COWEN
AND COMPANY

Biotechnology

Radius Health

Equity Research

Company Quick Take

December 22, 2014

Price: $32.03 (12/19/2014)

Price Target: NA

OUTPERFORM (1)

Eric Schmidt, Ph.D.
646.562.1345
eric.schmidt@cowen.com

Jeff Chen, Ph.D.
646.562.1417
jeff.chen@cowen.com

Key Data

Symbol	NASDAQ: RDUS
Market Cap (MM)	$1,054.6

Abaloparatide Succeeds In Phase III With Compelling Data

The Cowen Insight

Radius Health announced positive Phase III results on abaloparatide in osteoporosis. The drug demonstrated a reduction in fracture rate vs. placebo (83%; p<0.0001), superior gains in bone mineral density relative to LLY's Forteo, and a clean safety profile. These results place abaloparatide on track to become the new anabolic standard, and gain meaningful share from Forteo (2103 sales of $1.2B).

The News: Radius Health announced positive top-line results from its Phase III ACTIVE trial evaluating abaloparatide for the reduction of fractures in postmenopausal osteoporosis. Recall abaloparatide is an injectable synthetic analog of the human PTH related protein (PTHrP) optimized to deliver enhanced potency. Patients randomized to abaloparatide (n=690) demonstrated a statistically significant 83% (0.72% vs. 4.36%, p<0.0001) reduction in vertebral fractures versus placebo (n=711). Abaloparatide was also directionally superior to a Forteo open-label comparator arm (n=717), which showed a statistically significant 78% reduction in vertebral fractures (fracture rate of 0.98%, p<0.0001) vs. placebo.

On secondary endpoints, abaloparatide demonstrated statistically significant fracture rate reductions of 43% and 41% in the adjudicated non-vertebral fracture subgroup and adjudicated clinical fracture subgroup, respectively. Abaloparatide also achieved a statistically significant difference in the time to first incident of non-vertebra fracture in both of these subgroups. It appears that Forteo did not achieve statistical significance on any of these metrics. In terms of another secondary endpoint, bone mineral density (BMD), abaloparatide induced changes from baseline at the hip and femoral neck that were statistically superior to placebo and Forteo at 6-months, 12-months, and 18-months (p<0.0001). At the lumbar spine, BMD changes were statistically better than placebo at 6-months, 12-months, and 18-months (p<0.0001) and statistically better than Forteo at 6-months and 12-months (p<0.0001).

In terms of safety, abaloparatide's profile continues to be clean. The drug was associated with a slightly higher rate of dizziness (abaloparatide 10.0%; placebo 6.1%; Forteo 7.3%), but directionally lower rates of other common AEs including of back pain (abaloparatide 8.6%, placebo 10.0%; Forteo 7.2%), arthralgia (abaloparatide 8.5%; placebo 9.8%; Forteo 8.6%). and upper respiratory infection (abaloparatide 9.0%; placebo 8.9%; Forteo 9.8%). Importantly, as in Phase II trials, abaloparatide was associated with a lower incidence of hypercalcemia (6.0% vs. 10.8%) than Forteo. We remind investors that unlike Forteo, abaloparatide does not require cold storage, a modest convenience benefit. Radius expects to present full data from the trial in a future scientific meeting.

Our Take: We view the results from the ACTIVE trial as consistent with abaloparatide's Phase II studies, supportive of WW regulatory filings, and indicative of a differentiated profile relative to LLY's Forteo. Abaloparatide's efficacy and safety profile are now well established. The drug's ability to dramatically improve BMD has translated into highly

statistically significant reductions in vertebral, non-vertebral fractures, and clinically meaningful fractures. This plus a clean adverse event profile should support FDA and EMA filings in H2:15. Perhaps just as importantly, ACTIVE indicates that abaloparatide is also more potent than Forteo. Relative to Forteo, abaloparatide improved bone mineral density faster and to a greater degree in the spine, hip, and femur. As BMD is the metric used by physicians to assess response to an anabolic agent, we think these data will be highly impactful in the marketplace. Moreover, abaloparatide reduced non-vertebral and clinically meaningful fractures in a statistically significant fashion. It does not appear that Forteo was able to hit these endpoints (Radius management indicates that all statistically significant findings were in the release, yet Forteo's results on these endpoints were excluded). Hence in a side-by-side comparison it appears that abaloparatide was able to achieve important fracture rate endpoints that Forteo was not able to achieve.

It total, the data support our view that abaloparatide SubQ is a best-in-class, wholly-owned drug for osteoporosis with $700MM+ in peak potential. ***We think RDUS shares, which closed on Friday at a market cap of ~$1B, dramatically underestimate abaloparatide's value.*** Moreover, we believe the drug's value to Eli Lilly as a potential franchise extension to Forteo may be even greater given the ease with which LLY might be able to transition patients to abaloparatide ahead of a potential patent expiration on Forteo. ***We think investors should buy RDUS shares today, and take advantage of what appears to be a poorly appreciated investment opportunity.***

What's Next For Radius Health? In Q2:15 RDUS expects to complete its 6-month extension study for abaloparatide. RDUS is on track to file a NDA in the U.S. with a launch possible in H2:16. A MAA submission in the EU is likely in H2:15. RDUS is also working on a patch formulation for abaloparatide. A Phase Ib study on RAD1901 in breast cancer patients could be initiated by year end.

Our Thesis On RDUS: Abaloparatide, a peptide analog of the PTH-related protein, an anabolic drug candidate for osteoporosis has demonstrated succeed in a Phase III trial. We view abaloparatide as differentiated relative to Forteo, and capable of capturing much of that drug's $1B+ market. RAD1901, a selective estrogen receptor degrader, has demonstrated proof of concept data and showed the drug candidate to be well tolerated, capable of penetrating the CNS, and active at suppressing the estrogen receptor. Radius is financed through abaloparatide's regulatory submissions. We expect greater investor appreciation for abaloparatide's Phase III data to drive significant stock outperformance.

Valuation Methodology And Risks

Valuation Methodology

Biotechnology:

In calculating our 12-month target price, we employ one or more valuation methodologies, which include a discounted earnings analysis, discounted cash flow analysis, net present value analysis and/or a comparable company analysis. These analyses may or may not require the use of objective measures such as price-to-earnings or price-to-sales multiples as well as subjective measures such as discount rates.

We make investment recommendations on early stage (pre-commercial) biotechnology companies based upon an assessment of their technology, the probability of pipeline success, and the potential market opportunity in the event of success. However, because these companies lack traditional financial metrics, we do not believe there are any good methodologies for assigning a specific target price to such stocks.

Investment Risks

Biotechnology:

There are multiple risks that are inherent with an investment in the biotechnology sector. Beyond systemic risk, there is also clinical, regulatory, and commercial risk. Additionally, biotechnology companies require significant amounts of capital in order to develop their clinical programs. The capital-raising environment is always changing and there is risk that necessary capital to complete development may not be readily available.

Risks To The Price Target

Radius Health is unprofitable, has no approved products, and will likely need to raise additional capital from the public markets prior to turning profitable. There is no guarantee that abaloparatide's Phase III study will meet its primary endpoint of fracture reduction. Even if successful, abaloparatide may face other commercial and competitive risks that thwart adoption.

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Addendum

Stocks Mentioned In Important Disclosures

Ticker	Company Name
RDUS	Radius Health

Analyst Certification

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Cowen and Company, LLC. New York (646) 562-1000 **Boston** (617) 946-3700 **San Francisco** (415) 646-7200 **Chicago** (312) 577-2240 **Cleveland** (440) 331-3531 **Atlanta** (866) 544-7009 **London** (affiliate) 44-207-071-7500

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Cowen and Company Rating System effective May 25, 2013

Outperform (1): The stock is expected to achieve a total positive return of at least 15% over the next 12 months

Market Perform (2): The stock is expected to have a total return that falls between the parameters of an Outperform and Underperform over the next 12 months

Underperform (3): Stock is expected to achieve a total negative return of at least 10% over the next 12 months

Assumption: The expected total return calculation includes anticipated dividend yield

Cowen and Company Rating System until May 25, 2013

Outperform (1): Stock expected to outperform the S&P 500

Neutral (2): Stock expected to perform in line with the S&P 500

Underperform (3): Stock expected to underperform the S&P 500

Assumptions: Time horizon is 12 months; S&P 500 is flat over forecast period

Cowen Securities, formerly known as Dahlman Rose & Company, Rating System until May 25, 2013

Buy – The fundamentals/valuations of the subject company are improving and the investment return is expected to be 5 to 15 percentage points higher than the general market return

Sell – The fundamentals/valuations of the subject company are deteriorating and the investment return is expected to be 5 to 15 percentage points lower than the general market return

Hold – The fundamentals/valuations of the subject company are neither improving nor deteriorating and the investment return is expected to be in line with the general market return

Cowen And Company Rating Definitions

Distribution of Ratings/Investment Banking Services (IB) as of 09/30/14

Rating	Count	Ratings Distribution	Count	IB Services/Past 12 Months
Buy (a)	440	59.95%	105	23.86%
Hold (b)	278	37.87%	10	3.60%
Sell (c)	16	2.18%	0	0.00%

(a) Corresponds to "Outperform" rated stocks as defined in Cowen and Company, LLC's rating definitions. (b) Corresponds to "Market Perform" as defined in Cowen and Company, LLC's ratings definitions. (c) Corresponds to "Underperform" as defined in Cowen and Company, LLC's ratings definitions.

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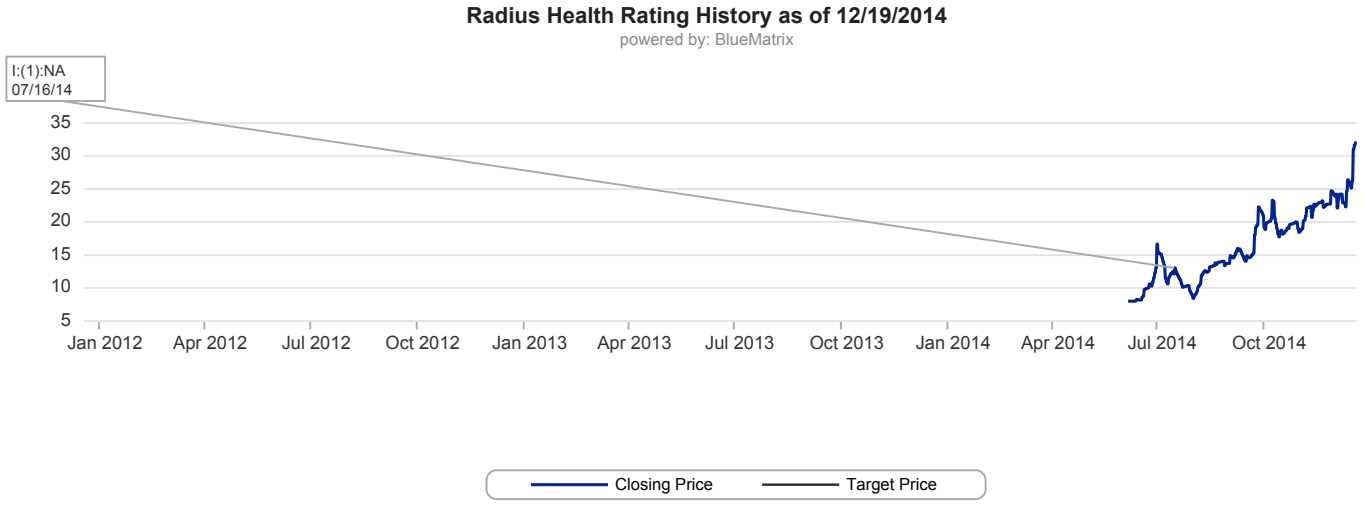

Legend for Price Chart:

I = Initiation | 1 = Outperform | 2 = Market Perform | 3 = Underperform | UR = Price Target Under Review | T = Terminated Coverage | $xx = Price Target | NA = Not Available | S=Suspended

Points Of Contact

Reaching Cowen

Main U.S. Locations

New York
599 Lexington Avenue
New York, NY 10022
646.562.1000
800.221.5616

Boston
Two International Place
Boston, MA 02110
617.946.3700
800.343.7068

Cleveland
20006 Detroit Road
Suite 100
Rocky River, OH 44116
440.331.3531

San Francisco
555 California Street, 5th Floor
San Francisco, CA 94104
415.646.7200
800.858.9316

Atlanta
3399 Peachtree Road NE
Suite 417
Atlanta, GA 30326
866.544.7009

Chicago
181 West Madison Street
Suite 1925
Chicago, IL 60602
312.577.2240

International Locations

Cowen International Limited

London
1 Snowden Street - 11th Floor
London EC2A 2DQ
United Kingdom
44.20.7071.7500

Cowen and Company (Asia) Limited

Hong Kong
Suite 1401 Henley Building
No. 5 Queens Road Central
Central, Hong Kong
852 3752 2333

@CowenResearch

Cowen and Company