### **Radius Health**

RDUS: NASDAQ: US\$19.80

**BUY** 

**Target: US\$30.00** 

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#### **COMPANY STATISTICS:**

Forecast Return:	52%
Shares Out (M):	26.0
Market Cap (M):	US\$514.8
52-week Range:	7.46 - 24.28
Avg. Daily Vol. (000s):	110.5

#### **EARNINGS SUMMARY:**

LAMMINGS SCHIMANT.						
FYE Dec		2013A	2014E	2015E	2016E	
Revenue (M):		0.0	0.0	0.0	82.1	
EPS:		(3.97)	(54.39)	(2.78)	(1.53)	
Revenue (M):	Q1	0.0	0.0	0.0A	-	
	Q2	0.0	0.0	0.0A	-	
	Q3	0.0	0.0	0.0	-	
	Q4	0.0	0.0	0.0	-	
Total		0.0	0.0	0.0	82.1	
EPS:	Q1		(50.45)	(0.70)A	-	
	Q2		(2.22)	(0.77)A	-	
	Q3	0.00	(0.88)	(0.69)	-	
	Q4	0.00	(0.84)	(0.62)	-	
Total		(3.97)	(54.39)	(2.78)	(1.53)	

#### SHARE PRICE PERFORMANCE:



Source: Interactive Data Corporation

#### **COMPANY DESCRIPTION:**

Radius is a biotechnology company focused on discovering, developing, and commercializing drugs for endocrine disorders. Its wholly owned lead asset is abaloparatide, in Phase 3 for treatment of postmenopausal osteoporosis.

All amounts in US\$ unless otherwise noted.

Life Sciences -- Biotechnology

# ODANACATIB DELAY CONTRASTS WITH CLEAN SAFETY PROFILE FOR ABALOPARATIDE

#### **Investment highlights**

Odanacatib safety reporting needs work, filing delayed to 2015 Merck will delay its NDA filing for odanacatib to 2015, citing an agreement with FDA to better characterize adverse event reporting, which we believe is related to a higher rate of stroke vs. placebo seen in Phase 3 (1.4% vs. 1.1%, hazard ratio 1.28). We believe the delay reflects FDA's strong concern regarding safety in osteoporosis.

#### Abaloparatide safety clean, should aid regulatory path

Abaloparatide data to date suggest a good safety profile, with 50% less hypercalcemia vs. Forteo, and similar osteosarcoma risk, which we believe will be well-received by FDA.

#### Odanacatib and abaloparatide target different markets

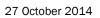
Importantly, our abaloparatide revenues are tied to share gains from Forteo only, not the broader lower-risk osteoporosis market where odanacatib may be used. We do not expect that odanacatib would be used in higher risk patients due to its slower action in building bone.

#### Expect positive Phase 3 abaloparatide data YE14

We continue to expect positive Phase 3 data for abaloparatide vs. placebo and Forteo by YE14, which should move shares higher. We expect positive vertebral and non-vertebral fracture data for abaloparatide vs. placebo at 18 months.

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## **VALUATION**

Figure	1:	Radius	va	luation	

Product	Peak Sales (\$MM)	Year	NPV at launch	Probability Adjustment	Current Value (\$MM)	Scenario probability	Value / Share
abaloparatide							
US	\$822	2022	\$1,317	65%	\$670	100%	\$23
Ex-US - co-promote	\$346	2021	\$410	65%	\$182	50%	\$3
Ex-US - royalty	\$346	2021	\$196	65%	\$127	50%	\$2
Total abaloparatide					\$852		\$28
Total Product Value					852		\$28
Cash					60		\$2
Total Equity Value					912		\$30
Shares Outstanding (MM)					29		

Risk-Free Rate	3.0%
Beta	1.8
Risk Premium	5%
Discount Rate	12%

Source: Canaccord Genuity, Inc. estimates



Figure 2: Radius income	statement											
		Rad	ius Hea	alth, In	C.							
(000's) [FY - DEC]				,								
Revenues	2013A	1Q14A	2Q14A	3Q14E	4Q14E	2014E	2015E	2016E	2017E	2018E	2019E	2020E
abaloparatide - US								82,120	239,867	357,419	465,944	583,042
abaloparatide - Ex-US								-	90,548	204,751	251,503	298,717
Total								82,120	330,415	562,170	717,447	881,759
Income Statement	2013A	1Q14A	2Q14A	3Q14E	4Q14E	2014E	2015E	2016E	2017E	2018E	2019E	2020E
Total Revenue	_	_	_		_	-	_	82,120	264,315	457,747	594,210	738,375
COGS	_				_	_	_	16,424	52,863	91,549	118,842	147,675
Gross Profit	-	-	-	-	-	-	-	65,696	211,452	366,198	475,368	590,700
Operating Expenses												
Research and development	60,536	9,717	10,618	14,142	18,096	52,573	78,094	63,671	60,593	70,860	90,593	124,479
abaloparatide-SC	45,977	8,107	9,728	11,674	14,009	43,518	31,170	21,819	15,273	15,273	15,273	15,273
abaloparatide-TD	11,459	185	278	416	624	1,503	24,975	17,483	12,238	8,566	5,996	4,198
RAD1901	_				1,000	1,000	12,100	14,520	23,232	37,171	59,474	95,158
RAD140	_	-										
other	3,100	1,425	1,710	2,052	2,462	7,649	9,850	9,850	9,850	9,850	9,850	9,850
General and administrative	6,829	2,139	3,070	2,500	2,700	10,409	13,200	57,484	85,902	102,993	133,697	166,134
Total Operating Expense	67,365	11,856	13,688	16,642	20,796	62,982	91,294	121,155	146,495	173,854	224,291	290,613
EBITDA												
Operating income	(67,365)	(11,856)	(13,688)	(16,642)	(20,796)	(62,982)	(91,294)	(55,459)	64,957	192,344	251,078	300,087
Other income (expense), net	9,085	(2,233)	1,727	1,727	1,727	2,948	9,350	2,948	9,350	2,948	9,350	2,948
Loss on retirement of note payable		,	(203)									
Interest (expense) income, net	(2,410)	(399)	(445)	(445)	(445)	(1,734)	(4,358)	(1,734)	(4,358)	(1,734)	(4,358)	(1,734)
Accretion of preferred stock		(4,969)	(4,031)									
Pre-tax income (GAAP)	(60,690)	(19,457)	(16,640)	(15,360)	(19,514)	(70,971)	(86,302)	(54,245)	69,949	193,558	256,070	301,301
Pre-tax income (non-GAAP)												
Taxes (GAAP)	-				-	-	-		25,881	71,617	94,746	111,481
Tax rate (GAAP)	37%	37%	37%	37%	37%	37%	37%	37%	37%	37%	37%	37%
Net Income (GAAP)	(60,690)	(19,457)	(16,640)	(15,360)	(19,514)	(70,971)	(86,302)	(54,245)	44,068	121,942	161,324	189,820
GAAP EPS (diluted)	(\$3.97)	(\$50.45)	(\$2.22)	(\$0.88)	(\$0.84)	(\$54.39)	(\$2.78)	(\$1.53)	\$1.18	\$3.11	\$3.92	\$4.39
Diluted shares outstanding	15,278	386	7,500	17,400	23,200	12,121	31,539	35,562	37,340	39,207	41,167	43,226

Source: Company reports, Canaccord Genuity, Inc.



#### **Investment risks**

Risks to our outlook and price target include the following: the Phase 3 study for abaloparatide in osteoporosis may be negative, or fail to meet investor expectations, resulting in downside to shares and our price target. Also, Phase 3 data may be positive in terms of efficacy, but show an unexpected safety signal, also resulting in downside to our price target. Antibody formation was been seen in Phase 2 studies, with one patient showing potential evidence of neutralizing antibodies.

Even assuming positive Phase 3 data for subcutaneous abaloparatide in osteoporosis, FDA approval may be delayed or may not occur at all, also resulting in downside to shares and our price target. FDA may also grant approval, but require large, lengthy and expensive post-approval studies, which could also result in downside to shares and our price target.

Clinical data from other osteoporosis products including anti-sclerostin antibodies from Amgen, Merck, Eli Lilly and Novartis could be viewed as superior to abaloparatide, pressuring shares. Competition from existing and new osteoporosis products could also result in lower revenues that expected, leading to downside to our estimates and the share price.

Although unlikely, a paragraph 4 challenge could be filed against Lilly's Forteo, a molecule closely related to abaloparatide, which investors may interpret as increasing risk for abaloparatide, and pressuring Radius shares. Forteo was approved as an NDA, where the ANDA pathway is well established. Even though Forteo is essentially a biologic, since it is a peptide, it is feasible although unlikely that a generic challenger could emerge. FDA has approved a generic version of Lovenox, a biologic approved via the NDA pathway, although the process took many years. If a generic version of Forteo were to reach the market, usage of abaloparatide could decline, resulting in downside to our estimates and price target. Also, if FDA were to approve a generic version of Copaxone, a peptide used to treat multiple sclerosis, investors may see increased risk of a generic challenge and approval for abaloparatide, as both products are classified as NDA filings for biologic peptides.

A transdermal microneedle formulation for abaloparatide may not be feasible, which investors may view as negative for life cycle management and commercial competitive positioning for Radius, pressuring shares. Even if a microneedle formulation can be developed to show equal efficacy to the subcutaneous formulation, FDA may require a full clinical study versus a bridging study, which would require additional funding and time to approval.



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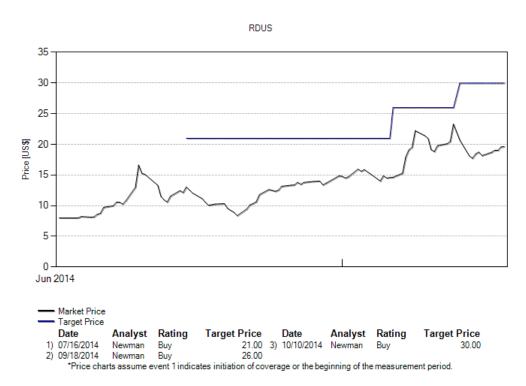
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#### **Site Visit:**

An analyst has visited Radius Health's material operations in Cambridge, Massachusetts. No payment or reimbursement was received from the issuer for the related travel costs.

#### Price Chart:\*



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Coverage Universe					
			IB Clients		
Rating	#	%	%		
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Speculative Buy	53	5.1%	54.7%		



Hold	317	30.5%	13.9%
Sell	43	4.1%	2.3%
	1041	100.0%	

\*Total includes stocks that are Under Review

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Radius Health	1A, 2, 3, 5, 7

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