BARCLAYS

Equity Research

Healthcare | U.S. Biotechnology

10 April 2014

Celladon Corp.

FDA Grants Breakthrough Designation

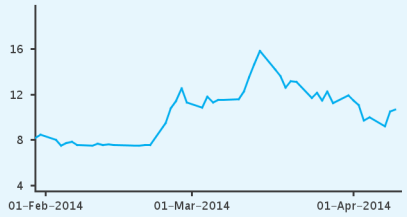
Stock Rating	OVERWEIGHT Unchanged
Industry View	NEUTRAL Unchanged
Price Target	USD 15.00 Unchanged

Price (09-Apr-2014)	USD 10.65
Potential Upside/Downside	+41%
Tickers	CLDN

Market Cap (USD mn)	197
Shares Outstanding (mn)	18.50
Free Float (%)	68.18
52 Wk Avg Daily Volume (mn)	0.2
Dividend Yield (%)	N/A
Return on Equity TTM (%)	N/A
Current BVPS (USD)	-2.59

Source: Thomson Reuters

Price Performance	Exchange-Nasdaq
52 Week range	USD 17.16-7.45



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What's New? CLDN just received Breakthrough Therapy Designation from the FDA for MYDICAR for the reduction of hospitalizations for NYHA Class III and IV chronic heart failure patients. MYDICAR is a gene therapy currently being evaluated for the treatment of patients with systolic heart failure.

Breakthrough and Fast Track designations signify the importance of this therapy: This Breakthrough Designation is a meaningful step forward for CLDN and speaks to the significance of the positive results from the phase 2a (CUPID-1) trial and the longer-term 3 year follow-up. Recall the CUPID-1 trial showed an 88% risk reduction in recurrent clinical events at 1 year (p=0.003) and an 82% reduction at 3 years (p=0.048). The FDA has now granted CLDN both Fast Track and Breakthrough designations, which we believe show the potential significance of this therapy if approved.

CUPID-2 on track to read-out in April 2015: MYDICAR is currently being evaluated in a phase 2b trial (CUPID-2) and enrollment was completed in February and results are on track to be released in April 2015. If results show significant benefits with MYDICAR, management believes it could be accepted as a pivotal trial, and an FDA approval could be granted in 2018. Both of these FDA designations will allow CLDN a more fluid interaction with the FDA and a quicker route to approval if CUPID-2 results are significant. The EMA has also indicated to CLDN that it would accept CUPID-2 as a pivotal trial if the primary endpoint is met.

Significant room for upside: CLDN estimates the initial U.S. target market for MYDICAR at ~350,000 patients. We are using more conservative assumptions and estimate ~100,000 patients are initially eligible for treatment. We are estimating peak U.S. sales of ~$390mn and EU sales of ~$240mn (royalties of~$36mn). Nevertheless, we see significant upside potential to our estimates if CUPID-2 results demonstrate a significant improvement in heart failure symptoms and reduction of clinical events and hospitalizations.

CLDN: Quarterly and Annual EPS (USD)

	2013	2014			2015			Change y/y	
FY Dec	Actual	Old	New	Cons	Old	New	Cons	2014	2015
Q1	N/A	-0.37E	-0.37E	N/A	-0.40E	-0.40E	N/A	N/A	-8%
Q2	N/A	-0.40E	-0.40E	N/A	-0.35E	-0.35E	N/A	N/A	13%
Q3	N/A	-0.41E	-0.41E	N/A	-0.25E	-0.25E	N/A	N/A	39%
Q4	N/A	-0.44E	-0.44E	N/A	-0.27E	-0.27E	N/A	N/A	39%
Year	-26.13A	-1.62E	-1.62E	N/A	-1.27E	-1.27E	N/A	94%	22%
P/E	N/A		N/A			N/A			

Source: Barclays Research.
Consensus numbers are from Thomson Reuters

U.S. Biotechnology

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U.S. Biotechnology **Industry View: NEUTRAL**

Celladon Corp. (CLDN)

Stock Rating: OVERWEIGHT

Income statement ($k)	2013A	2014E	2015E	2016E	CAGR
Revenue	0	0	0	N/A	N/A
EBITDA (adj)	-19,897	-28,544	-24,766	-29,621	N/A
EBIT (adj)	-19,964	-28,698	-26,828	N/A	N/A
Pre-tax income (adj)	-23,100	-28,777	-26,729	N/A	N/A
Net income (adj)	-23,100	-28,777	-26,729	N/A	N/A
EPS (adj) ($)	-26.13	-1.62	-1.27	N/A	N/A
Diluted shares (k)	884.2	17,808.0	21,675.6	N/A	N/A
DPS	N/A	N/A	N/A	N/A	N/A

Margin and return data					Average
EBITDA (adj) margin (%)	N/A	N/A	N/A	N/A	N/A
EBIT (adj) margin (%)	N/A	N/A	N/A	N/A	N/A
Pre-tax (adj) margin (%)	N/A	N/A	N/A	N/A	N/A
Net (adj) margin (%)	N/A	N/A	N/A	N/A	N/A
ROIC (%)	-148.1	-82.3	-33.1	-61.5	-81.2
ROA (%)	-94.4	-65.0	-30.0	-52.1	-60.4
ROE (%)	-158.7	-84.9	-33.5	-62.7	-84.9

Balance sheet and cash flow ($k)					CAGR
Tangible fixed assets	308	5,154	11,092	16,319	275.6%
Intangible fixed assets	N/A	N/A	N/A	N/A	N/A
Cash and equivalents	18,370	36,136	75,588	42,874	32.6%
Total assets	21,154	44,160	89,513	62,137	43.2%
Short and long-term debt	1,044	1,044	1,044	1,044	0.0%
Other long-term liabilities	N/A	N/A	N/A	N/A	N/A
Total liabilities	6,597	10,246	9,723	11,281	19.6%
Net debt/(funds)	-6,859	-24,625	-64,077	-31,363	N/A
Shareholders' equity	14,557	33,914	79,791	50,856	51.7%
Change in working capital	-19,169	14,511	39,938	-34,162	N/A
Cash flow from operations	-16,196	-23,841	-23,474	-25,833	N/A
Capital expenditure	-87	-5,000	-8,000	-8,000	N/A
Free cash flow	1,664	-23,841	-23,474	-25,833	N/A

Valuation and leverage metrics					Average
P/E (adj) (x)	N/A	N/A	N/A	N/A	N/A
EV/EBITDA (adj) (x)	-0.1	0.5	2.2	0.7	0.8
Equity FCF yield (%)	N/A	N/A	N/A	N/A	N/A
EV/sales (x)	N/A	N/A	N/A	N/A	N/A
P/BV (x)	N/A	N/A	N/A	N/A	N/A
Dividend yield (%)	N/A	N/A	N/A	N/A	N/A
Total debt/capital (%)	-89.1	-265.1	-407.8	-160.9	-230.7

Selected operating metrics					Average
SG&A/sales (%)	N/A	N/A	N/A	N/A	N/A
R&D/sales (%)	N/A	N/A	N/A	N/A	N/A
R&D growth (%)	27.1	40.0	-10.0	N/A	19.0
SG&A growth (%)	15.4	64.6	10.0	N/A	30.0

Source: Company data, Barclays Research
Note: FY End Dec

Price (09-Apr-2014) **USD 10.65**
Price Target **USD 15.00**

Why Overweight? We view Celladon as having a favorable risk/reward profile for investors. The company is developing a gene therapy, Mydicar, to treat chronic heart failure. While there are considerable risks associated gene therapy, we also view the market opportunity as significant if the company is successfully develop the product.

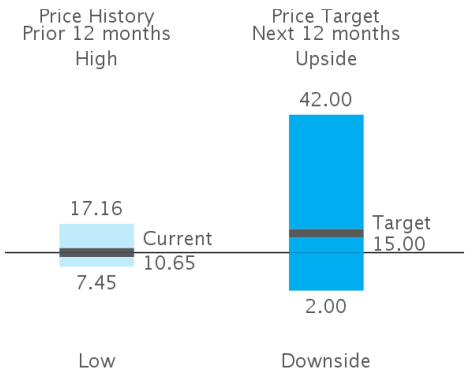
Upside case **USD 42.00**

We see significant upside potential for Celladon. If phase 2b results are positive, we see valuation increasing to $42/share.

Downside case **USD 2.00**

We see downside risks at approximately $2/share if Mydicar gene therapy does not receive approval. This assumes some value attributed to the early stage small molecule platform and some cash.

Upside/Downside scenarios



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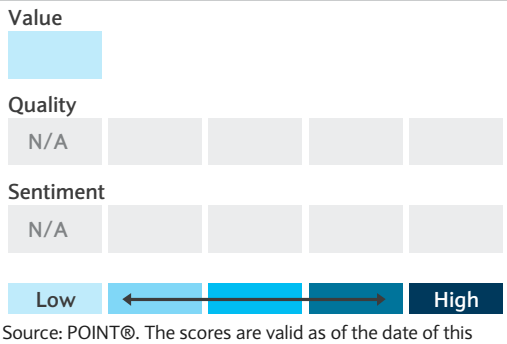

Source: POINT®. The scores are valid as of the date of this report and are independent of the fundamental analysts' views. To view the latest scores, please go to the equity company page on Barclays Live.

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Primary Stocks (Ticker, Date, Price)

Celladon Corp. (CLDN, 09-Apr-2014, USD 10.65), Overweight/Neutral, A/C/D/J/K/L/M

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Dendreon Corp. (DNDN)	Fibrocell Science Inc. (FCSC)	Gilead Sciences (GILD)
GlycoMimetics Inc. (GLYC)	Halozyme Therapeutics Inc. (HALO)	Idenix Pharmaceuticals (IDIX)
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Regeneron Pharmaceuticals (REGN)	Tetraphase (TTPH)	Trevena Inc. (TRVN)
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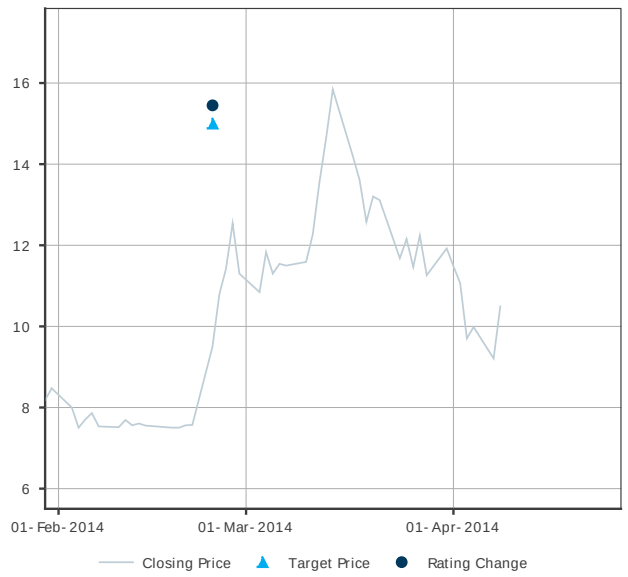
IMPORTANT DISCLOSURES CONTINUED

Celladon Corp. (CLDN)

Stock Rating	Industry View
OVERWEIGHT	**NEUTRAL**

USD 10.65 (09-Apr-2014)

Rating and Price Target Chart - USD (as of 09-Apr-2014) **Currency=USD**



Date	Closing Price	Rating	Adjusted Price Target
24-Feb-2014	9.50	Overweight	15.00

Source: Thomson Reuters, Barclays Research

Historical stock prices and price targets may have been adjusted for stock splits and dividends.

Source: IDC, Barclays Research

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Valuation Methodology: Our price target is based on a probability-adjusted NPV analysis. We have only included the systolic heart failure indication in our model which contributes ~$12/share. Including cash of ~$3/share, we arrive at our price target of $15.

Risks which May Impede the Achievement of the Barclays Research Price Target: Downside risks include failure of CUPID-2 trial, need for phase 3 trial, and inability to receive FDA approval for Mydicar.

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