.6**	**$ 35.2**	**$ 51.0**	**$ 62.8**	**$ 67.7**	**$ 69.3**	**$ 72.5**
Contribution Margin			*85%*	*85%*	*85%*	*85%*	*85%*	*85%*	*85%*
Discount Period			5.0	6.0	7.0	8.0	9.0	10.0	11.0
PV			**3.1**	**6.2**	**6.9**	**6.5**	**5.4**	**4.3**	**3.4**
Terminal Value									**11.5**
Discount Rate	30%								
Terminal Growth Rate	0%								
NPV	**$47.36**								
# Shares outstanding	17.1								
Incremental Price	**$2.77**								
EU Royalty Income ($MM)				**$ 14.6**	**$ 32.6**	**$ 43.1**	**$ 53.8**	**$ 64.6**	**$ 67.9**
Contribution Margin				*85%*	*85%*	*85%*	*85%*	*85%*	*85%*
Discount Period				6.0	7.0	8.0	9.0	10.0	11.0
PV				**2.6**	**4.4**	**4.5**	**4.3**	**4.0**	**3.2**
Terminal Value									**10.7**
Discount Rate	30%								
Terminal Growth Rate	0%								
NPV	**$22.22**								
# Shares outstanding	17.1								
Incremental Price	**$1.30**								
JPN Royalty Income ($MM)					**$ 3.9**	**$ 8.9**	**$ 12.0**	**$ 15.4**	**$ 19.0**
Contribution Margin					*85%*	*85%*	*85%*	*85%*	*85%*
Discount Period					7.0	8.0	9.0	10.0	11.0
PV					**0.5**	**0.9**	**1.0**	**0.9**	**0.9**
Terminal Value									**3.0**
Discount Rate	30%								
Terminal Growth Rate	0%								
NPV	**$1.45**								
# Shares outstanding	17.1								
Incremental Price	**$0.09**								

Milestones		2018	2019	2020	2021	2022	2023	2024	2025
Milestone payments		**$ 117.5**	**$ 130.0**	**$ 225.0**	**$ 106.8**	**$ 70.0**	**$ -**	**$ -**	**$ -**
Discount Period		4.0	5.0	6.0	7.0	8.0	9.0	10.0	11.0
PV		**41.1**	**35.0**	**46.6**	**17.0**	**8.6**	**-**	**-**	**-**
Terminal Value									**0.0**
Discount Rate	30%								
Terminal Growth Rate	0%								
NPV	**$256.94**								
# Shares outstanding	17.1								
Incremental Price	**$15.05**								

Source: JMP Securities LLC, Company filings

COMPANY OVERVIEW

Ardelyx is a biopharmaceutical company focused on the development of therapies for the treatment of various cardiovascular, renal, and digestive disorders. By leveraging its unique platform combining non-systemic small molecule inhibitors and proprietary cell culture system, Ardelyx has advanced tenapanor, an innovative candidate for the treatment of kidney disease and irritable bowel syndrome (IBS-C) in partnership with AstraZeneca. In addition to demonstrating preclinical and clinical efficacy in reducing the absorption of dietary sodium and phosphate, tenapanor has been shown to be safe and well-tolerated, having completed Phase I safety. Ardelyx expects data from its Phase IIB trial of tenapanor in IBS-C in 4Q2014, from its Phase IIB trial in hyperphosphatemia patients with end stage renal disease (ESRD-Pi) in 1H2015, and its Phase IIA trial in patients with chronic kidney disease (CKD) in 2H15. Ardelyx also has research and development partnerships in place for its preclinical NaP2b inhibitor program with Sanofi.

INVESTMENT RISKS

Clinical and Regulatory. If tenapanor is not able to meet any of its primary outcomes or suffers from safety and tolerability issues, Ardelyx and AstraZeneca may choose to end development in any of its current indications. Additionally, if the FDA and EMEA do not approve tenapanor, Ardelyx's stock price would likely suffer.

Partnering. Ardelyx has partnered with AstraZeneca in the development of tenapanor and with Sanofi in the development of RDX002. AstraZeneca is responsible for the continued clinical and commercial development of tenapanor and may decide to end development for one or more indications. Additionally, Sanofi may not exercise its option to license RDX002 for clinical development. If it were necessary for Ardelyx to develop and market any of its programs due to the loss or inability to retain a partner, it may be difficult to develop an internal commercial structure. Management has limited experience in commercial and marketing activities.

Reimbursement and Commercial. The reimbursement landscape for dialysis drugs has shifted dramatically in recent years. In 2010, CMS introduced requirements for the fixed reimbursement "bundle" that have forced negative pricing pressure on injectables, such as erythropoietin-stimulating agents (e.g., EPO). The Protecting Access to Medicare Act of 2014 places ESRD oral therapeutics into the bundle beginning in 2024. The potential lack of separate reimbursement under Part D could make tenapanor unprofitable if these impacts on revenue are outpaced by rising costs of manufacture and marketing.

Competitive. There are a number of marketed and OTC therapies for several indications that Ardelyx is pursuing. There are several prescribed phosphate binders approved (Renagel/Renvela, PhosLo/Phoslyra, and Fosrenol), and in development (Zerenex, Alfaren, and Velphoro) for hyperphosphatemia. Sevlamer, the active ingredient in Renagel, goes off patent in 2014. Additionally, the IBS-C market has a number of OTC competitors (Miralax, Metamucil, Fibercon, Ex-lax) as well as several recently approved therapeutics (Linzess and Amitza). The CKD market is populated by a number of generic Angiotensin-converting enzyme (ACE) inhibitors and Angiotensin II receptor blockers (ARBs) that have similar minor efficacy in type 2 diabetic patients with moderately increased albuminuria.

Intellectual Property Risk. The Ardelyx patent estate is based on internally discovered and developed chemical entities. In contrast to other iron-based hyperphosphatemia therapies in development, there is less risk associated with challenges to the tenapanor patent portfolio. Method of use patents covering tenapanor are pending.

Financial. Ardelyx currently derives revenue from research and development funding and from license or collaboration agreements. The company sold ~4.286MM shares in its June 2014 IPO transaction, raising net proceeds of ~$56MM. As a result, the company is projected to finish 2Q14 with ~$89MM in cash, equivalents, and marketable securities. Similar to most non-profitable biotechnology companies, ARDX will likely need to seek additional financing, exposing current investors to dilutive risk.

TENAPANOR – CLINICAL DEVELOPMENT

Tenapanor is a unique non-absorbed small molecule inhibitor of NHE3, the major transporter responsible for the uptake of sodium into the gastrointestinal tract. Ionic balance is perturbed in a number of conditions, including chronic kidney disease, end stage renal disease, and irritable bowel syndrome. Rebalancing ionic levels by modulating ionic absorption through the gastrointestinal tract can significantly alter symptoms and progression of disease.

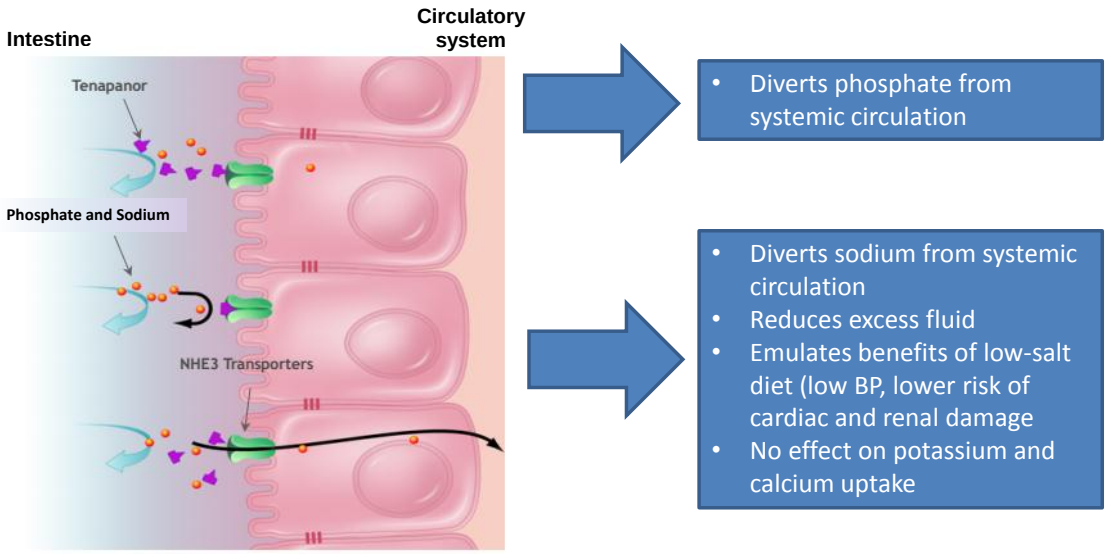
Tenapanor was developed using the Ardelyx discovery platform, driven by an understanding of gut epithelial transporters and broad-based medicinal chemistry knowledge on the minimization of small molecule gut absorption.

Ardelyx has licensed worldwide development and commercialization rights to AstraZeneca, retaining tiered double-digit royalties on U.S. sales, and options to increase royalties or to co-promote in the U.S.

Tenapanor has been evaluated in studies of >700 in four completed Phase I clinical trials, and two completed Phase II trials. Tenapanor continues to be evaluated in trials, with 661 patients enrolled in three ongoing Phase II trials. There were no drug-related SAEs, with on-target effects resulting in mild to moderate diarrhea.

Ardelyx and AstraZeneca are currently pursuing the development of tenapanor in three different indications: treatment of patients with hyperphosphatemia in end state renal disease (ESRD-Pi), treatment of patients with constipation related to irritable bowel syndrome (IBS-C), and for the improvement of kidney function in patients with chronic kidney disease and type 2 diabetes mellitus (CKD-TDM). We focus our analysis on the completed and ongoing Phase II programs that support the continued development of tenapanor in these indications.

FIGURE 6. Tenapanor Mechanism of Action



Source: Adapted from company presentation

ESRD-Pi: Current and future clinical development

Patients with end stage renal disease (ESRD) develop a number of comorbidities, including hyperphosphatemia. Over 65 percent of the 430,000 ESRD patients receiving hemodialysis were prescribed a phosphate binder - by far the largest share of prescription drugs taken by this U.S. patient population, both by number of prescriptions and by cost (~$500 million). Recent studies from 2012 conducted on 1,430 ESRD patients have demonstrated that current phosphate binders, including Renegel and Renvela, are unable to adequately control serum phosphate, with U.S. patients showing average baseline phosphorus of 6.4 mg/mL, falling well off the target level of 5.5 mg/mL. This study and others suggest that patient compliance is a major issue for poor serum phosphate control. This poor compliance is driven by both the high pill burden of these therapies, along with the frequency of administration (essentially with every meal).

The development of chronic kidney disease can ultimately lead to serious mineral and bone disorders. This pathology arises from secondary hyperparathyroidism and arterial calcification caused by reduced secretion of phosphate from the kidneys and compensatory increased release of calcium stores from bone. As CKD progresses to ESRD and dialysis is required, phosphate secretion is negligible and the only way to decrease the potential for bone disorders is the use of phosphate binders. Current phosphate binders, such as Renvela, require three daily doses of up to three tablets per day, resulting in compliance issues (Figure 7). Because the small prolonged fluctuations in phosphate levels are enough to result in pathologies, new treatment modalities that decrease pill burden and improve compliance, such as tenapanor, should improve serum phosphate control in ESRD patients.

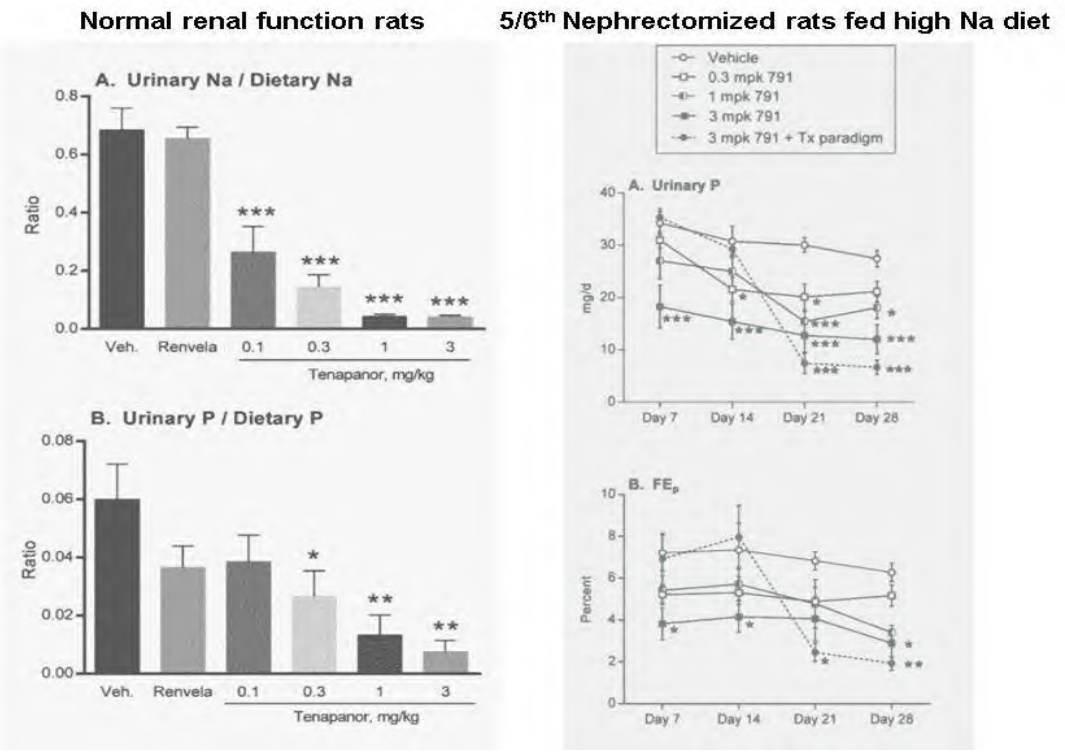
Tenapanor has demonstrated significant increases in stool phosphate levels with concomitant decreases in urinary phosphate levels when administered to 164 patients during Phase I trials, compared to placebo. Additionally, in a single dose, open-label study where 16 healthy patients were treated with tenapanor alone or in combination with Renvela, levels of phosphate in urine and stool were similar for both interventions, suggesting that Renvela had little additive effect on the efficacy of tenapanor. This evidence bolsters tenapanor as a more promising therapy for hyperphosphatemia.

FIGURE 7. ESRD-Pi Treatment Landscape

Therapeutic	Stage	Mechanism of Action	Relative Advantages	Disadvantages
Amphojel (aluminum hydroxide)	Approved-generic	Coordination compound	Highly effective, inexpensive	Proven toxicity, requires monitoring
Renagel, Renvela (sevelamer)	Approved	Ion exchange	Moderately effective, lipid lowering	Expensive, high pill burden; gastrointestinal effects, metabolic acidosis
Zerenex (ferric citrate)	NDA review, approval pending	Iron-based binder	Effective, lower daily pill burden	Large pill size
Velphoro (sucroferric oxyhydroxide)	Approved	Iron-based binder	Effective, lower daily pill burden	Large pill size
Alpharen (fermagate tablets)	Phase III	Iron-based binder	Effective, lower daily pill burden	Large pill size
Fosrenol (lanthanum carbonate)	Approved	Ionic	Highly effective, lower daily pill number	Large pill size, expensive, gastrointestinal effects
TUMS (calcium carbonate)	OTC	Ionic	Moderately effective, fairly inexpensive	High pill burden; potential for increased hypercalcemia/ vascular calcification

Source: Biomed Tracker - Uptodate

FIGURE 8. Urinary vs. Fecal Phosphate Secretion in Rats

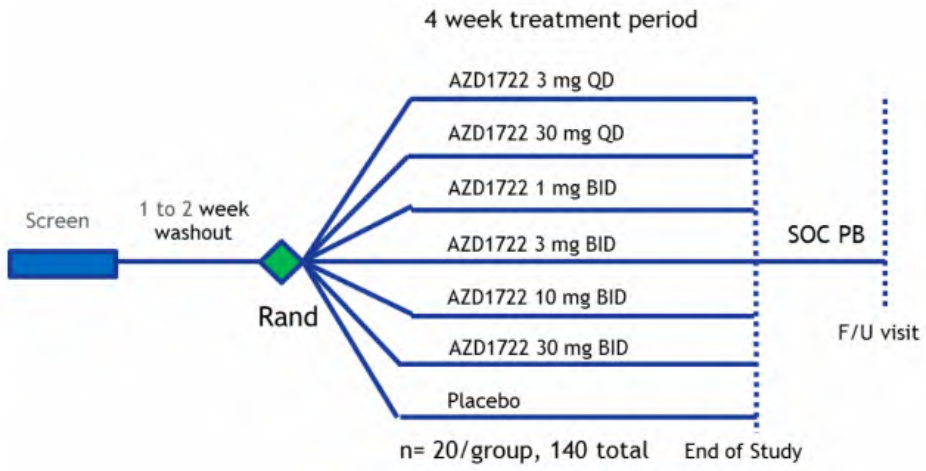


Source: Ardelyx company reports

Based on encouraging results in these trials, Ardelyx and AstraZeneca have advanced tenapanor into Phase IIB studies in order to determine efficacy, safety, and appropriate dosing for further clinical development in the treatment of hyperphosphatemia in ESRD patients on dialysis. The primary objective in this randomized, double-blind, placebo-controlled, parallel group, multi-center study is to compare the change in serum phosphorous levels before and after treatment with tenapanor or placebo, while secondary outcomes include reaching serum phosphate levels <5.5mg/dL. Screened patients will proceed through a washout period where phosphate binder medication will be withheld for 1 to 2 weeks. Patients whose phosphorous levels are at least 6.0 mg/dL with concomitant increases of at least 1.5 mg/dL over pre-washout are randomized to receive one of seven interventions: tenapanor at 3 mg QD, 30 mg QD, 1 mg BID, 3 mg BID, 10 mg BID, 30 mg BID, or placebo BID.

Enrollment is expected at 25 patients per cohort. After the four-week treatment period, patients will resume standard-of-care phosphate binders with a follow-up. Primary outcome will be a change in serum phosphate levels from the end of the washout pre-randomization to end of treatment. Secondary outcomes include a comparison versus placebo of the number of patients achieving a target serum phosphate level of <5.5 mg/dL (Figure 9). Results from this trial are expected in 1H 2015.

FIGURE 9. Overview of ESRD-Pi Phase IIb Trial Design



Primary endpoint: Change in serum phosphate levels

Secondary endpoint: # patients achieving Pi goal <5.5 mg/dL; change from baseline of calcium phosphate, product safety/tolerability

SOC PB: Standard-of-care phosphate binders

Source: Ardelyx company reports

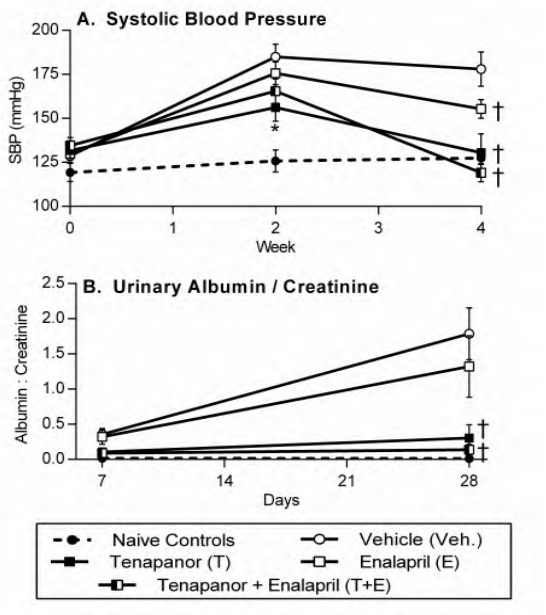
CKD-TDM: Current and future clinical development

Over 40 percent of patients who have chronic kidney disease (CKD) in the U.S. also have diabetes. Typically among type 2 diabetics, the rate of progression from early stage CKD to later stage CKD (as defined by severe albuminuria - urinary creatinine-albumin ratio (UACR) greater than 300 mg/g) is up to 40 percent over a 10-year period.

Treatment options for severe albuminuria typically involve the prescription of Angiotensin-converting enzyme (ACE) inhibitors or Angiotensin II receptor blockers (ARB) with the goal of modestly reducing albuminuria and staving off the progression to severely increased albuminuria. There are no currently approved therapies to improve kidney function in type 2 diabetics with mid-stage CKD, especially when their albuminuria has progressed to the level at which it is considered severe. Current evidence also suggests that sodium restriction can lead to improvement in albuminuria and renal function in patients with CKD.

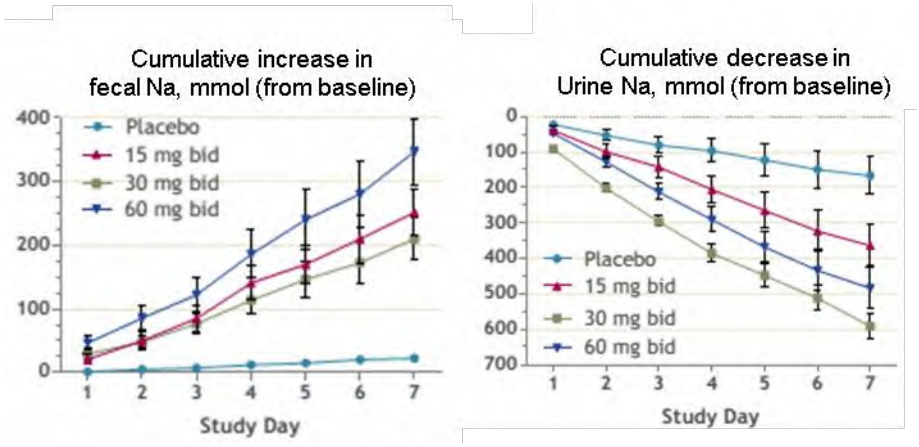
Tenapanor is a potent and selective inhibitor of NHE3, the major gastrointestinal transporter for sodium. Preclinical and Phase I trials have demonstrated significant reduction in urinary sodium excretion by 20 to 50 mmol/day with concomitant increases in stool sodium content (Figure 11). Improvements in cardio-renal function were seen in a preclinical rat model of CKD (5/6ths nephrectomized), demonstrating dose-dependent reductions in extracellular fluid volume, decrease in blood pressure, reduction in left ventricular hypertrophy, and lower levels of albuminuria (Figure 10). These studies suggest that the ability of tenapanor to modulate sodium levels could improve kidney function in type 2 diabetic patients with mid-stage CKD.

FIGURE 10. Tenapanor's Effect on Blood Pressure and UACR in Rat CKD Model



Source: Ardelyx company reports

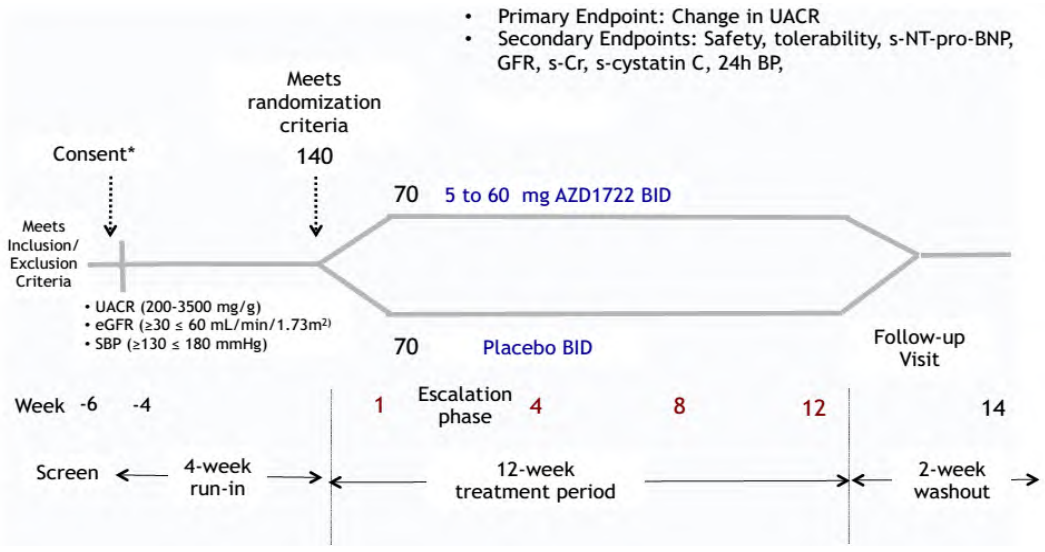
FIGURE 11. Phase I – Dose-Dependent Tenapanor Effect on Sodium Excretion



Source: Ardelyx company reports

Ardelyx and AstraZeneca have initiated a Phase IIA randomized, double-blind, placebo-controlled, parallel design study to evaluate the safety and pharmacodynamics of tenapanor in CKD stage 3 patients with type 2 diabetes, albuminuria >200 mg/g and high blood pressure. This ongoing trial will enroll 140 patients, with half receiving increasing dosages of tenapanor from 5 mg to 60 mg BID and half receiving placebo after a four-week run-in confirming eGFR, UACR, and blood pressure (Figure 12). Endpoints include changes in urine albumin-to-creatinine ratio (UACR) from baseline to week 12, with results of this trial expected in 2H 2015.

FIGURE 12. Overview of Diabetic CKD Phase IIa Trial Design



UACR: Urinary Albumin:Creatinine Ratio
GFR: Glomerular Filtration Rate

Source: Ardelyx company reports

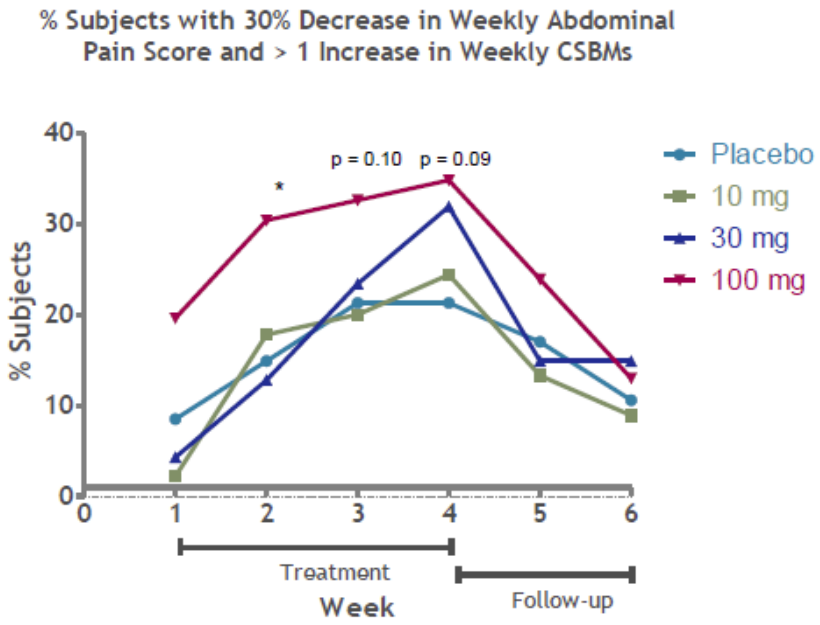
IBS-C: Leveraging Tenapanor's sodium effect into another significant market opportunity

The prevalence of irritable bowel syndrome (IBS) in the U.S. and Europe is between 10 and 15 percent, with about 15 percent of patients seeking medical attention and comprising up to 50 percent of gastroenterologist referrals. According to the Agency for Healthcare Research and Quality, the direct and indirect costs of IBS have been estimated to be $30 billion. Current IBS treatments, specifically for constipation that is refractory to standard laxatives include Linzess (linaclotide) and Amitiza (lubiprostone), both of which can cause significant nausea and diarrhea (Figure 14).

Irritable bowel syndrome is a gastrointestinal disorder that presents with altered bowel movements and abdominal pain with no specific cause. IBS is characterized in one of four subtypes: IBS with constipation, IBS with diarrhea, mixed, and unsubtyped. Current IBS-C treatments are able to modify disease symptoms, but only in subsets of patients. Linzess Phase III clinical trial results were reflective of the significant proportion of patients who did not receive benefit from treatment. In two separate Phase III studies, Linzess was only able to increase complete spontaneous bowel movements in 48.6% versus 29% placebo and 48.2% versus 26.1% placebo. Additionally, during those trials, a significant percentage of patients discontinued due to diarrhea (5.3% vs. 0.4% placebo, and 8% vs. 3% placebo). Similarly, another Guanylate cyclase-C agonist in development for IBS-C, plecanatide, from Synergy Pharmaceuticals (SGYP, NC) was only effective for a minority of patients during Phase IIB trials, 41.9% vs. 21% placebo and caused significant diarrhea in 9.3% of treated patients. Amitiza is another marketed treatment for IBS-C, but is only approved to treat women 18 years of age and older.

Animal studies of tenapanor repeatedly demonstrated dose dependent increases in fecal water content and transit rate through the intestine. In Phase I trials, tenapanor reduced the median time to post treatment bowel movement and increased average stool mass and consistency. A completed randomized, placebo-controlled Phase IIA trial in 186 patients demonstrated activity at the highest dosage (100mg) that was consistent with the dual endpoint used for the approval of Linzess (Figure 13). Additionally, the incidence of diarrhea at this dosage was similar to placebo. Finally, the pharmacodynamic range of tenapanor seen in Phase I trials in modulating sodium excretion suggests that treatment may be extensively titratable, allowing for efficacy optimization. As the daily dose of tenapanor increased from 3 mg to 100 mg, there was a concomitant increase in sodium excretion and when the dosage frequency increased to twice daily, there was a doubling of sodium content in the stool. Bolstered by this supporting preclinical data, Ardelyx and Astra Zeneca have completed enrollment in a Phase 2b randomized, double-blind, placebo-controlled clinical trial of 371 patients to evaluate the effect of tenapanor on the frequency of bowel movements versus placebo. The results of this clinical trial are expected in 4Q 2014.

FIGURE 13. Tenapanor in IBS-C Phase IIA Results



Source: Ardelyx company reports

FIGURE 14. IBS-C Treatment Landscape

Therapeutic	Stage	Mechanism of Action	Disadvantages
Miralax (polyethylene glycol)	Generic-OTC	Osmotic laxative	Bloating and discomfort; excessive use can lead to electrolyte and volume overload
Linzess (linaclotide)	Approved	Guanylate cyclase-C agonist	Severe diarrhea; contraindicated in patients <6 years of age; efficacy seen in a minority of patients
Amitiza (Lubiprostone)	Approved	Chloride channel activator	Nausea; only approved in women >18 years of age
Plecanatide	Phase IIB	Guanylate cyclase-C agonist	Diarrhea
Zelnorm (tegaserod maleate)	Withdrawn from market	Serotonin 5-HT4 receptor	Cardiovascular risks

Source: Biomed Tracker – Uptodate

TENAPANOR COMMERCIAL OPPORTUNITY

Our Ardelyx revenue forecasts focus on tenapanor's use in end stage renal disease associated with hyperphosphatemia, chronic kidney disease associated with type 2 diabetes, and irritable bowel syndrome associated with constipation (IBS-C), indications where clinical data and the competitive landscape would suggest this therapeutic candidate has the greatest chance of regulatory and commercial success.

For ESRD, we generated prevalence-driven market models in the U.S., EU, and Japan. In the U.S., based on data from the United States Renal Data System (USRDS), we estimate the prevalence of chronic kidney disease at ~25MM, of which 1.5% (~380,000) patients receive regular dialysis. We estimate that ~80% of this patient population receives, or is eligible to receive, a prescription phosphate binder. Based on Tenapanor's differentiated mechanism of action that has the potential for reducing pill burden and the risk of developing metabolic acidosis and vascular calcification associated with other phosphate binders, we believe the drug could achieve 25% peak penetration by 2020. Assuming conservative initial pricing in the range of $3,500 per treatment year, we forecast gross sales of ~$25MM within the first year of launch (2018), climbing to ~$300MM in sales by 2023. Similarly, we model EU and Japan sales with launch price points of $2,800 and $3,000 beginning in 2019 and 2020, respectively.

With CKD, we begin with a type 2 diabetes-driven prevalence model (~33MM Americans in 2014, according to the ADA) stratified by the proportion of Stage 3 CKD with intermediate-to-high albuminuria (UACR ≥200mg/g). Assuming an expanding product launch in 2019 with a modest rate of escalating market penetration, plateauing at 25% in 2024.Modeling similar breakdowns of the target T2DM CKD population in Europe and Japan, together with product launches beginning in 2019 and 2020, respectively, we estimate worldwide CKD sales of ~$1.0bn in 2023, approaching $1.7bn by 2029.

Finally in IBS-C, we limit our focus to the relatively small proportion of IBS prevalence (~45MM overall in the U.S.) with medically diagnosed disease (~25% of the estimated prevalence), exhibiting consistent symptoms of constipation (5% of diagnoses). Assuming product launch in IBS-C beginning in 2019, we forecast U.S. sales of ~$110MM in the first year, climbing to ~$540MM at modest peak penetration of 25% by 2023. With EU and Japan sales coming online in 2020 and 2021, respectively, we forecast worldwide tenapanor IBS-C sales of close to $900MM. We believe our projections are reasonable when compared to the current performance and projected sales of Linzess ($118.7MM in the first year of launch, $500MM and $1.1bn consensus sales forecast in 2015 and 2018, respectively).

Market projections with tenapanor by locale and indication and detailed indication-specific market models in the U.S. are detailed in Figures 15 through 18.

FIGURE 15. Summary of Tenapanor Revenue by Indication and Geography, 2017E – 2020E

Tenapanor Revenue Summary	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
ESRD	-	23	93	236	384	504	575	613	639	653	668	683	699
CKD	-	-	29	147	455	756	1,024	1,223	1,382	1,469	1,531	1,597	1,665
IBS-C	-	-	109	398	700	919	1,068	1,195	1,275	1,313	1,345	1,379	1,413
WW Sales	**$ -**	**$ 23**	**$ 231**	**$ 781**	**$ 1,538**	**$ 2,178**	**$ 2,667**	**$ 3,031**	**$ 3,297**	**$ 3,435**	**$ 3,545**	**$ 3,659**	**$ 3,777**
Royalty Revenue to Ardelyx	**$ -**	**$ 3**	**$ 29**	**$ 98**	**$ 192**	**$ 272**	**$ 333**	**$ 379**	**$ 412**	**$ 429**	**$ 443**	**$ 457**	**$ 472**
Royalty Rate		*12.5%*	*12.5%*	*12.5%*	*12.5%*	*12.5%*	*12.5%*	*12.5%*	*12.5%*	*12.5%*	*12.5%*	*12.5%*	*12.5%*
Breakdown by Geography and Indication													
US													
ESRD	-	23	80	147	223	276	296	318	327	337	347	358	369
T2DM CKD	-	-	29	115	321	460	592	655	710	760	813	870	929
IBS-C	-	-	109	281	408	503	541	554	580	601	622	644	666
Total	$ -	$ 23	$ 218	$ 544	$ 952	$ 1,238	$ 1,430	$ 1,527	$ 1,617	$ 1,698	$ 1,782	$ 1,871	$ 1,964
EU													
ESRD	-	-	13	43	77	109	133	140	148	149	151	152	154
T2DM CKD	-	-	-	32	106	248	354	463	531	536	541	545	551
IBS-C	-	-	-	117	261	345	430	517	543	549	554	560	565
Total	$ -	$ -	$ 13	$ 191	$ 444	$ 702	$ 918	$ 1,120	$ 1,222	$ 1,233	$ 1,245	$ 1,257	$ 1,269
JPN													
ESRD	-	-	-	46	83	118	146	155	164	167	170	173	176
T2DM CKD	-	-	-	-	29	48	77	105	142	173	177	182	186
IBS-C	-	-	-	-	31	71	96	123	152	163	169	175	181
Total	$ -	$ -	$ -	$ 46	$ 143	$ 238	$ 319	$ 383	$ 458	$ 504	$ 517	$ 530	$ 544

Source: JMP Securities LLC

FIGURE 16. Tenapanor ESRD Market Model - U.S., 2017E – 2029E

US Model	2017E	2018E	2019E	2020E	2021E	2022E	2023E	2024E	2025E	2026E	2027E	2028E	2029E
Epidemiology													
Prevalence of CKD (MM)	25.9	26.2	26.4	26.7	27.0	27.2	27.5	27.8	28.1	28.3	28.6	28.9	29.2
% growth	*1.0%*	*1.0%*	*1.0%*	*1.0%*	*1.0%*	*1.0%*	*1.0%*	*1.0%*	*1.0%*	*1.0%*	*1.0%*	*1.0%*	*1.0%*
% on dialysis	*1.5%*	*1.5%*	*1.5%*	*1.5%*	*1.5%*	*1.5%*	*1.5%*	*1.5%*	*1.5%*	*1.5%*	*1.5%*	*1.5%*	*1.5%*
Population on Dialysis in the US	388,724	392,611	396,537	400,503	404,508	408,553	412,638	416,765	420,932	425,141	429,393	433,687	438,024
% of Dialysis Population on Chronic Rx Phosphate Binder	*84%*	*85%*	*85%*	*85%*	*85%*	*85%*	*85%*	*85%*	*85%*	*85%*	*85%*	*85%*	*85%*
# of Patients on Chronic Rx Phosphate Binder	326,528	333,719	337,057	340,427	343,831	347,270	350,742	354,250	357,792	361,370	364,984	368,634	372,320
Tenapanor Penetration		*6.0%*	*10.0%*	*15.0%*	*20.0%*	*24.0%*	*25.0%*	*26.0%*	*26.0%*	*26.0%*	*26.0%*	*26.0%*	*26.0%*
# of Patients on Tenapanor		20,023	33,706	51,064	68,766	83,345	87,686	92,105	93,026	93,956	94,896	95,845	96,803
Duration of Treatment on Tenapanor		4.0	8.0	9.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5
Patient months on Tenapanor (000s)		80	270	485	722	875	921	967	977	987	996	1,006	1,016
Sales Calculations	**2017E**	**2018E**	**2019E**	**2020E**	**2021E**	**2022E**	**2023E**	**2024E**	**2025E**	**2026E**	**2027E**	**2028E**	**2029E**
Cost per month of therapy		$ 292	$ 298	$ 303	$ 310	$ 316	$ 322	$ 328	$ 335	$ 342	$ 349	$ 356	$ 363
Annual cost of therapy		$ 3,500	$ 3,570	$ 3,641	$ 3,714	$ 3,789	$ 3,864	$ 3,900	$ 4,020	$ 4,101	$ 4,183	$ 4,266	$ 4,352
% Price Increase		*2.0%*	*2.0%*	*2.0%*	*2.0%*	*2.0%*	*2.0%*	*2.0%*	*2.0%*	*2.0%*	*2.0%*	*2.0%*	*2.0%*
Gross Sales of Tenapanor - US ($MM)		**$ 23.4**	**$ 80.2**	**$ 147.2**	**$ 223.5**	**$ 276.3**	**$ 296.5**	**$ 317.7**	**$ 327.3**	**$ 337.1**	**$ 347.3**	**$ 357.8**	**$ 368.6**
Royalty Calculation													
% Royalty		*12.5%*	*12.5%*	*12.5%*	*12.5%*	*12.5%*	*12.5%*	*12.5%*	*12.5%*	*12.5%*	*12.5%*	*12.5%*	*12.5%*
Royalty to Ardelyx ($MM)		**$ 2.9**	**$ 10.0**	**$ 18.4**	**$ 27.9**	**$ 34.5**	**$ 37.1**	**$ 39.7**	**$ 40.9**	**$ 42.1**	**$ 43.4**	**$ 44.7**	**$ 46.1**

Source: JMP Securities LLC and Company Reports

FIGURE 17. Tenapanor T2DM CKD Market Model - U.S., 2017E – 2029E

US Model	2017E	2018E	2019E	2020E	2021E	2022E	2023E	2024E	2025E	2026E	2027E	2028E	2029E
Epidemiology													
US T2DM prevelance population (MM)	39.1	41.4	43.7	46.2	48.7	51.3	54.1	56.9	59.8	62.8	65.8	69.0	72.3
% growth	*5.9%*	*5.8%*	*5.7%*	*5.6%*	*5.5%*	*5.4%*	*5.3%*	*5.2%*	*5.1%*	*5.0%*	*4.9%*	*4.8%*	*4.7%*
% with CKD	*35.0%*	*35.0%*	*35.0%*	*35.0%*	*35.0%*	*35.0%*	*35.0%*	*35.0%*	*35.0%*	*35.0%*	*35.0%*	*35.0%*	*35.0%*
% Stage 3 CKD	*50.0%*	*50.0%*	*50.0%*	*50.0%*	*50.0%*	*50.0%*	*50.0%*	*50.0%*	*50.0%*	*50.0%*	*50.0%*	*50.0%*	*50.0%*
% UACR ≥200mg/L	*10.0%*	*10.0%*	*10.0%*	*10.0%*	*10.0%*	*10.0%*	*10.0%*	*10.0%*	*10.0%*	*10.0%*	*10.0%*	*10.0%*	*10.0%*
Addressable T2DM CKD Population (000s)	684	724	765	808	852	898	946	995	1,046	1,098	1,152	1,208	1,264
Tenapanor Penetration (%)			*5.0%*	*9.0%*	*15.0%*	*20.0%*	*24.0%*	*25.0%*	*25.0%*	*25.0%*	*25.0%*	*25.0%*	*25.0%*
# of Patients on Tenapanor (000s)			38	73	128	180	227	249	262	275	288	302	316
Duration of Treatment on Tenapanor			3.0	6.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
% discontinutation			*15.0%*	*13.0%*	*10.0%*	*10.0%*	*10.0%*	*10.0%*	*10.0%*	*10.0%*	*10.0%*	*10.0%*	*10.0%*
Patient months on Tenapanor (000s)			98	380	1,036	1,456	1,839	2,016	2,118	2,224	2,334	2,446	2,561
Sales Calculations	**2017E**	**2018E**	**2019E**	**2020E**	**2021E**	**2022E**	**2023E**	**2024E**	**2025E**	**2026E**	**2027E**	**2028E**	**2029E**
Cost per month of therapy			$ 298	$ 303	$ 310	$ 316	$ 322	$ 325	$ 335	$ 342	$ 349	$ 356	$ 363
Annual cost of therapy			$ 3,570	$ 3,641	$ 3,714	$ 3,789	$ 3,864	$ 3,900	$ 4,020	$ 4,101	$ 4,183	$ 4,266	$ 4,352
% Price Increase			*2.0%*	*2.0%*	*2.0%*	*2.0%*	*2.0%*	*2.0%*	*2.0%*	*2.0%*	*2.0%*	*2.0%*	*2.0%*
Gross Sales of Tenapanor - US ($MM)			**$ 29.0**	**$ 115.2**	**$ 320.6**	**$ 459.5**	**$ 592.3**	**$ 655.1**	**$ 709.8**	**$ 760.2**	**$ 813.4**	**$ 869.5**	**$ 928.6**
Royalty Calculation													
% Royalty			*12.5%*	*12.5%*	*12.5%*	*12.5%*	*12.5%*	*12.5%*	*12.5%*	*12.5%*	*12.5%*	*12.5%*	*12.5%*
Royalty to Ardelyx ($MM)			**$ 3.6**	**$ 14.4**	**$ 40.1**	**$ 57.4**	**$ 74.0**	**$ 81.9**	**$ 88.7**	**$ 95.0**	**$ 101.7**	**$ 108.7**	**$ 116.1**

Source: JMP Securities LLC and Company reports

FIGURE 18. Tenapanor IBS-C Market Model - U.S., 2017E – 2029E

US Model	2017E	2018E	2019E	2020E	2021E	2022E	2023E	2024E	2025E	2026E	2027E	2028E	2029E
Epidemiology													
IBS Prevalence Population (MM)	48.7	49.4	50.1	50.9	51.6	52.4	53.2	54.0	54.8	55.6	56.5	57.3	58.2
% growth	*1.5%*	*1.5%*	*1.5%*	*1.5%*	*1.5%*	*1.5%*	*1.5%*	*1.5%*	*1.5%*	*1.5%*	*1.5%*	*1.5%*	*1.5%*
% medically diagnosed	*26.0%*	*30.0%*	*30.0%*	*30.0%*	*30.0%*	*30.0%*	*30.0%*	*30.0%*	*30.0%*	*30.0%*	*30.0%*	*30.0%*	*30.0%*
% IBS-C	*5.0%*	*5.0%*	*5.0%*	*5.0%*	*5.0%*	*5.0%*	*5.0%*	*5.0%*	*5.0%*	*5.0%*	*5.0%*	*5.0%*	*5.0%*
Addressable IBS-C Population (000s)	633	741	752	763	775	786	798	810	822	834	847	860	873
Tenapanor Penetration (%)		*5.0%*	*9.0%*	*15.0%*	*21.0%*	*25.0%*	*26.0%*	*26.0%*	*26.0%*	*26.0%*	*26.0%*	*26.0%*	*26.0%*
# of Patients on Tenapanor (000s)		37	68	114	163	197	207	211	214	217	220	224	227
Duration of Treatment on Tenapanor		3.0	6.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
% discontinutation		*12.0%*	*10.0%*	*10.0%*	*10.0%*	*10.0%*	*10.0%*	*10.0%*	*10.0%*	*10.0%*	*10.0%*	*10.0%*	*10.0%*
Patient months on Tenapanor (000s)		98	365	927	1,318	1,592	1,681	1,706	1,731	1,757	1,784	1,811	1,838
Sales Calculations	**2017E**	**2018E**	**2019E**	**2020E**	**2021E**	**2022E**	**2023E**	**2024E**	**2025E**	**2026E**	**2027E**	**2028E**	**2029E**
Cost per month of therapy			$ 298	$ 303	$ 310	$ 316	$ 322	$ 325	$ 335	$ 342	$ 349	$ 356	$ 363
Annual cost of therapy			$ 3,570	$ 3,641	$ 3,714	$ 3,789	$ 3,864	$ 3,900	$ 4,020	$ 4,101	$ 4,183	$ 4,266	$ 4,352
% Price Increase			*2.0%*	*2.0%*	*2.0%*	*2.0%*	*2.0%*	*2.0%*	*2.0%*	*2.0%*	*2.0%*	*2.0%*	*2.0%*
Gross Sales of Tenapanor - US ($MM)			**$ 108.7**	**$ 281.4**	**$ 407.8**	**$ 502.6**	**$ 541.2**	**$ 554.4**	**$ 580.1**	**$ 600.6**	**$ 621.8**	**$ 643.7**	**$ 666.4**
Royalty Calculation													
% Royalty			*12.5%*	*12.5%*	*12.5%*	*12.5%*	*12.5%*	*12.5%*	*12.5%*	*12.5%*	*12.5%*	*12.5%*	*12.5%*
Royalty to Ardelyx ($MM)			**$ 13.6**	**$ 35.2**	**$ 51.0**	**$ 62.8**	**$ 67.7**	**$ 69.3**	**$ 72.5**	**$ 75.1**	**$ 77.7**	**$ 80.5**	**$ 83.3**

Source: JMP Securities LLC and Company Reports

INTELLECTUAL PROPERTY

Tenapanor and the NHE3 assets are covered by several U.S. and foreign patents owned by Ardelyx and licensed to AstraZeneca. These include U.S. patent No. 8,541,448, covering the composition of tenapanor, and one patent allowed, but not issued in Japan, Japanese patent application, No. 2011-543730. Method of use patents covering tenapanor are pending. All issued and pending applications are expected to expire in 2029.

The NaP2b asset portfolio includes five pending U.S. composition of matter and method of use applications that, if issued, are expected to expire in 2031. These include patent No. 13/734,551; No. 13/734,562; No. 13/734,701; No. 13/734,539; No. 13/734,547. Finally, the TGR5 program includes one U.S. application No. 2013096771A1.

PLATFORM AND PIPELINE PRODUCTS

The discovery and preclinical development of Ardelyx molecules is driven by a proprietary platform that incorporates novel information and functional data built around a broad gastrointestinal knowledgebase. Ardelyx has identified over 3,800 proteins on the inner surface of the gut epithelium, many of which have been identified as potential drug targets. By leveraging an understanding of the properties of small molecules that contribute to their absorption, Ardelyx focuses on the creation of candidates that remain in the gastrointestinal tract, thereby reducing the potential for both on- and off-target side effects outside the gut.

Additionally, utilizing the Ardelyx Primary Enterocyte and Colonocyte Culture System, or APECCS, a proprietary cell-based system derived from the isolation of biopsied cells at key segments of the gastrointestinal tract, Ardelyx is able to phenotypically examine the functional effect of preclinical candidates in a system that is more reflective of the complex cellular and sub-structural make-up of the gastrointestinal tract. By focusing on non-absorbed modifiers of disease-linked pathways in the gastrointestinal tract, Ardelyx avoids the pitfalls of systemic effects, dramatically reducing risks associated with preclinical candidates. Several programs have advanced from the company's discovery platform, including its Sanofi partnered RDX002 NaP2b inhibitor program in hyperphosphatemia, RDX009, a TGR5 agonist for inflammatory bowel disease, RDX013, a potassium absorption inhibitor for hyperkalemia, and RDX020, a chloride absorption inhibitor being developed for fluid overload in patients with CKD. Ardelyx also has several candidates in development for undisclosed targets: RDX017, RDX018, and RDX014 for metabolic disorders, and RDX015 for mineral and metabolic disorders.

PARTNERSHIPS

Ardelyx has partnered with AstraZeneca on development and commercialization of its NHE3 targeted therapeutics, including Tenapanor and related backup compounds. Under this agreement, Ardelyx received a $35MM upfront payment and is eligible to receive up to $237.5MM in development milestones, of which it has received $40MM for dosing the first patient in the Phase IIB ESRD-Pi trial. Additionally, Ardelyx is eligible for up to $597.5MM in sales and launch milestones. Under the agreement, Ardelyx will receive incremental tiered royalties based on aggregate net sales of each licensed product, starting in the high-single digits and increasing to high-teen percentages as annual net sales increase. The company is also able to participate in a right-to-fund/royalty buy-up, whereby Ardelyx can elect to co-fund the first Phase III trial in the first indication for Tenapanor in the amount of $20MM, $30MM, or $40MM, in order to receive a 1%, 2%, 3% increase in royalty. Finally, Ardelyx has a right to co-promote in the U.S., the details of which will be agreed upon with the decision to proceed in co-promotion.

Ardelyx has also licensed its NaP2b program to Sanofi in an agreement that focuses on the preclinical development of these inhibitors. Ardelyx received a $1.25MM upfront payment, and is eligible to receive up to $196.75MM in development and regulatory milestones. Ardelyx is also eligible to receive incremental tiered royalties based on annual net sales of any licensed product, beginning in the mid-single digits and increasing to low-teen percentages as sales increase. Ardelyx also maintains the right to co-promote any licensed product in the U.S.

SUMMARY AND CONCLUSION

Ardelyx blends a seasoned management team with expertise in the gastrointestinal and renal disease markets and a solid scientific base steeped in unique medicinal chemistry and gut molecular biology that we believe can drive significant value realization in the management of chronic kidney and gastrointestinal disease. Ardelyx has solidified meaningful economic partnerships that lean heavily upon their research and development programs and clinical expertise.

In our opinion, Tenapanor is poised to capture considerable market share by treating symptoms of renal insufficiency, and also by creating a treatment regimen that leads to diet liberation and renal improvement. The various read-outs from multiple Phase II clinical studies offer attractive value inflection points that can drive market valuation to levels seen in companies with similar products that are approved or are in development (e.g., KERX, IRWD). The company's capital raise in the recent IPO transaction, along with collaboration fees and milestones received from partnerships with AstraZeneca and Sanofi, give us more than just a gut feeling about Ardelyx.

MANAGEMENT TEAM

Mike Raab, President, Chief Executive Officer and Director

Mr. Raab has been President and Chief Executive Officer of Ardelyx since March 2009. Before Ardelyx, he was a partner at New Enterprise Associates (NEA), one of the world's largest and most successful venture capital firms, specializing in healthcare investments focused on the biotechnology and pharmaceutical sectors. Prior to joining NEA in 2002, Mr. Raab spent 15 years in commercial and operating leadership roles in the biotech and pharmaceutical industries. He was Senior Vice President, Therapeutics and General Manager of the Renal Division at Genzyme Corporation, a Sanofi company. In this position, he launched and oversaw the sales growth of sevelamer, the leading phosphate binder for the treatment of hyperphosphatemia, with over $1.0 billion in worldwide sales in 2013. Mr. Raab was also instrumental in the worldwide launch of both Ceredase and Cerezyme, Genzyme's $1.0 billion therapies for Gaucher disease. Mr. Raab also spent two years with Genzyme's Diagnostic products and services division. Previous to Genzyme, he held business development and sales and marketing positions at Repligen and Bristol-Myers. Mr. Raab received his B.A. from DePauw University.

Dominique Charmot, Ph.D., Chief Scientific Officer and Director

Dr. Charmot is a co-founder of Ardelyx and has served as Chief Scientific Officer and a Director since October 2007. He began his career in 1982 at Rhone-Poulenc SA, a chemical company. In 2000, Dr. Charmot joined Symyx Technologies Inc., a life sciences-based software company, where he was in charge of the development of integrated workflows in high throughput discovery targeted to specialty polymers. In 2003, he co-founded Ilypsa Inc., a company developing polymeric drugs, and worked there until the acquisition of Ilypsa by Amgen Inc., a biopharmaceutical company, in 2007. Dr. Charmot received a M.S. in Chemical Engineering from Ecole Nationale Supérieure de Chimie de Paris and a Ph.D. in Polymer Chemistry from the Ecole Supérieure de Physique et Chimie Industrielle de Paris.

Mark Kaufmann, Chief Financial Officer

Mark Kaufmann has served as Chief Financial Officer since May 2014 and formerly served as Chief Business Officer since August 2011 when he joined the company. Mr. Kaufmann has over twenty years of experience in the biopharmaceutical industry in both the U.S. and Canada in business and corporate development roles. From 2008 to 2010, Mr. Kaufmann was President and Chief Executive Officer of Allostera Pharma Inc., a preclinical company focused on autoimmune diseases. Prior to joining Allostera, Mr. Kaufmann was President and Chief Executive Officer of Celmed BioSciences, Inc., a biopharmaceutical company, and he began his career as Director of Strategic Planning and Investor Relations at MedImmune in 1994. Mr. Kaufmann received a B.A. in Biochemical Sciences from Harvard University and a M.B.A. from the University of Michigan School of Business.

Jeff Jacobs, Ph.D., Vice President, Chemistry

Dr. Jacobs has served as Vice President, Chemistry since January 2011. Dr. Jacobs has spent his career in the discovery and development of new chemical entities for the treatment of unmet medical needs. His discovery experience spans target ID to candidate selection, and his Development Chemistry expertise spans IND-enabling studies to pivotal clinical trials. Dr. Jacobs has held positions of increasing responsibility at Affymax, Vicuron, and Sunesis, where he was most recently Senior Director of Development Chemistry. Jeff graduated Magna cum Laude with a B.S. in Chemistry, Honors, from Gonzaga University. He received his Ph.D. in Bioorganic Chemistry at U.C. Berkeley where he started the catalytic antibody program in the laboratory of Professor Peter Schultz. He is a Damon-Runyon Fellow and an author and inventor on over 50 scientific papers and patents.

George Jue, Vice President, Finance and Operations

Mr. Jue has been Vice President, Finance and Operations since he joined the company in June 2008. Prior to Ardelyx, he was at Hyperion Therapeutics, where he was Vice President of Finance and Controller. Before Hyperion Therapeutics, George worked at VaxGen as the Vice President of Finance. Previously he served as Vice President of Finance and Corporate Controller at PDL BioPharma, where he was responsible for the integration of a $500 million acquisition. His previous roles include Corporate Controller at Scios/Johnson & Johnson, Director of Finance for the Urology Division at Roche BioScience, Senior Group Controller at Genentech Inc. and Associate CFO at Lawrence Berkeley National Laboratory. George holds a B.S. in Accounting from Bentley College and MBA from Golden Gate University.

David Rosenbaum, Ph.D., Vice President, Drug Development

Mr. Rosenbaum has served as Vice President of Drug Development since January 2010. He has spent the past twenty years developing novel drugs for global registration; during that time he has focused his efforts on non-absorbed, non-systemic new chemical entities. He began his career at Arthur D. Little (ADL), where he was a senior consultant and study director for over a hundred pharmacology and GLP toxicology studies in a wide variety of therapeutic areas. Since ADL, Mr. Rosenbaum has spent his career working for start-up and small pharmaceutical companies. Most notably, he was Vice President of Preclinical Research and Development at GelTex Pharmaceuticals, where he was integral in the development and approval of two non-absorbed drugs: RenaGel and WelChol. Most recently, Mr. Rosenbaum was Vice President of Drug Development for Trine Pharmaceuticals, where he was developing a novel non-systemic therapeutic for the treatment of IBS. He has filed numerous INDs, met with regulatory agencies around the world, and filed two approved NDAs. Mr. Rosenbaum received a Ph.D. in Pharmacology from Boston University School of Medicine; a M.S. in Toxicology from Albany Medical College; and a B.A. in Biology from the University of Pennsylvania.

Elizabeth Grammer, Esq., Vice President and General Counsel

Ms. Grammer joined Ardelyx as Vice President, Legal in December 2012, after serving as an independent outside corporate counsel for Ardelyx for three years. She was appointed General Counsel in May 2014. Ms. Grammer brings over 20 years of experience representing privately held and publicly traded life sciences companies in structuring and negotiating strategic transactions, such as collaborations, joint ventures, and intellectual property licensing transactions. Liz also brings significant experience in providing legal support in connection with all aspects of the research, development, and manufacture of pharmaceutical products. Prior to joining Ardelyx, Ms. Grammer served as Vice President and General Counsel of Trine Pharmaceuticals, and as General Counsel of GelTex Pharmaceuticals. She began her career in the law firms of Ware & Freidenrich in Palo Alto, and Palmer & Dodge in Boston, in both cases, focusing her efforts on working with emerging life sciences companies. Ms. Grammer received her JD from Stanford Law School and a BA from Boston University.

Andrew Spencer, PhD, Senior Director, R&D Alliance Management

Mr. Spencer joined the company as Associate Director of Bioanalytical Chemistry in 2008 and was appointed Senior Director, R&D Alliance Management, in 2012. For the past decade he has worked to discover and develop therapeutics targeting autoimmune / inflammatory, cardio-renal, and gastrointestinal disease. Upon joining Ardelyx, Mr. Spencer established a multi-disciplinary R&D laboratory and has served as program manager for the tenapanor project since 2009. He is now working broadly on tenapanor development through the Ardelyx partnership with AstraZeneca. Prior to joining Ardelyx, he contributed to emerging treatments for Celiac disease at the Celiac Sprue Research Foundation and Alvine Pharmaceuticals. In addition, he worked on early drug discovery applications of siRNAs at Mirus Bio (now part of Arrowhead Research), and spent two years at humanized monoclonal antibody innovator PDL BioPharma. Mr. Spencer holds a B.S. in Chemistry from Hope College and a Ph.D. in Biochemistry from Michigan State University. He was an NIH Postdoctoral Fellow at the Howard Hughes Medical Institute (University of Colorado at Boulder) and the University of Wisconsin at Madison.

Robert Blanks, MS RAC, Senior Director, Regulatory Affairs and Quality Assurance

Mr. Blanks joined the company as Senior Director Regulatory Affairs and Quality Assurance in 2013. Rob has over 20 years of experience in the pharmaceutical industry in the Quality, Regulatory, and CMC areas. A majority of this experience has been with small biotech companies, where he has played a critical role in developing companies' initial drug product candidates, including peptides, monoclonal antibodies, and small molecules, from the pre-clinical stage to commercial registration. He was most recently at Flexion Therapeutics as Vice President of CMC, where he oversaw the development of the company's initial two drug product candidates, which recently completed successful phase 2 studies. Prior to Flexion, he was Vice President of Quality at Idenix Pharmaceuticals overseeing all quality aspects of the commercial launch of the company's first product, Tyzeka®. Previous to Idenix, he served as Vice President of Technical Operations for Trine Pharmaceuticals and Vice President of Technical Operations and Founder of Phaedrus Pharmaceuticals. At GelTex Pharmaceuticals, subsequently purchased by Genzyme, he was a key participant in both the quality and regulatory areas in the development and registration of RenaGel®. Rob has a BS in Biology from Bowdoin College and a MS in Chemistry from Boston College and he is Regulatory Affairs Certified.

Source: Company website

BOARD OF DIRECTORS

Mike Raab, President, Chief Executive Officer and Director

Dominique Charmot, Ph.D., Chief Scientific Officer and Director

David Mott, Chairman of the Board and Director

David M. Mott joined NEA in September 2008 as a General Partner focused on biopharmaceutical investments. Prior to joining NEA, he was President and Chief Executive Officer of MedImmune, subsidiary of AstraZeneca Plc, and Executive Vice President of AstraZeneca. Dave joined MedImmune in 1992 and served in roles of increasing responsibility including Chief Operating Officer, Chief Financial Officer, President and Chief Executive Officer as the company grew from a venture-backed startup (founded in 1988) into one of the top five biotechnology companies in the world. Ultimately, he initiated and executed the sale of MedImmune to AstraZeneca in June 2007 for $15.6 billion. In 2002, Dave founded MedImmune Ventures and chaired its investment committee through his departure from MedImmune. At the time of his departure in July 2008, MedImmune had annual revenues in excess of $1.5 billion, annual R&D in excess of $650 million and approximately 3,000 employees.

Prior to joining MedImmune, Mr. Mott was a Vice President in the Health Care Investment Banking Group at Smith Barney, Harris Upham & Co. Inc. At Smith Barney, his activities included public and private equity and debt financings as well as merger and acquisition work for biotechnology, healthcare services, and medical product and device companies. Dave is currently Chairman of TESARO, Inc., a biopharmaceutical company, and Prosensa Holding N.V., a biopharmaceutical company, and is a director of Epizyme, Inc., a biopharmaceutical company. Mr. Mott received a B.A. in Economics and Government from Dartmouth College. He serves on the Advisory Board of the Scripps Translational Science Institute and the Governing Board of St. Albans School.

Peter G. Schultz, Ph.D., Co-founder and Director

Peter G. Schultz graduated from Caltech in 1979 with a B.S. degree in Chemistry (summa cum laude) and continued there for his doctoral degree with Peter Dervan (in 1984). After a postdoctoral year at the Massachusetts Institute of Technology with Christopher Walsh, he moved to the University of California, Berkeley, where he was a Professor of Chemistry, a Principal Investigator at the Lawrence Berkeley National Laboratory and an Investigator in the Howard Hughes Medical Institute. He moved to The Scripps Research Institute in 1999 where he is currently the Scripps Family Chair Professor of Chemistry.

Schultz's contributions to science include: 1) the discovery of catalytic antibodies, and their use to study fundamental mechanisms of biological and the immune system 2) the development and application of methods to expand the genetic code of living organisms (beyond the common twenty amino acids); and 3) the development and application of molecular diversity technologies to problems in chemistry, biology and medicine, including the generation of combinatorial materials libraries and the use of chemical, genomic and protein libraries to identify and characterize molecules and genes related to regenerative medicine, neglected disease, and other major medical needs. Schultz also established the Genomics Institute of the Novartis Research Foundation in 1999 in La Jolla (and served as its Director until 2010 with some 600 FTE), which develops and applies state of the art high throughput chemical, proteomics, genomics and informatics technologies to the identification of novel genes and biological processes, as well as the development of new human therapeutics for cancer, immune, metabolic, cardiovascular and infectious disease.

More recently, Schultz has established a not for profit institute, the California Institute for Biomedical Research (Calibr), that is focused on early stage translational research to create innovative medicines for major unmet medical needs. Schultz is the author of 500+ scientific publications, has trained over 300 coworkers (of which roughly 100 are on the faculty of major research institutions around the world) and has received numerous awards including the Alan T. Waterman Award, NSF (1988), the ACS Award in Pure Chemistry (1990), , the Wolf Prize in Chemistry (1994), the Paul Erhlich and Ludwig Darmstaedter Award (2002), the ACS Arthur C. Cope Award (2006), and the Solvay Prize (2013). Professor Schultz is a member of the National Academy of Sciences, USA (1993) and the Institute of Medicine of the National Academy of Sciences (1998) and he is active on many editorial and scientific advisory boards a (including MIT, Caltech, Columbia and the Welch Foundation). He is a founder of Affymax Research Institute, Symyx Technologies, Syrrx, Kalypsys, Phenomix, Ilypsa, Ambrx, Wildcat Discovery Technologies, and Ardelyx, which have pioneered the application of molecular diversity technologies to challenges in energy, materials and human health.

Richard Rogers, Director

Richard Rodgers has served on the board of directors since March 2014. From March 2010 until August 2013, Mr. Rodgers was Executive Vice President, Chief Financial Officer, Secretary and Treasurer of TESARO, Inc., a biopharmaceutical company, which he co-founded. He previously served as the Chief Financial Officer from June 2009 to February 2010 of Abraxis BioScience, Inc., a biotechnology company. Prior to that, he served as Senior Vice President, Controller and Chief Accounting Officer of MGI PHARMA, Inc., a biopharmaceutical company, from 2004 until its acquisition by Eisai Co. Ltd., a pharmaceutical company, in January 2008. Mr. Rogers has held finance and accounting positions at several private and public companies, including Arthur Anderson & Co. Rick received a B.S. in Financial Accounting from St. Cloud State University and his M.B.A. in Finance from the University of Minnesota, Carlson School of Business.

Gordon Ringold, Ph.D., Director

Gordon Ringold, Ph.D., was appointed to the board of directors in June 2014. From March 2000 to December 2013, Dr. Ringold served as Chairman and Chief Executive Officer of Alavita, Inc., a biotechnology company. From March 1995 to February 2000, Dr. Ringold served as Chief Executive Officer and Scientific Director of Affymax Research Institute where he managed the development of novel technologies to accelerate the pace of drug discovery. Dr. Ringold is currently also a director of Alexza Pharmaceuticals, Inc., a pharmaceutical company, and 3V Biosciences, Inc., a biotechnology company. From 1997 to 2013, Dr. Ringold served as a member of the board of directors of Maxygen, Inc., a publicly-traded biopharmaceutical company, and was a member of the board of directors of Oxonica plc, a publicly-traded nanotechnology company, from 2005 to 2009. Dr. Ringold received a Ph.D. in microbiology from University of California, San Francisco, in the laboratory of Dr. Harold Varmus before joining the Stanford University School of Medicine, Department of Pharmacology. Dr. Ringold also received a B.S. in biology from the University of California, Santa Cruz.

Source: Company website

FIGURE 19. Ardelyx (ARDX) Income Statement

Ardelyx Income Statement	1Q14E	2Q14E	3Q14E	4Q14E	2014E	1Q15E	2Q15E	3Q15E	4Q15E	2015E	2016E	2017E	2018E	2019E	2020E
Product Sales and Royalties															
Tenapanor - WW Royalties					-					-	-	-	2.9	28.8	97.6
Total Sales and Royalties	-	-	-	-	-					-	-	-	2.9	28.8	97.6
Licensing revenue (amortization of upfront payments)	3.2	6.3	6.3	6.3	22.0	6.3	6.3	6.3	6.3	25.0	13.3	1.3	-	-	-
Milestones	-	-	-	-	-	-	20.0	-	25.0	45.0	75.0	65.0	117.5	130.0	225.0
Collaborative development revenue (reimbursment from AZN)	5.3	5.3	5.8	6.4	22.8	7.0	7.7	8.5	9.3	32.6	35.9	46.6	65.3	78.3	86.1
Total Revenues	8.6	11.5	12.1	12.6	44.8	13.3	34.0	14.7	40.6	102.6	124.2	112.9	185.7	237.1	408.8
% change															
Research and development	7.6	8.4	9.2	10.2	35.4	11.2	12.3	13.5	14.9	51.9	63.5	83.8	99.6	106.1	114.9
Non-collaboration	2.4	2.6	2.9	3.1	11.0	3.5	3.8	4.2	4.6	16.0	16.8	18.5	21.3	20.0	24.5
% change											*5.0%*	*10.0%*	*15.0%*	*20.0%*	*22.5%*
AZN collaboration	5.3	5.8	6.4	7.0	24.5	7.7	8.5	9.3	10.3	35.9	46.6	65.3	78.3	86.1	90.4
% change		*10.0%*	*10.0%*	*10.0%*	*26.2%*	*10.0%*	*10.0%*	*10.0%*	*10.0%*	*46%*	*30.0%*	*40.0%*	*20.0%*	*10.0%*	*5.0%*
% of Total revenues		-	-	-	*0.8*					*0.5*	*0.5*	*0.7*	*0.5*	*0.4*	*0.3*
Selling, general and administrative	1.4	1.51	1.67	1.83	6.4	2.02	2.22	2.44	2.68	9.4	12.2	14.6	16.1	17.7	19.4
% change		*10.0%*	*10.0%*	*10.0%*	*72.7%*	*10.0%*	*10.0%*	*10.0%*	*10.0%*	*46%*	*30.0%*	*20.0%*	*10.0%*	*10.0%*	*10.0%*
% of Total revenues										*9.1%*	*9.8%*	*12.9%*	*8.6%*	*7.4%*	*4.8%*
Total operating expenses	9.0	9.9	10.9	12.0	**41.8**	**13.2**	**14.5**	**16.0**	**17.6**	**61.2**	**75.6**	**98.4**	**115.7**	**123.8**	**134.4**
Operating Profit (Loss)	(0.5)	1.6	1.1	0.6	**2.9**	**0.1**	**19.5**	**(1.2)**	**23.0**	41.3	48.6	14.5	70.0	113.3	274.4
Margin(%)											*39.1%*	*12.8%*	*37.7%*	*47.8%*	*67.1%*
Other income (expense)	(0.0)				(0.0)										
Total other income	(0.0)	-	-	-	(0.0)					-	-	-	-	-	-
Change in fair value of preferred stock warrant liability	(2.6)				(2.6)										
Pretax income	(3.1)	1.6	1.1	0.6	**0.3**	**0.1**	**19.5**	**(1.2)**	**23.0**	41.3	48.6	14.5	70.0	113.3	274.4
Provsion for income taxes					-					-	-	-	-	-	13.7
% Tax Rate															*5.0%*
Net profit (loss) allocable to common stockholders	(3.1)	1.6	1.1	0.6	**0.3**	**0.1**	**19.5**	**(1.2)**	**23.0**	41.3	48.6	14.5	70.0	113.3	260.7
After Tax Margin(%)											*39.1%*	*12.8%*	*37.7%*	*47.8%*	*63.8%*
Basic shares outstanding	13.3	15.3	17.1	17.1	15.7	17.1	17.1	17.1	17.1	17.1	17.2	17.2	17.3	17.4	17.4
Diluted shares outstanding	13.3	15.3	17.1	17.1	15.7	17.1	17.1	17.1	17.1	18.5	18.6	18.7	18.8	18.9	19.0
Basic GAAP EPS	**$ (0.23)**	**$ 0.11**	**$ 0.07**	**$ 0.04**	$ 0.02	**$ 0.00**	**$ 1.14**	**$ (0.07)**	**$ 1.35**	$ 2.42	$ 2.83	$ 0.84	$ 4.05	$ 6.52	$ 14.95
Diluted GAAP EPS	**$ (0.23)**	**$ 0.11**	**$ 0.07**	**$ 0.04**	$ 0.02	**$ 0.00**	**$ 1.14**	**$ (0.07)**	**$ 1.35**	$ 2.24	$ 2.61	$ 0.77	$ 3.72	$ 5.99	$ 13.70

Source: JMP Securities LLC, Company filings

JMP FACTS AND DISCLOSURES

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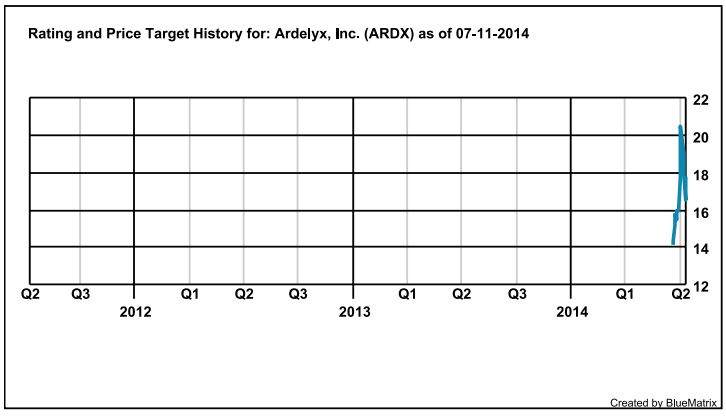
JMP Rating	Regulatory Equivalent	# Co's Under Coverage	*% of Total*	Regulatory Equivalent	# Co's Under Coverage	*% of Total*	# Co's Receiving IB Services in Past 12 Months	*% of Co's With This Rating*
MARKET OUTPERFORM	Buy	265	*59.55%*	Buy	265	*59.55%*	101	*38.11%*
MARKET PERFORM	Hold	139	*31.24%*	Hold	139	*31.24%*	17	*12.23%*
MARKET UNDERPERFORM	Sell	4	*0.90%*	Sell	4	*0.90%*	0	*0%*
COVERAGE IN TRANSITION		37	*8.31%*		37	*8.31%*	0	*0%*
TOTAL:		445	*100%*		445	*100%*	118	*26.52%*

Stock Price Chart of Rating and Target Price Changes:

Note: First annotation denotes initiation of coverage or 3 years, whichever is shorter. If no target price is listed, then the target price is N/A. In accordance with NASD Rule 2711, the chart(s) below reflect(s) price range and any changes to the rating or price target as of the end of the most recent calendar quarter. The action reflected in this note is not annotated in the stock price chart. Source: JMP Securities.



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