

Celladon Corp.

Mydicar on Track

What's New? CLDN just announced 4Q13 and full year earnings and provided a review of its pipeline.

CUPID-2 on track to read-out in April 2015: Mydicar is currently being evaluated in a phase 2b trial (CUPID-2) for systolic heart failure. The trial completed enrollment 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. The EMA has also indicated to Celladon that it would accept CUPID-2 as a pivotal trial if the primary endpoint is met. We expect the FDA approval threshold for Mydicar to be high, so we have assigned a low probability of success (20%). However, we do believe Mydicar has a lower level of risk than other gene therapies, given the EMA and FDA's familiarity with and recognition of AAV1 vectors as a potentially safe delivery mechanism.

Significant room for upside: CLDN estimates the initial US 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 also assume a low penetration level in our model. We are estimating peak US 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.

Diabetes will be the first indication from the small molecules program: In February, CLDN entered into an options agreement with Servier to develop and commercialize SERCA2b modulators for type 2 diabetes and other metabolic diseases. The diabetes indication will be the first from the small molecule program and Servier will have the option to license the product for ex-US regions. Both companies will support the discovery phase but Servier will be responsible for further development efforts if the option is exercised.

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	-0.36E	-0.37E	N/A	N/A	-0.40E	N/A	N/A	-8%
Q2	N/A	-0.36E	-0.40E	N/A	N/A	-0.35E	N/A	N/A	13%
Q3	N/A	-0.36E	-0.41E	N/A	N/A	-0.25E	N/A	N/A	39%
Q4	N/A	-0.36E	-0.44E	N/A	N/A	-0.27E	N/A	N/A	39%
Year	-26.13A	-1.43E	-1.62E	N/A	N/A	-1.27E	N/A	94%	22%
P/E	N/A		N/A			N/A			

Source: Barclays Research.

Consensus numbers are from Thomson Reuters

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PLEASE SEE ANALYST CERTIFICATION(S) AND IMPORTANT DISCLOSURES BEGINNING ON PAGE 3.

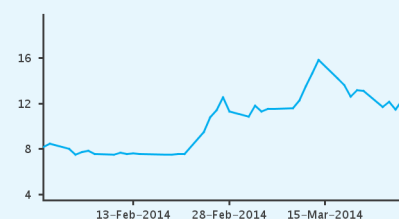
Stock Rating	OVERWEIGHT
	Unchanged
Industry View	NEUTRAL
	Unchanged
Price Target	USD 15.00
	Unchanged

Price (28-Mar-2014)	USD 11.26
Potential Upside/Downside	+33%
Tickers	CLDN

Market Cap (USD mn)	208
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



[Link to Barclays Live for interactive charting](#)

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)	-0.2	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

Price (28-Mar-2014) USD 11.26
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.

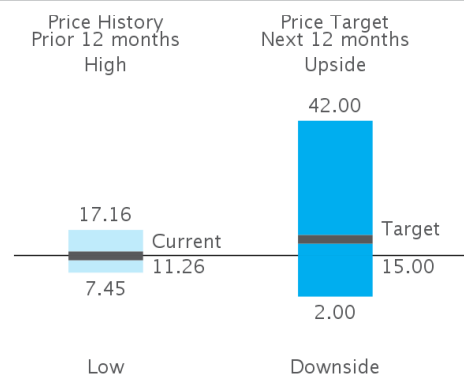
Upside case USD 42.00

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

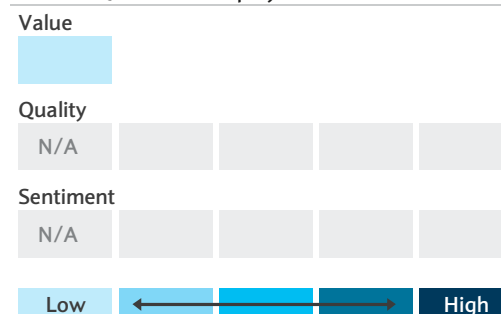
Downside case USD 2.00

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



POINT® Quantitative Equity Scores



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.

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

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Primary Stocks (Ticker, Date, Price)

Celladon Corp. (CLDN, 28-Mar-2014, USD 11.26), Overweight/Neutral, A/C/D/J/K/L/M

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Overweight - The stock is expected to outperform the unweighted expected total return of the industry coverage universe over a 12-month investment horizon.

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Celgene Corp. (CELG)	Celladon Corp. (CLDN)	Dendreon Corp. (DNDN)
Fibrocell Science Inc. (FCSC)	Gilead Sciences (GILD)	GlycoMimetics Inc. (GLYC)
Halozyne Therapeutics Inc. (HALO)	Idenix Pharmaceuticals (IDIX)	Incyte Corp. (INCY)
Intrexon Corp. (XON)	Medivation Inc. (MDVN)	Regeneron Pharmaceuticals (REGN)
Tetraphase (TTPH)	Trevena Inc. (TRVN)	Vertex Pharmaceuticals (VRTX)

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A high/low Quality score indicates financial statement strength/weakness. Measures of quality include ROIC and corporate default probability.

A high/low Sentiment score indicates bullish/bearish market sentiment. Measures of sentiment include price momentum and earnings revisions.

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Celladon Corp. (CLDN)

USD 11.26 (28-Mar-2014)

Stock Rating

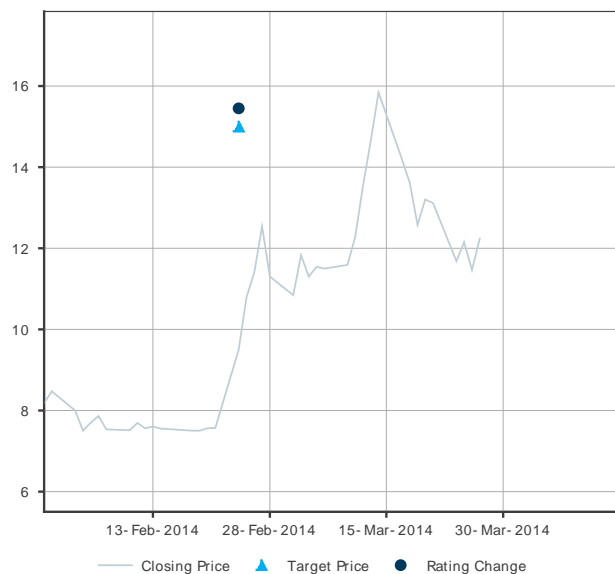
OVERWEIGHT

Industry View

NEUTRAL

Rating and Price Target Chart - USD (as of 28-Mar-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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