Radius Health (RDUS)

Initiating with Buy: Potential New Option for Osteoporosis

BUY
Price target $17.00
Price $12.14

EQUITY RESEARCH AMERICAS

Key Takeaway

Ahead of Ph3 data in 12/14, we view highly likely Ph3 success for abaloparatide-SC in osteoporosis (achieving primary endpoint of new vertebral fracture reduction vs. placebo) and potential for better efficacy in some measures vs. Forteo (~$1.25B in 2013 sales), not factored in current share price. At current modest valuation (EV of ~$300M), we see limited downside risks and meaningful potential upside.

We are initiating coverage of Radius Health with a Buy rating and a $17 PT. In 6/14, JEF served as a joint book-running manager for RDUS's initial public offering (~$52M in net proceeds at $8/sh). Lead product abaloparatide-SC (PTHrP) is the most advanced anabolic (bone formation) agent in development for osteoporosis, with Ph3 data expected in 12/14 (potential NDA filing in ~mid-2015). Based on positive Ph2 data, we view Ph3 achieving primary endpoint (reduction in new vertebral fractures vs. placebo at 18 mo) as highly likely, with potential for better efficacy in some measures (vs. Forteo, ~$1.25B in 2013 sales). Thus, we view risk/reward as attractive at current modest valuation (implying no advantage over Forteo).

Advantages of abaloparatide-SC vs. Forteo in non-vertebral fracture risk reduction is key to commercial success, according to endocrinologists. Based on Ph2 data (~2% BMD increase over Forteo in hip and femoral neck) and preclinical monkey data (increased bone strength at both vertebral & non-vertebral sites over 16 months), coupled with limited efficacy of Forteo in non-vertebral sites (vs. vertebral sites), RDUS expects potential superiority vs. Forteo for non-vertebral fracture risk reduction (although not powered to show such).

We project abaloparatide-SC peak U.S./EU sales potential at ~$500M in 2027. Our assumptions include: abaloparatide-SC showing advantages over Forteo (e.g., numerically higher fracture risk reduction & lower hypercalcemia) in Ph3; U.S./EU launches in 2017/2018 & market exclusivity thru 2028/2027. Risks to our assumptions include (1) no advantage of abaloparatide-SC vs. Forteo in Phase 3; (2) potential Forteo generic entry (>2018); and (3) competition from AMGN's romosozumab (anti-sclerostin mAb; Ph3 data in 1H16 & potential market entry by YE17).

Valuation/Risks

Our $17 PT is based on an NPV analysis of abaloparatide-SC U.S./EU sales/royalty. Risks for RDUS are primarily on abaloparatide-SC, including: (1) clinical/regulatory delays/failure; (2) slow commercial uptake and/or competition and (3) general industry risks.

USD	*Prev.*	2014E	*Prev.*	2015E	*Prev.*	2016E	*Prev.*	2017E
Rev. (MM)	--	0.0	--	0.0	--	31.5	--	26.3
EPS								
Mar	--	(50.45)A	--	--	--	--	--	--
Jun	--	(0.54)	--	--	--	--	--	--
Sep	--	(0.48)	--	--	--	--	--	--
Dec	--	(0.51)	--	--	--	--	--	--
FY Dec	--	(2.41)	--	(1.44)	--	(1.14)	--	(1.73)

EPS: RDUS completed its IPO in 2Q14

Financial Summary	
Book Value (MM):	($296.2)
Book Value/Share:	($10.14)
Net Debt (MM):	($55.1)
Long-Term Debt (MM):	$25.0
Cash/Share:	$3.28
Cash (MM):	$80.1

Market Data	
52 Week Range:	$17.32 - $7.46
Total Entprs. Value (MM):	$299.4
Market Cap. (MM):	$354.5
Shares Out. (MM):	29.2
Float (MM):	5.4
Avg. Daily Vol.:	NA

*General: Above figures for Financial Summary and Market Data reflect post-IPO estimates

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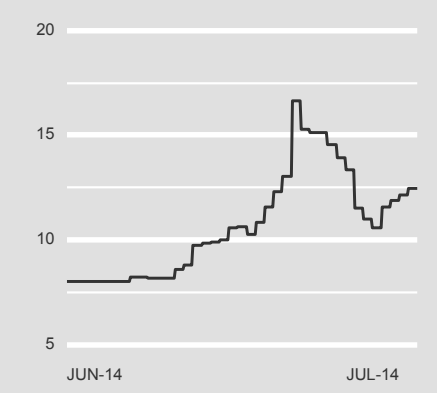
Price Performance



Radius Health

Buy: $17 Price Target

THE LONG VIEW

Scenarios

Target Investment Thesis

- Phase 3 data for lead product abaloparatide-SC in osteoporosis is expected in December 2014
- Our estimated cash at end-2Q14 of~$80M is roughly sufficient thru 2015
- Our NPV analysis puts a target price of $17 per share including abaloparatide-SC (~$12/sh for U.S. sales and ~$5/sh for EU sales)

Upside Scenario

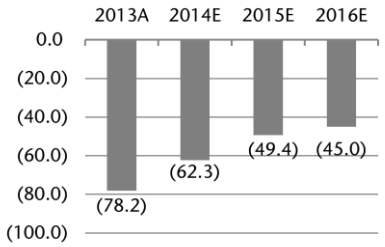
- Phase 3 data for abaloparatide-SC showing superiority vs. Forteo in non-vertebral fracture risk reduction
- Better-than-expected sales of abaloparatide-SC in osteoporosis
- On 100% probability of success for abaloparatide-SC in U.S./EU and 50% higher sales vs. our estimates, our NPV analysis pegs a fair value for RDUS shares at $32

Downside Scenario

- Clinical/regulatory failure of abaloparatide-SC
- Slower than expected commercial uptake of abaloparatide-SC
- Clinical failure of RAD-1901 in BCBM
- On 50% lower abaloparatide-SC sales in U.S./EU vs. our estimates, our NPV analysis pegs a fair value for RDUS shares at $8

Long Term Analysis

Net Income/Loss ($ in MM)



Source: FactSet, Jefferies estimates

Long Term Financial Model Drivers

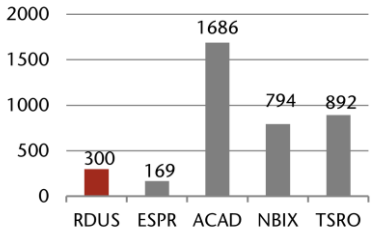
LT revenue CAGR ('17-'22)	**72%**
Organic Revenue Growth	**72%**
Acquisition Contribution	**0%**
Gross Margin Expansion	**N/A**

Other Considerations

For lead abaloparatide-SC, we view achieving primary endpoint of fracture risk reduction vs. placebo as highly likely (data in 12/14). However, key to commercial success lies in abaloparatide-SC demonstrating superiority vs. Forteo (~$1.25B in 2013 sales) for BMD increases (numerical increases shown in Phase 2) and more importantly for non-vertebral fracture risk reduction, which we view to provide meaningful upside from current valuation (EV of ~$300M).

Peer Group

Enterprise Value ($ in MM)



Source: FactSet, Jefferies estimates

Recommendation / Price Target

Ticker	Rec.	PT
RDUS	**Buy**	**$17**
ESPR	NC	N/A
ACAD	Buy	$38
NBIX	Buy	$21
TSRO	NC	N/A
CLVS	NC	N/A

Catalysts

- Topline 18-months Phase 3 fracture risk reduction data for abaloparatide-SC in December 2014
- Update on abaloparatide-TD patch in 4Q14
- Potential initiation of second part of Phase 1 for RAD1901 in ER-positive BCBM by end-2014
- Abaloparatide-SC 24-months extension study data in 2Q15

Company Description

Radius Health, Inc., IPOed on 6/5/14, is a biopharmaceutical company focused on developing therapies for osteoporosis and other endocrine diseases. The company's lead product is abaloparatide-SC (BA058), a novel synthetic peptide analog of parathyroid hormone-related protein (PTHrP), with topline data from ongoing Phase 3 for osteoporosis expected in December 2014. Additional pipeline products include a transdermal (TD) formulation of abaloparatide, abaloparatide-TD; RAD1901, an oral selective estrogen receptor down-regulator/degrader (SERD) for the treatment of breast cancer brain metastases (BCBM) and vasomotor symptoms; and RAD140, a non-steroidal selective androgen receptor modulator. Radius was founded in 2003 and is headquartered in Cambridge, Massachusetts.

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Executive Summary

We are initiating coverage of Radius Health with a Buy rating and $17 price target. RDUS is a clinical stage company with Phase 3 data from lead product abaloparatide-SC (BA058; PTHrP) for PMO expected in Dec. 2014. Positive Phase 2 data points to likely Phase 3 success (reduction in vertebral fracture vs. placebo). However, key to commercial success likely depends on its ability to show superiority over competitor Forteo (~$1.25B in 2013 sales). Endocrinologists note abaloparatide-SC would be a very attractive new option if it shows superiority vs. Forteo in non-vertebral fracture reduction (where Forteo shows limited efficacy with risk reduction of ~35% vs. 65% in vertebral fractures). With likely achieving primary endpoint and potential for superior efficacy (vs. Forteo), we view risk/rewards as attractive at current modest valuation (EV of ~$300M).

Positive Phase 2 data points to likely Phase 3 success for abaloparatide-SC (vs. placebo). In Phase 2 for postmenopausal osteoporosis (PMO, n=221), abaloparatide-SC showed a statistically significant (vs. placebo) and numerically higher (vs. Forteo) BMD improvement at vertebral & non-vertebral sites, with ~50% lower hypercalcemia vs. Forteo. While there is no clear correlation between BMD increase and fracture reduction (Phase 3 endpoint), based on Forteo Phase 3 data, magnitude of BMD increase with abaloparatide-SC vs. placebo in Phase 2 (+12.94% vs. +0.74% in total spine BMD at 12 months) should translate into vertebral fracture reduction (vs. placebo), if Phase 2 is replicated in Phase 3. For non-vertebral fracture, RDUS expects abaloparatide-SC to show superiority vs. Forteo on (1) numerically higher BMD improvement in Phase 2 (e.g., +2.60% vs. 0.45% in hip BMD at 6 months); (2) its ability to strengthen cortical bones (non-vertebral) without demineralization; and (3) increased bone strength observed in monkey study (e.g., +6% vs. -4% on control at the non-vertebral site [femoral neck]).

We project abaloparatide-SC peak sales at ~$308M/~$204M in the U.S./EU in 2027. We assume abaloparatide-SC showing advantages over Forteo (e.g., numerically higher fracture risk reduction & lower hypercalcemia) in Phase 3; U.S./EU launches in 2017/2018 & market exclusivity through 2028/2027; and RDUS/potential partner commercializing in U.S./EU., respective risks to our assumptions include (1) no advantage of abaloparatide-SC vs. Forteo in Phase 3; (2) potential Forteo generic entry (>2018); and (3) competition from AMGN's romosozumab (anti-sclerostin mAb; Phase 3 data in 1H16 & potential market entry by YE17).

Additional programs include RAD1901 for ER-positive BCBM and abaloparatide-TD. RAD1901 (a SERD), only product targeting ER-positive breast cancer with brain metastasis (BCBM; ~12K U.S. patients), is in Phase 1. Aside from abaloparatide-SC (subcutaneous injection), RDUS is optimizing a convenient transdermal patch (TD) of abaloparatide (not in our financial projections).

Valuation

Our $17 PT is based on an NPV analysis of abaloparatide-SC U.S./EU sales/royalty. We forecast Radius' estimated $80M cash at end-2Q14 (including ~$52.2M net proceeds from IPO) to be sufficient roughly through 2015 and forecast profitability in 2019.

Risks

Risks for RDUS are primarily on abaloparatide-SC, including: (1) clinical/regulatory delays/failure; (2) slow commercial uptake; (3) competition from potential Forteo generic (>2018) & anti-sclerostin mAb (>2017); and (4) general industry risks (e.g., patent infringement, changes in regulatory and/or healthcare policies, pricing/reimbursement).

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Overview

Radius Health, Inc., founded in 2003, is a biopharmaceutical company focused on developing therapies for osteoporosis and other endocrine diseases. The company's lead product is abaloparatide-SC (BA058), the subcutaneous (SC) formulation of a novel synthetic peptide analog of parathyroid hormone-related protein (PTHrP), currently in Phase 3. Topline data from the ongoing Phase 3 for postmenopausal osteoporosis (PMO) is expected in December 2014, with potential NDA filing in ~mid-2015. Based on Phase 2 data showing improved bone mineral density (BMD) vs. Forteo (the only FDA-approved anabolic agent for osteoporosis; ~$1.25B in 2013 sales), RDUS applied for a breakthrough designation for abaloparatide-SC on 5/9/14, with potential FDA decision in ~3Q14 (which would allow for rolling NDA submission). Additional pipeline products include a transdermal (TD) patch of abaloparatide, abaloparatide-TD in additional dosing/formulation work (Phase 2 complete); RAD1901 (high dose), an oral selective estrogen receptor down-regulator/degrader and modulator for the treatment of breast cancer brain metastases (BCBM) in Phase 1; RAD1901 (low dose), an oral selective estrogen receptor modulator (SERM) for the treatment of vasomotor symptom (Phase 2 complete); and RAD140, a non-steroidal selective androgen receptor modulator (SARM) in preclinic as shown in Exhibit 1. Currently, Radius has ~20 full time employees (expected to increase to ~35 by August).

Upcoming events for RDUS include: (1) topline Phase 3 data for abaloparatide-SC in December 2014 (18-month fracture risk reduction data); (2) update on abaloparatide-TD in 4Q14; (3) initiation of second part of ongoing Phase 1 for RAD1901 in ER-positive BCBM by end-2014; (4) abaloparatide-SC 24-months data (6-months extension from the Phase 3) in 2Q15; (5) potential U.S./EU regulatory filings for abaloparatide-SC in ~mid-2015; and (6) potential U.S./EU approval in 2016/2017, respectively.

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Exhibit 1: Radius Health's Product Pipeline

Product	Description	Indication	Status	Marketing rights	Patent expiry
Abaloparatide	Synthetic peptide analog of parathyroid hormone-related protein (PTHrP)	Fracture prevention in osteoporosis; subcutaneous (SC) formulation	Phase 3 randomized (1:1:1) ACTIVE study (begun in 4/11, with enrollment completed in 3/13) comparing 1x daily abaloparatide-SC (80ug) vs. Forteo (20ug) vs. placebo in PMO women (n=2,463) with primary endpoint of new vertebral fractures vs. placebo at 18 mo and secondary endpoints including BMD of lumbar spine, hip, and femoral neck, non-vertebral fractures, and # of hypercalcemic events; enrollment completed in 3/13 with potential topline 18-mo fracture data in December 2014; potential U.S./EU regulatory filings in ~mid-2015 (including 24 mo fracture data) & U.S./EU approval in 2016/2017, respectively 6-months extension study begun in 10/12 for pts enrolled in Phase 3 (n=1200); pts in either abaloparatide-SC and placebo arms to receive alendronate (generic Fosamax), with endpoints including vertebral fractures at 24 mo and safety; potential data in 2Q15 Phase 2 randomized, placebo-controlled parallel group dose-finding data comparing three doses 1x daily abaloparatide-SC (20ug, 40ug, 80ug) in pts with PMO (n=270) with primary endpoint of changes in marker of bone metabolism & changes in spine BMD at 24 wks announced in 8/09	Radius (worldwide ex-Japan, ex-France, with Ipsen co-promote in France); Ipsen (Japan)	In U.S./EU, CoM expires on 3/29/16 (potential Hatch-Waxman extension into 2021 in U.S.); formulation patent expires on 11/8/27 & method of treatment patent expires on 3/26/28 in the U.S.; pending method of treatment patent expires on 10/3/27 in EU
		Fracture prevention in osteoporosis; transdermal (TD) patch	Phase 2 randomized, double-blind study comparing three doses of 1x daily abaloparatide-TD (50ug, 100ug, 150ug) vs. abaloparatide-SC (80ug) vs. placebo (n=250; primary endpoint of % increase in BMD at 6mo from baseline) announced in 1/14 with statistically significant increases in both BMD at lumbar spine & hip over placebo for 100ug and 150ug doses; currently optimizing transdermal patch dose & formulation to achieve comparable PK profile to abaloparatide-SC; if comparable, upon potential approval of SC version, planning single Phase 3 non-inferiority bridging study comparing abaloparatide-SC vs. abaloparatide-TD, with endpoints including lumbar spine BMD at 12 mo	Radius	In U.S./EU, CoM expires on 3/29/16 (potential Hatch-Waxman extension into 2021 in U.S.); pending patents on microneedle application expire in 2032
RAD1901	Oral selective estrogen receptor (ER-alpha) down-regulator (SERD)/ selective estrogen receptor modulator (SERM)	ER-positive breast cancer with brain metastases (high dose); vasomotor symptoms (low dose)	Second part of ongoing Phase 1 in ER-positive mBC with brain metastases expected to begin in late-2014 with potential data in ~2015; first part of two-part Phase 1 study in healthy patients to determine MTD began in 2Q14 with potential data in ~3Q14 Seeking partnership for vasomotor symptoms indication; Phase 2 for randomized, double-blind study comparing four doses of RAD1901 (10mg, 25mg, 50mg, 100mg) vs. placebo in postmenopausal women (n=100; primary endpoint of % change in frequency of hot flashes over time) completed in 2010 with statistically significant reduction in frequency of moderate/severe hot flashes with 10mg dose	Radius (worldwide ex-Japan); Eisai (Japan)	In U.S., two CoM patents expire on 12/25/23 and 8/18/26; in EU, pending patents expire in 2023
RAD140	Non-steroidal selective androgen receptor modulator	N/A	Preclinic	Radius	In U.S., pending CoM expires in 2029

PMO=post-menopausal osteoporosis; BMD=bone mineral density; PK=pharmacokinetics

Source: Company reports and Jefferies

Abaloparatide: Osteoporosis

Abaloparatide-SC is the most advanced anabolic (bone building) agent in clinical development for osteoporosis, with Phase 3 data in December 2014. Abaloparatide is a novel synthetic peptide analog of parathyroid hormone-related protein (PTHrP 1-34). Licensed from Ipsen Pharma in 2005 (& agreement amended in 2007 and 2011), Radius is developing both subcutaneous (SC) and transdermal (TD) formulations of abaloparatide and owns worldwide rights ex-Japan, with a co-promotion arrangement with Ipsen in France. Currently ongoing Phase 3 study for Abaloparatide-SC is a randomized, placebo-controlled study in PMO, with primary endpoint of reduction in

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new vertebral fractures in abaloparatide-SC treated patients compared to placebo at 18 months, with topline data in December 2014. Another anabolic agent in Phase 3 development, Amgen's (AMGN, $116.86, Buy) romosozumab (AMG785, anti-sclerostin monoclonal antibody), Phase 3 data is expected in ~1H16. Radius previously conducted two randomized, placebo-controlled Phase 2 studies for abaloparatide (one with abaloparatide-SC and the other with abaloparatide-TD) in PMO, demonstrating improved bone mineral density (BMD) versus placebo. In addition, abaloparatide-SC showed numerically higher BMD improvement vs. Forteo (teriparatide). For abaloparatide-TD, in Phase 2 it did not show equivalent efficacy vs. abaloparatide-SC, thus Radius is currently optimizing dosing/formulation.

Osteoporosis

Osteoporosis is characterized by low bone mineral density (BMD), leading to increased risk of bone fractures (Harvey et al., *Nat Rev Rheumatol*. 2010 Feb; 6(2):99-105). Post-menopausal women are particularly at risk of osteoporosis, with decreased estrogen secretion in menopause associated with the onset of rapid bone loss. Osteoporosis is primarily diagnosed by measuring BMD at the spine, hip, or forearm with dual-energy x-ray absorptiometry (DXA) devices, to determine the amount of mineralized tissue in a scanned area. These devices report a T-score, which compares an individual's BMD vs. "young normal" BMD for an individual's gender. Based on the World Health Organization (WHO), T-scores $\geq$ -1.0 are defined as normal, -1.0 to -2.5 are defined as osteopenia (low bone mass), and $\leq$-2.5 defined as osteoporosis (Kanis et al., *J Bone Miner Res*. 1994; 9(8):1137-1141). According to the National Osteoporosis Foundation, there are ~10M people in the U.S. with osteoporosis, including 8M women (~45% currently being treated) and 2M men, with an additional ~43M with osteopenia. Worldwide, there are an estimated ~200M women with osteoporosis, according to the International Osteoporosis Foundation.

We estimate that current global sales for osteoporosis products are >~$4.4B, with only FDA-approved anabolic agent Forteo generating ~$1.25B in 2013 sales (Exhibit 2). Current FDA approved treatments for osteoporosis include anti-resorptive agents, which prevent bone loss, and anabolic agents, which promote bone growth. In the anti-resorptive class, bisphosphonates are the most commonly used to treat osteoporosis (Martin TJ, *J Bone Metab*. 2014 Feb; 21(1):8-20). A new anti-resorptive agent, AMGN's RANKL-inhibitor Prolia (denosumab), approved on 6/1/10, generated ~$744M in global sales in 2013. For anabolic agents, Eli Lilly's (LLY, $62.86, Hold) recombinant human parathyroid hormone (PTH 1-34) Forteo (teriparatide; marketed as Forsteo in EU) is the only product currently on the market. FDA/EMA approved in 2002/2003, respectively, Forteo/Forsteo generated global sales of ~$1.25B in 2013. Orange Book-listed patents for teriparatide expire on 12/8/18 and 8/19/19 (method of use patents); despite no composition of matter patent protection, there have been no Paragraph IV generic challengers for teriparatide as of 7/7/14.

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Exhibit 2: Selected Marketed Products for Osteoporosis

Class	Drug	Company	Administration	IMS 2013 TRx (total prescriptions)	IMS 2013 U.S. Sales (M)	Company-reported 2013 WW Sales (M)*
	Anabolic agents					
Synthetic PTH	Forteo (teriparatide)	Eli Lilly	Subcutaneous daily	414,423	$548	$1,245
	Anti-resorptive agents					
Bisphosphonates	Fosamax (alendronate)	Merck (generic)	Oral daily/weekly	12,301,605	$43	$560
	Actonel (risedronate)	Actavis (generic)	Oral daily/weekly/monthly	1,623,206	$330	N/A
	Atelvia (risedronate-delayed relase)	Actavis	Oral weekly	443,767	$74	N/A
	Boniva/Bonviva (ibandronate)	Roche/GSK (generic)	Oral daily or IV 4x/year	1,976,795	$36	$232
	Fosamax+D (alendronate/cholecalciferol)	Merck	Oral weekly	67,830	$12	N/A
	Reclast (zoledronate)	Novartis (generic)	IV yearly	6,624	$133	$337M
	Aredia (pamidronate)	Novartis (generic)	Intravenous monthly	1,409	$4	N/A
	Skelid (tiludronate)	Sanofi-Aventis	Oral daily	N/A	N/A	N/A
	Zometa (zoledronate)	Novartis (generic)	Intravenous monthly	2,722	$146	$600
Human anti-RANKL mAB	Prolia (denosumab)	Amgen	Subcutaneous 1x/6 months	176,836	$481	$744
Synthetic calcitonin	Miacalcin (synthetic salmon calcitonin)	Novartis (generic)	Nasal daily	20,886	$13	N/A
	Fortical (recombinant salmon calcitonin)	Upsher-Smith	Nasal daily	150,456	$10	N/A
Selective estrogen receptor modulator (SERM)	Evista (raloxifene)	Eli Lilly (generic)	Oral daily	2,940,536	$830	$1,050
Total				**20,127,095**	**$2,660**	**$4,431**

RANKL=receptor activator of nuclear factor kappa-B ligand; mAB=monoclonal antibody; PTH=parathyroid hormone; IV=intravenous
*based on company annual reports for branded drugs (not including generics)

Source: Company reports, FDA.gov, IMS Health, and Jefferies

Abaloparatide (PTHrP) Background

Endogenous human PTHrP is a 139-173 amino acid protein, sharing sequence homology with parathyroid hormone (PTH; 84 amino acids). The first part of PTHrP (parathyroid hormone-related protein), N-terminus, has the highest sequence similarity with PTH; eight of the first thirteen amino acids of PTHrP are identical to PTH. For both PTHrP and PTH, the first 34 amino acids (1-34) are sufficient for full biological activity of each protein (McCauley et al., *J Bone Miner Res.* 2012 Jun; 27(6):1231-9). Teriparatide (Forteo) has an identical sequence to the 34 amino acids in the biologically active region of human parathyroid hormone (84 amino acids total). In humans, PTHrP has 3 splice variant isoforms: PTHrP 1-139, 1-173, and 1-141, although the biological relevance of these three forms is as yet unknown. According to RDUS, numerous amino acid substitutions were made across PTHrP to produce abaloparatide.

Based on bone resorption marker data, PTHrP has less catabolic effects on the bone compared to PTH. PTH (both 1-34 and 1-84) is believed to stimulate both anabolic osteoblast-mediated bone formation, as well as catabolic bone resorption to a lesser extent (Miao et al., *J Clin Invest.* 2005 Sep; 115(9):2402-11). Compared to PTH, PTHrP is thought to have increased anabolic effects and decreased catabolic effects based on bone resorption markers. In a small study for PTHrP (1-36) in healthy volunteers (Horwitz et al., *J Clin Endocrinol Metab*. 2003 Apr; 88(4):1603-9) after 3-months treatment, bone resorption markers serum NTX (collagen type 1 cross-linked N-telopeptide) and urinary DPD (deoxypyridinoline crosslinks) remained unchanged from baseline.

PTHrP is expressed in many tissues throughout the body and functions as a paracrine hormone regulating homeostasis. Aside from promotion of bone formation, some other functions of PTHrP include regulation of keratinocytes differentiation in skin/hair, beta cell proliferation, insulin production in the pancreas and vascular smooth muscle in blood vessels. In contrast, PTH is produced by the parathyroid gland and secreted into the

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circulatory system to exert its effects on target tissues in an endocrine mechanism. Functions of PTH include promoting osteoclast resorption and calcium release in bones, and stimulating calcium resorption and activating vitamin D in the kidneys (McCauley et al., *J Bone Miner Res.* 2012 Jun; 27(6):1231-9). Since prolonged elevation of PTH can lead to osteoclast activation and bone resorption, as a treatment for osteoporosis, Forteo is administered daily (SC injection) despite a short half-life of ~1 hour such that peak levels of circulating PTH return to baseline after 3 hours.

Binding of PTHrP to a specific PTH1R (parathyroid hormone 1 receptor) conformation is hypothesized to lead to its decreased catabolic effects (Farradon, et al., *Nat Chem Biol.* 2009 Oct; 5(10):734-42). The PTH1R receptor has two conformations, RG and R0. Similar to native PTHrP, abaloparatide selectively binds to the RG conformation, while PTH selectively binds to the R0 conformation. It is the preferential binding of PTHrP to RG conformation of its receptor that is thought to be responsible for its differentiated biological effects compared to PTH. Signalling through the R0 conformation is thought to lead to sustained cyclic AMP (cAMP) signalling and downregulation of PTH1R receptor from the cell surface, hypothesized to be responsible for increased bone resorption over bone formation. In contrast, signaling through the RG receptor conformation is thought to lead to short bursts of cAMP without PTH1R internalization, potentially responsible for increased bone formation over bone resorption.

Ongoing Phase 3 for Abaloparatide-SC

Primary endpoint of Phase 3 study of abaloparatide-SC is reduction in new vertebral fracture in PMO vs. placebo at 18 months; topline data expected in December 2014. Phase 3 study, begun in April 2011 and completed enrollment in March 2013, is a randomized (1:1:1) study comparing once daily abaloparatide-SC (80ug) vs. placebo vs. Forteo (20ug) in ambulatory postmenopausal women (50-85 y.o.) with severe osteoporosis and fracture risk (n=2,463) (Exhibit 3). Patients' enrollment criteria includes: (1) BMD T-score ≤-2.5 and >-5.0 at the lumbar spine (L1-L4) or hip (femoral neck) as measured by DXA with evidence of fracture criteria (defined as radiological evidence of >2 mild or >1 moderate lumbar or thoracic vertebral fractures, or history of low trauma forearm, humerus, sacral, pelvic, hip, femoral, or tibial fracture within the past 5 years), (2) patients >65 y.o. with BMD T-score <-2.0 and >-5.0 at the lumbar spine or hip who meet fracture criteria, or (3) patients >65 y.o. with BMD T-score ≤-3.0 and >-5.0 who do not meet fracture criteria. Following the randomization, during treatment phase, Forteo treatment is not blinded since the drug is delivered as a proprietary prefilled device, while treatment with either abaloparatide-SC or placebo remains blinded. Primary endpoint of the study is reduction in new vertebral fractures in abaloparatide-SC treated patients compared to placebo at 18 months, as assessed by X-ray. Secondary endpoints include: (1) difference in spine, total hip, and femoral neck BMD with abaloparatide-SC from baseline to end-of-treatment, and compared to Forteo; (2) reduction in new non-vertebral fractures with abaloparatide-SC from baseline to end-of-treatment vs. placebo; and (3) difference in hypercalcemia rates with abaloparatide-SC vs. Forteo.

While Phase 3 is ~90% powered to show superiority of abaloparatide-SC vs. placebo for prevention of vertebral fractures at 18 months, it's also designed to show superiority vs. Forteo in BMD & possibly non-vertebral fracture risk reduction. Powering assumptions include ~56% reduction in vertebral fractures with abaloparatide-SC vs. placebo (~7% vs. ~3%) (based on historical trials, with RDUS noting that Forteo showed ~65% reduction in vertebral fractures in Phase 3) and a ~20% dropout rate (historical drop-out rate in similar trials). In addition to superiority vs. placebo, Phase

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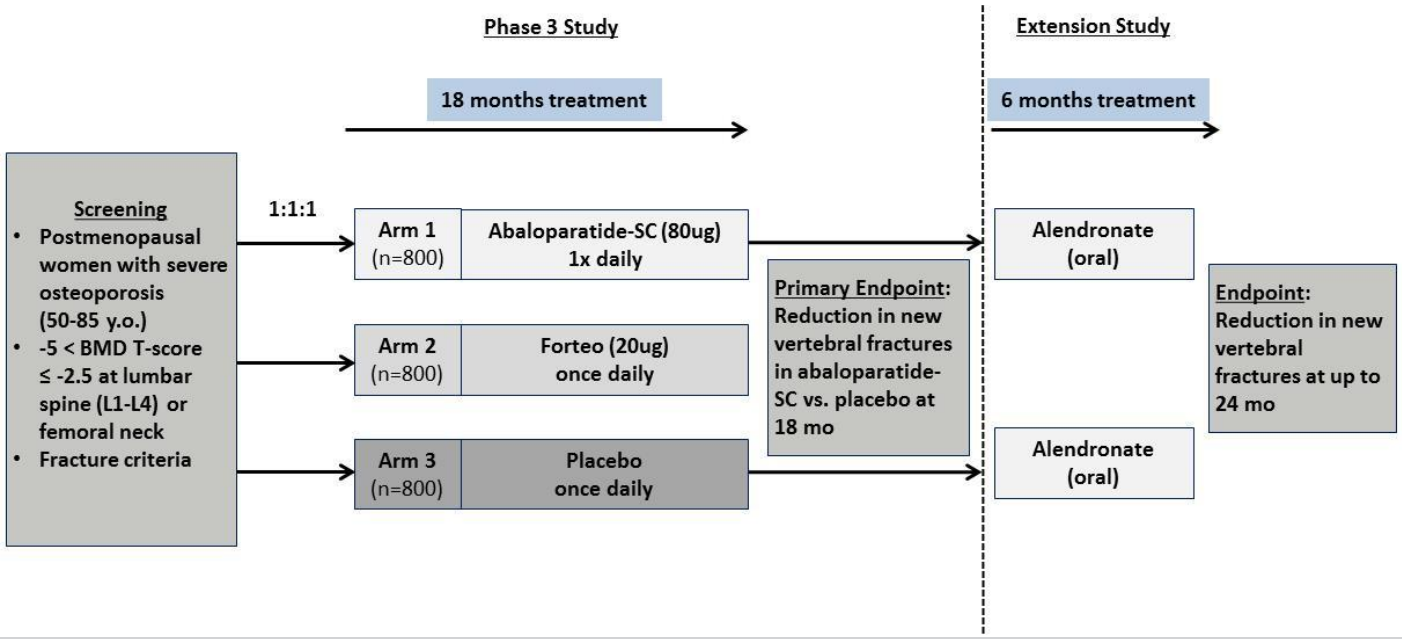
3 is designed to demonstrate superiority of abaloparatide-SC vs. Forteo for (1) increased BMD at major skeletal sites, and (2) lower incidence of hypercalcemia. Based on Phase 2 data demonstrating improved BMD in hip and femoral neck (non-vertebral sites) vs. Forteo (where Forteo efficacy is not as strong at vertebral sites) and preclinical model monkey data showing sustained increased BMD and bone strength at vertebral & non-vertebral sites over 16 months with abaloparatide-SC, RDUS expects potential superiority vs. Forteo for non-vertebral fracture risk reduction (although not powered to show such).

Exhibit 3: Phase 3 Abaloparatide-SC Study & Extension Study Design



Source: Company reports and Jefferies

Fracture data at 24 months from abaloparatide-SC 6-month extension study from Phase 3 (18-month study) expected in 2Q15; necessary for FDA approval. On 2/15/12, Radius received a letter from FDA advising the company that 24-month fracture data is necessary for approval of new products to treat PMO (vs. 18-months primary endpoint in ongoing Phase 3 study). After meeting with FDA on 3/21/12, Radius believes that 18-month primary endpoint in its Phase 3 study will be acceptable for approval and is conducting an additional 6-months extension study to collect 24-months fracture data from patients enrolled in Phase 3 study (n=1,200). Patients having completed the initial 18 months of treatment with either abaloparatide-SC or placebo in the Phase 3 are eligible to rollover into the 6-months extension study and receive alendronate (generic Fosamax) treatment for an additional 6 months. The extension study will assess the reduction in new vertebral fractures at up to 24 months.

Potential U.S./EU regulatory filings for abaloparatide in ~mid-2015 with potential U.S./EU launch in 2017/2018, respectively. On 5/9/14, Radius submitted a breakthrough therapy designation request to FDA for abaloparatide-SC for the treatment of postmenopausal osteoporosis, with potential FDA decision in 3Q14. If granted, Radius could potentially file a rolling NDA for abaloparatide-SC. While Radius has not yet discussed with FDA the potential for an FDA advisory committee panel meeting for abaloparatide-SC, Radius notes a potential panel would likely occur in 1H16.

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Experts Discussions on Abaloparatide-SC

- **No clear correlation between BMD increases and fracture risk reduction; fracture risk is more related to bone architecture (not BMD).** With abaloparatide-SC, no reduction in fracture risk (primary endpoint of ongoing Phase 3) has been demonstrated to date; in prior clinical studies, abaloparatide-SC showed significant BMD improvement vs. placebo and numerically higher BMD improvement vs. Forteo (teriparatide). For example, in Forteo Phase 3 study, at 20ug/40ug, there was ~9.7%/13.7% relative improvement in lumbar spine BMD vs. placebo at ~19 months. However, at 40ug dose, an additional ~4% relative improvement in lumbar spine BMD (vs. 20ug dose) did not translate into increased reduction in fracture risk compared to 20ug dose. Treatment with 40ug Forteo reduced the risk of ≥1 new vertebral fractures by 69% (vs. 65% with 20ug), ≥2 fractures by 86% (vs. 77% with 20ug), and ≥1 moderate or severe vertebral fracture by 78% (vs. 90% with 20ug).

- **While expecting abaloparatide-SC to show reduction in new vertebral fracture vs. placebo (primary endpoint of Phase 3), endocrinologists note commercial success of abaloparatide-SC lies in its superior efficacy over Forteo in non-vertebral fracture risk reduction** (not BMD improvement alone and/or lower incidence of hypercalcemia). For the prevention of vertebral/spine fracture, Forteo is quite effective (~65% risk reduction vs. ~35% reduction in non-vertebral fracture). While not as common as spine fracture, experts note that non-vertebral fracture (hip, wrist, shoulder, rib) are as important. Particularly hip fractures, while small in incidence, are associated with high morbidity/mortality. In Phase 2, abaloparatide-SC showed ~2% BMD improvement vs. Forteo in hip and femoral neck; coupled with preclinical monkey data (increased bone strength at both vertebral & non-vertebral sites), RDUS expects to show superiority over Forteo in non-vertebral fracture reduction. However, overall, our experts are cautious. If abaloparatide-SC shows superior efficacy over Forteo in non-vertebral reduction (along with lower hypercalcemia), experts note it would be a very attractive new option for osteoporosis.

- **Endocrinologists view hypercalcemia associated with Forteo as not a problem.** Abaloparatide-SC showed ~50% lower hypercalcemia vs. Forteo in Phase 2. However, our experts note hypercalcemia with Forteo is transient (normally in 4-6 hours post-treatment) and not clinically significant. With reducing calcium supplements, hypercalcemia is easily controlled.

- **Given the anabolic nature of abaloparatide-SC similar to Forteo, experts expect a black box warning for potential osteosarcoma and ~2 year treatment limit with abaloparatide-SC.** In rats, RDUS notes similar incidence of osteosarcoma between abaloparatide-SC and Forteo.

- **For transdermal patch formulation of abaloparatide (abaloparatide-TD), experts seem cautious about bioequivalence vs. SC formulation,** noting dissimilar bone density and bone turnover markers patterns of TD vs. SC. Our experts' discussions indicate somewhat muted enthusiasm for alternative formulations of anabolic agents. They note Forteo injection is not an issue for patients and is never a reason not to use the drug. Some note that consumer acceptance will likely increase with a transdermal patch, but unsure of insurers'

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acceptance. It appears that the black box warning of potential osteosarcoma for Forteo is more of a barrier than injection for some patients.

- **Experts are positive on anti-sclerostin antibodies in development (e.g., AMGN's romosozumab) as new anabolic agents.** There are three anti-sclerostin monoclonal antibodies (mAb) in clinical development (Exhibit 13), with the most advanced AMGN's romosozumab in Phase 3 (data in ~1H16). Experts note anti-sclerostin mAb's mechanism of action (increase bone formation and decrease bone resorption) as attractive. However, experts note its anabolic effect seems transient (~ 6-12 months). If approved, they will likely use anti-sclerostin mAb followed by other anti-resorptive agents in an alternating fashion. Some experts expect anti-sclerostin mAb to largely replace Forteo if approved based on favourable safety to date. However, they note drug delivery could be an issue with anti-sclerostin mAb (companies are trying reduce volume). Currently AMGN's romosozumab is given 1x monthly in 3 syringes (3CC total per month), whereas LLY's blosozumab (Phase 1) is given every two weeks.

Phase 2 Data for Abaloparatide-SC

Abaloparatide-SC showed dose-dependent BMD increases, with statistically significant relative increase from baseline in total spine BMD vs. placebo (p<0.001) (n=221) (Exhibits 4-7). Phase 2 study for abaloparatide-SC was a randomized, placebo-controlled, parallel-group, dose-finding study comparing daily abaloparatide-SC vs. placebo vs. Forteo in postmenopausal women with osteoporosis (n=221; 55-85 y.o.). In the study (BA058-05-002), abaloparatide-SC (20ug, 40ug, and 80ug), placebo and Forteo (20ug) were self-administered by a pen-injector device. Patients eligibility criteria included BMD t-score $\leq$ -2.5 at the lumbar spine or hip (femoral neck) measured by DXA or BMD t-score $\leq$ -2 and a prior low trauma fracture or an additional risk factor. Primary endpoints of the study included change in total spine BMD at 6 months and change in P1NP (N-terminal propeptide of type 1 procollagen), a marker of bone formation activity; secondary endpoints included change in femoral neck BMD at 6 months, change in total hip BMD at 6 months, and change in total spine BMD at 12 months. All patients began calcium and vitamin D supplementation four weeks before starting treatment, and continued throughout the study.

Key points from Phase 2 trial for abaloparatide-SC. Top-line data was released in August 2009, with peer-reviewed publication of Phase 2 data expected in ~2H14.

- **At 6 months, for total spine BMD, abaloparatide-SC (80ug) showed numerically higher ~1.1% relative increase from baseline vs. Forteo** (Exhibit 4). At 3 months, from baseline absolute mean lumbar spine BMD increased by +4.6% with abaloparatide-SC (80ug) (p<0.001 vs. placebo) vs. +3.2% with Forteo (N.S.) vs. +1.6% with placebo. At 6 months (n=221), from baseline absolute mean lumbar spine BMD increased by +6.7% with abaloparatide-SC (80ug) (p<0.001 vs. placebo) vs. +5.5% with Forteo (p<0.001 vs. placebo) vs. +1.6% with placebo.

- **At 12 months, for total spine BMD, abaloparatide-SC (80ug) showed ~4.3% relative increase from baseline vs. Forteo** (Exhibit 5). In a 6-months extension study enrolling patients who had previously completed the Phase 2 (n=55/221), at 12 months, from baseline absolute mean lumbar spine

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BMD increased by +12.9% with abaloparatide-SC (80ug) vs. +8.6% with Forteo vs. +0.74 with placebo.

- **For total hip BMD at 6 months, abaloparatide-SC (80ug) showed ~2.1% relative increase from baseline vs. Forteo** (Exhibit 6). At 3 months, from baseline absolute mean total hip BMD increased by +1.4% from with abaloparatide-SC (80ug) vs. +0.7% with Forteo vs. +0.7% with placebo. At 6 months, from baseline absolute mean total hip BMD increased by +2.6% with abaloparatide-SC (80ug) ($p<0.05$ vs. placebo) vs. +0.5% with Forteo (N.S.) vs. +0.4% with placebo.

- **For femoral neck BMD at 12 months, abaloparatide-SC (80ug) showed ~1.9% relative increase from baseline vs. Forteo** (Exhibit 7). At 6 months, from baseline absolute mean femoral neck BMD increased by +3.1% with abaloparatide-SC (80ug) ($p<0.05$ vs. placebo) vs. +1.1% with Forteo (N.S.) vs. +0.8% with placebo. At 12 months, from baseline absolute mean femoral neck BMD increased by +4.1% with abaloparatide-SC (80ug) vs. 2.2% with Forteo.

- **At 6 months, ~66% of abaloparatide-SC treated patients had BMD increases (at lumbar spine, total hip and femoral neck).** This compares to ~40% of Forteo treated patients ($p=0.0250$) and 29% of placebo treated patients ($p=0.0015$).

- **RDUS notes a dose-dependent increase in anabolic (bone formation) markers such as P1NP, BSAP and osteocalcin with abaloparatide-SC.** While levels of anabolic bone markers were lower with abaloparatide-SC treatment vs. Forteo, Forteo treatment resulted in increased response to bone resorption markers such as CTX (collagen type 1 cross-linked C-telopeptide) and NTX (collagen type 1 cross-linked N-telopeptide). Compared to Forteo, abaloparatide-SC showed lower levels of CTX throughout the study.

Approximately 50% reduction in incidence of hypercalcemia with abaloparatide-SC vs. Forteo. Clinically significant elevations of serum calcium levels (defined as $\geq$10.5mg/dL) were observed in ~12%/19%/18% of patients treated with 20ug/40ug/80ug abaloparatide-SC, respectively, compared to ~40% of Forteo-treated patients and ~4% on placebo. Most elevations were experienced at 4 hrs post-injection. The ~40% Forteo-treated patients experiencing hypercalcemia is significantly higher than what's in the Forteo label; RDUS notes that this could be due to time of measurements. In Forteo Phase 3 study, measured at 4-6 hours post-injection, mild hypercalcemia (defined as $\geq$1 serum calcium value >10.6mg/dL [2.64 mmol/L; upper limit of normal]) was observed in ~11% at 20ug Forteo vs. ~28% on 40ug Forteo vs. 2% on placebo patients. Approximately 3% of Forteo-treated patients had elevated serum calcium levels >10.6mg/dL on consecutive 4-6 hrs post-dosing measurements vs. 0.2% with placebo, requiring either dose reduction of Forteo or reduction in calcium supplements.

No treatment-related SAEs; safety with abaloparatide-SC similar to Forteo in Phase 2. There were 5 SAEs (serious adverse events) reported in 3 patients (n=5/221; including diverticulitis, ovarian cancer [after a few days of abaloparatide-SC treatment], and hernia) deemed unrelated to treatment. Discontinuations due to AEs occurred in ~3% (n=7/221) of patients, including n=1 on abaloparatide-SC (20ug), n=1on abaloparatide-SC (40ug), n=3 on abaloparatide-SC (80ug), n=2 on Forteo, and none on placebo. Postural changes in blood pressure were observed in 5%/2%/2% of abaloparatide-SC 20ug/40ug/80ug-treated patients, compared to 7% Forteo-treated patients and 0% on

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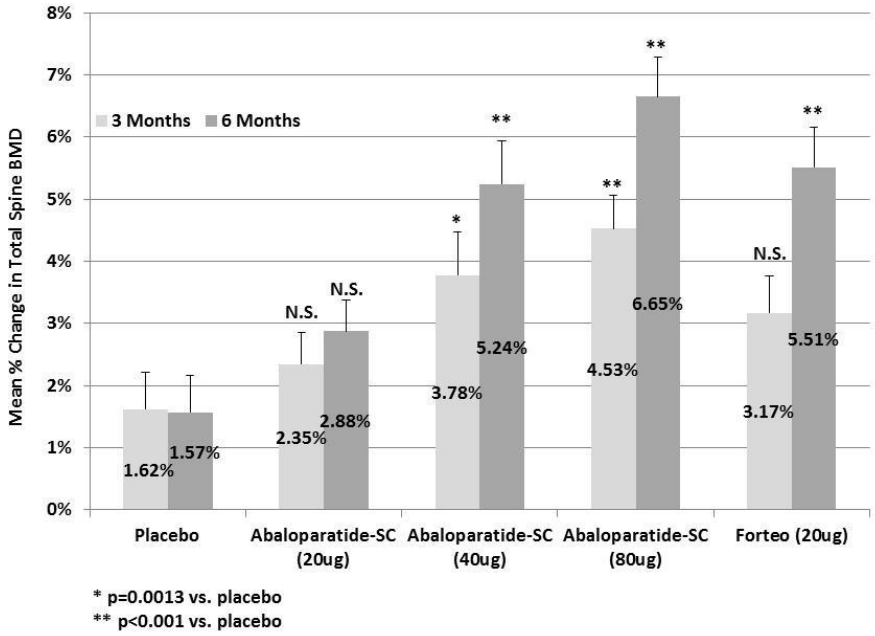
placebo. After 6 months of treatment, ~12% of patients (n=~16/130) developed low titer antibodies against abaloparatide, including n=5 on 20ug dose, n=6 on 40ug, and n=5 on 80ug. One of the patients in the 40ug group (n=1/6) who developed antibodies was found to have potential evidence of neutralizing activity based on an *in vitro* assay; however there was no evidence of decreased drug efficacy. Antibodies for Forteo were not measured. Injection site reactions with abaloparatide-SC or Forteo were mild, if any.

Exhibit 4: Phase 2 Data for Abaloparatide-SC: Mean % Change from Baseline in Total Spine BMD at 3 and 6 Months (n=221)



Source: Company reports and Jefferies

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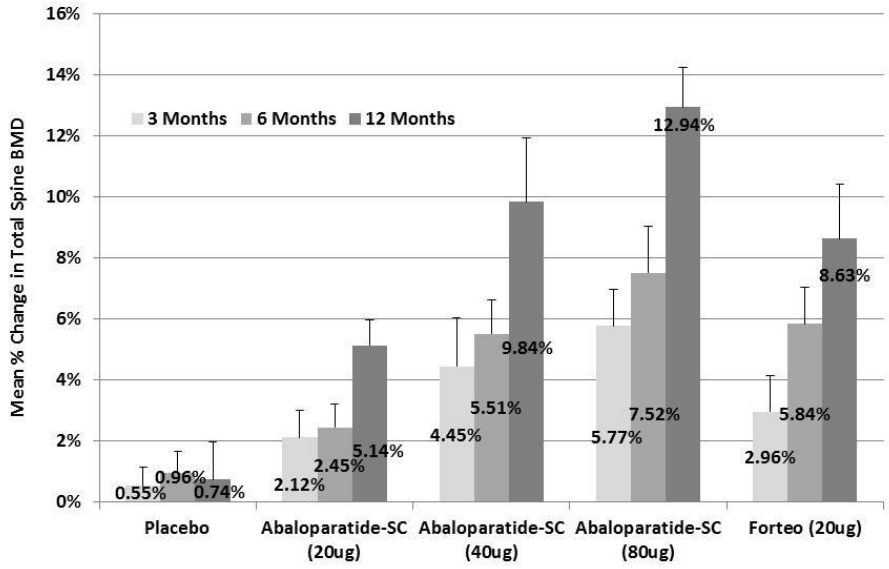
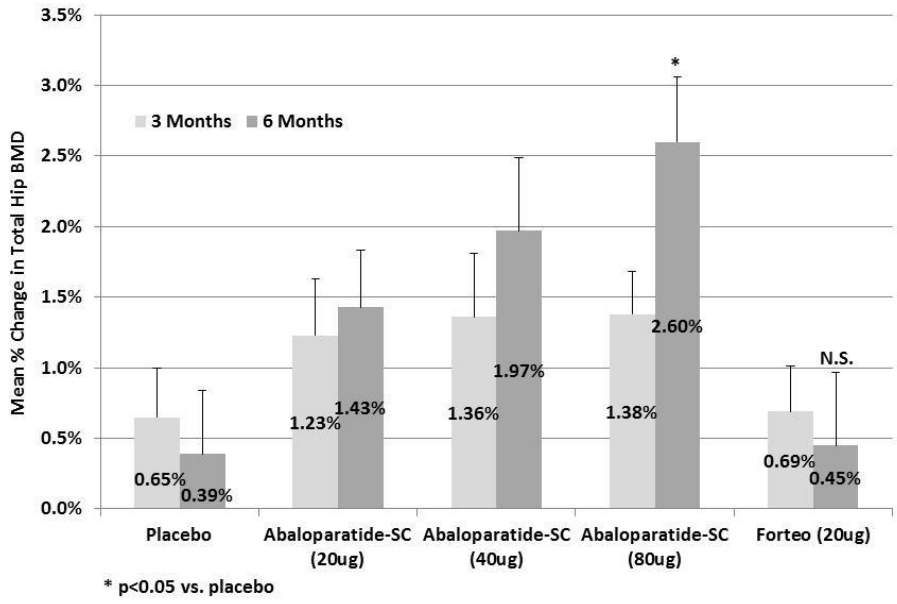
Exhibit 5: Phase 2 Extension Data for Abaloparatide-SC: Mean % Change from Baseline in Total Spine BMD at 3, 6, and 12 Months (n=55)



Source: Company reports and Jefferies

Exhibit 6: Phase 2 Data for Abaloparatide-SC: Mean % Change from Baseline in Total Hip BMD at 3 and 6 Months (n=221)



Source: Company reports and Jefferies

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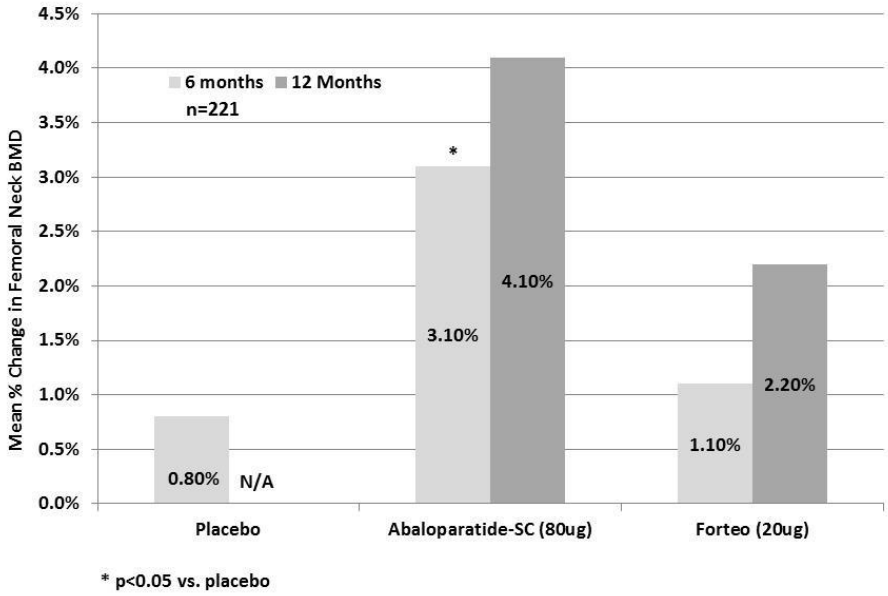
Exhibit 7: Phase 2 Data for Abaloparatide-SC: Mean % Change from Baseline in Femoral Neck BMD at 6 and 12 Months



Source: Company reports and Jefferies

Phase 2 Data for Abaloparatide-TD

Abaloparatide-TD showed dose-dependent BMD increases, but not bioequivalent vs. abaloparatide-SC 80ug (n=231) (Exhibits 8-9). Phase 2 was a randomized, double-blind study, comparing abaloparatide-TD (50ug, 100ug, 150ug) vs. placebo vs. abaloparatide-SC (80ug) in women with PMO (55-85 y.o., n=231). Abaloparatide-TD was delivered in a ~5 minute transdermal patch (3M's solid Microstructured Transdermal System, consisting of 316 microprojections) applied to the peri-umbilical skin daily for up to 24 weeks. Primary endpoint was change in lumbar spine BMD with abaloparatide-TD compared to placebo and abaloparatide-SC at 6 months. Currently we do not assume potential revenues for abaloparatide-TD in our financial projections.

Key points from Phase 2 trial for abaloparatide-TD. Top-line data was released on 1/9/14, with detailed data presented at the Endocrine Society's Annual Meeting (ENDO 2014) on 6/22/14.

- **For total spine BMD at 6 months, mean absolute increases from baseline were statistically significant for all doses of abaloparatide-TD vs. placebo; however, numerically lower vs. abaloparatide-SC (Exhibit 8).** Mean absolute increase in total spine BMD from baseline was +1.87%/+2.33%/+2.95% with abaloparatide-TD 50ug (p=0.0066 vs. placebo)/100ug (p=0.0005 vs. placebo)/150ug (p<0.0001 vs. placebo), respectively vs. +0.04% with placebo. However, abaloparatide-TD efficacy was numerically lower compared to +5.80% with 80ug abaloparatide-SC. The

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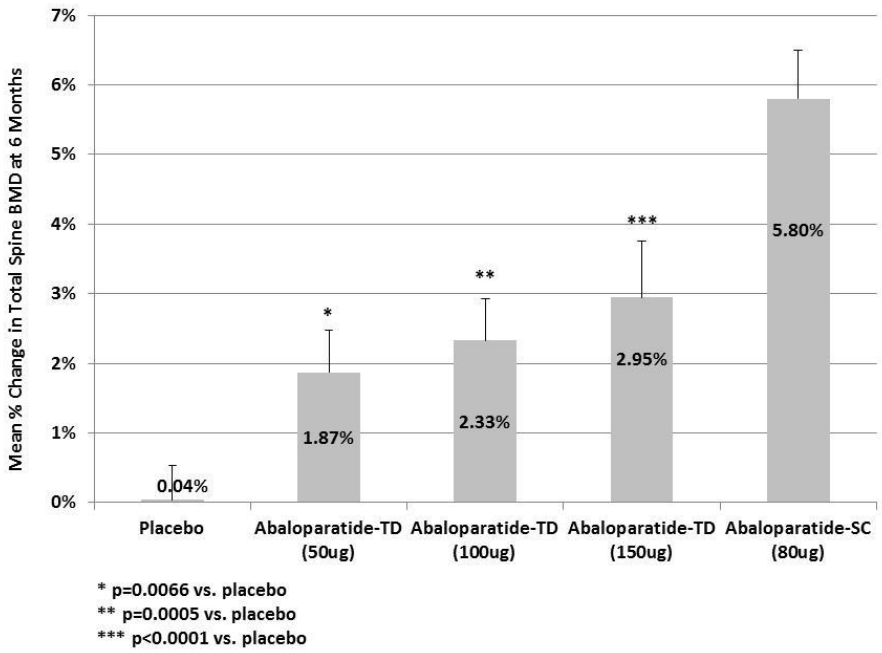
+5.80% lumbar spine BMD increase in this study was similar to that observed in the abaloparatide-SC dose escalation study (+6.65% at 6 months).

- **For total hip BMD at 6 months, mean absolute increases from baseline were statistically significant for 50ug & 100ug abaloparatide-TD vs. placebo, however numerically lower vs. abaloparatide-SC (Exhibit 9).** Mean absolute increase in total hip BMD from baseline was +0.97%/+1.32%/+1.49% with abaloparatide-TD 50ug (N.S.)/100ug (p=0.0056 vs. placebo)/150ug (p=0.0018 vs. placebo), respectively vs. -0.02% with placebo. However, abaloparatide-TD efficacy was numerically lower compared to +2.74% with 80ug abaloparatide-SC. The +2.74% total hip BMD increase in this study was similar to that observed in the abaloparatide-SC dose escalation study (+2.60% at 6 months).

Radius is currently optimizing dose & formulation of abaloparatide-TD; progress update in 4Q14. While Phase 2 demonstrated proof of concept for abaloparatide-TD, pharmacokinetic (PK) profile of TD formulation was not bioequivalent to the SC formulation. The fastest/least expensive way to get abaloparatide-TD to market (as a line extension to abaloparatide-SC) is to demonstrate bioequivalence to abaloparatide-SC (once approved). Pending successful completion of dose optimization/formulation work, Radius plans to conduct a single bridging PK study for abaloparatide-TD (vs. –SC; likely ~6-month program) post-FDA approval of abaloparatide-SC likely in ~2016. Two other paths to get abaloparatide-TD to market, albeit longer and more expensive vs. bioequivalent study, include (1) a bridging study to demonstrate non-inferior BMD (vs. abaloparatide-SC; likely ~18-24 month program) and (3) new Phase 3 study demonstrating fracture data (vs. placebo).

Exhibit 8: Phase 2 Data for Abaloparatide-TD: Mean % Change from Baseline in Total Spine BMD at 6 Months (n=231)



Source: Company reports and Jefferies

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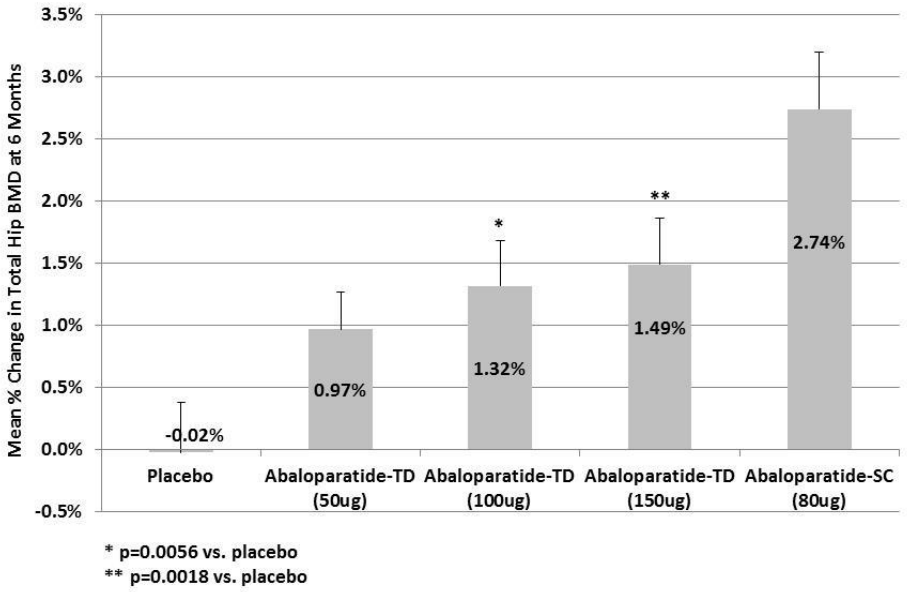
Exhibit 9: Phase 2 Data for Abaloparatide-TD: Mean % Change from Baseline in Total Hip BMD at 6 Months (n=231)



Source: Company reports and Jefferies

Competitor Forteo Clinical Data

In Phase 3, Forteo showed statistically significant increases in BMD ($p<0.001$) and reduction in fracture risk ($p\leq0.001$) vs. placebo. In women with PMO (n=1,637), two doses of Forteo (20ug and 40ug) were compared to placebo with primary endpoint of reduction in new vertebral fractures after 36 months of treatment (Neer et al., *N Engl J Med*. 2001 May 10; 344(19):1434-41). However, Eli Lilly stopped the study early after a median of 19 months of treatment to evaluate the clinical relevance of osteosarcoma findings in rats. Treatment with Forteo (20ug) reduced the risk of $\geq$1 new vertebral fractures by 65% (relative risk vs. placebo=0.35; 95% CI, 0.22-0.55; $p\leq0.001$), reduced the risk of 2 or more fractures by 77% (relative risk vs. placebo=0.23; 95% CI, 0.09-0.60; $p\leq0.001$), and reduced the risk of $\geq$1 moderate or severe vertebral fracture by 90% (relative risk vs. placebo=0.10; 95% CI, 0.04-0.27; $p\leq0.001$). Absolute risk reduction of new vertebral fractures was 9.3% (5.0% with Forteo vs. 14.3% with placebo; 95% CI, 5.5-13.1).

Increases in BMD at higher dose Forteo (40ug) did not translate into greater reduction in fracture risk compared to lower dose Forteo (20ug). After median treatment duration of 19 months, 20ug and 40ug Forteo showed statistically significant increases in BMD from baseline compared to placebo for lumbar spine (+9.7%/+13.7% with 20ug/40ug vs. +1.1% on placebo; $p<0.001$), femoral neck (+2.8%/5.1% with 20ug/40ug vs. -0.7% on placebo; $p<0.001$), and total hip (+2.6%/+4.0% with 20ug/40ug vs. -1.3% on placebo; $p<0.001$). However, increases in BMD with the 40ug dose did not translate into greater reduction in fracture risk compared to the 20ug dose. Treatment with 40ug Forteo reduced the risk of $\geq$1 new vertebral fractures by 69% (vs. 65% with 20ug); 2 or more fractures by 86% (vs. 77% with 20ug); and $\geq$1 moderate or severe

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vertebral fracture by 78% (vs. 90% with 20ug). For non-vertebral fractures, treatment with 40ug Forteo reduced the risk of ≥1 new non-vertebral fracture by 40% (vs. 35% with 20ug). Since there was no additional benefit observed in reduced fracture risk with the 40ug dose relative to the 20ug dose (with increased incidence of mild hypercalcemia [>10.6mg/dL]: ~28% on 40ug dose vs. ~11% on 20ug vs. ~2% on placebo), Eli Lilly proposed the 20ug SC daily dose as the proposed dose to the FDA.

In Phase 3, ~8.6% relative increase in lumbar spine BMD with Forteo (20ug) vs. placebo at ~19 months translated into statistically significant reduction in fracture risk (p<0.001). According to our experts, there seems to be no proven correlation between increases in BMD and reduction in fracture risk (at least in clinical studies); thus, BMD increase is not viewed as predictive of fracture risk reduction. However, in observational studies in practice, some experts note a correlation between BMD increases and fracture risk reduction. Published meta-analyses (such as Hochberg et al., *J Clin Endocrinol Metab*. 2002 Apr; 87(4):1586-92) indicates that decreases in BMD are correlated with increased fracture risk (i.e., risk of fracture doubles for each 1 standard deviation reduction in BMD). If Phase 3 for abaloparatide-SC shows similar magnitude of BMD increase at 18 months as observed at 12 months in Phase 2 (~12.94% relative increase in lumbar spine BMD vs. placebo at 12 months), based on results from Phase 3 Forteo study (~8.6% relative increase in lumbar spine BMD vs. placebo at ~19 months), it seems highly likely that Phase 3 for abaloparatide-SC would show a statistically significant reduction in fracture risk (vs. placebo) at 18 months.

Early, dose-dependent increases in BMD with 12-week Forteo treatment in Phase 2. Phase 2 (B3D-MC-GHAA) was a double-blind, randomized, placebo-controlled, parallel six-week dosing study, comparing daily doses of Forteo (6ug to 60ug) vs. placebo in healthy postmenopausal women (n=51), with 6 weeks of treatment followed by 6 weeks of observation. Primary endpoint included serum markers of bone formation such as P1CP (measures new collagen synthesis in bone) & BSAP (bone-specific alkaline phosphatase), and spine BMD. Data showed a dose-dependent mean increase from baseline in serum P1CP with Forteo at 15, 30, 40, 50, and 60ug doses, with statistically significant differences at weeks 3 and 6 (vs. placebo). At 12-week follow-up lumbar spine BMD measurements, there was a statistically significant increase in mean lumbar spine BMD for 30ug and 60ug groups vs. placebo (p<0.002). FDA medical review noted that this is likely the first demonstration in a placebo-controlled clinical trial showing BMD response to short course of PTH treatment, with "early and robust response" in all except for 2 of the patients treated with >30ug/day. This compares to the 8 patients on placebo losing BMD by an average of 2% during this period.

Preclinical Data for Abaloparatide-SC

In a monkey study, 16-months' treatment with abaloparatide-SC resulted in sustained increases in BMD, and improved bone strength at vertebral & non-vertebral sites. Monkeys were randomized to 5 treatment groups (sham, n=16; OVX+vehicle, n=17; OVX+0.2ug/kg/day abaloparatide-SC, n=16; OVX+1ug/kg/day abaloparatide-SC, n=16; and OVX+5ug/kg/day abaloparatide-SC, n=16), then underwent either sham surgery or ovariectomy (OVX) and received 1x daily SC injection for 16 months. Compared to normal animals, untreated osteopenic animals (OVX+vehicle) showed decreased bone mass correlated with decreased bone strength parameters as measured (post-mortem) by yield load for both vertebral cores compression (27% decrease vs. sham vehicle control) and vertebral body (20% decrease vs. sham vehicle control). In OVX monkeys treated with abaloparatide at both 1ug/kg (human equivalent dose) and 5ug/kg abaloparatide-SC, but not at 0.2ug/kg dose, yield load for vertebral

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core and vertebral body was increased, with reversed OVX-induced strength loss at the spine. At the femoral neck (non-vertebral site), peak load shear increased by +6% in OVX animals treated with abaloparatide-SC 1ug/kg/day and 5ug/kg/day, compared to -4% decrease in OVX animals treated with vehicle (vs. sham vehicle controls).

Preclinical carcinogenicity study showed no increases in osteosarcomas (malignant bone tumor) with abaloparatide-SC vs. Forteo. Systemic exposure of Forteo at doses ranging from 3x to 60x human exposure (based on 20ug dose) has been found to cause an increase in osteosarcoma in Fischer rats, although no increased incidence of tumors in other tissues. No osteosarcomas were observed in monkeys at daily doses of Forteo 4x to 10x maximal human dose over 18 months of exposure (Neer et al., *N Engl J Med*. 2001 May 10; 344(19):1434-41).

Radius conducted a 2-year carcinogenicity study in Fischer 344 albino rats (n=60/sex/dose), comparing three doses (10, 25, and 50ug/kg) of daily abaloparatide-SC vs. daily rhPTH (1-34; Forteo) (30ug/kg). At a similar multiple to the human therapeutic dose of Forteo (~20x), 25ug/kg abaloparatide-SC showed a similar incidence of osteosarcomas compared to 30ug/kg rhPTH. In female rats, for primary osteosarcoma, there was n=1 in vehicle controls, n=11/22/37 with abaloparatide at 10/25/50ug/kg doses, respectively, and n=24 with rhPTH (1-34). For metastatic osteosarcomas, there was none in vehicle controls, n=2/3/16 with abaloparatide 10/25/50ug/kg doses, respectively, and n=9 with rhPTH (1-34). Radius noted there were no incidences of osteosarcomas observed across ~100 monkeys treated with abaloparatide-SC for ~16 months.

Sales Projections for Abaloparatide-SC

We assume U.S./EU launches of abaloparatide-SC in ~2017/2018, respectively. In the U.S., we assume Radius will commercialize abaloparatide-SC using ~150 sales reps targeting ~9,600 high prescribers of Forteo/Prolia (including primary care physicians, endocrinologists, and rheumatologists); and in EU form a partnership (in 2016 prior to EMA approval in 2017 by our estimate; assume $35M in upfront payment from a partner), with net royalty of 25% on EU sales to RDUS. Composition of matter patent for abaloparatide-SC expires on 3/29/16 in both the U.S. (US Patent No. 5,969,095) and EU, with potential Hatch-Waxman extension into 1Q21 in the U.S. (if extension granted by USPTO). In addition, a patent for the intended therapeutic formulation of abaloparatide-SC expires on 11/8/27 in the U.S. (US Patent No. 8,148,333) and in 2027 in the EU (if granted), and a patent for the method of treating osteoporosis with the intended therapeutic dose of abaloparatide-SC (US Patent No. 7,803,770) expires on 3/26/28 in the U.S. and on 10/3/27 in the EU (if granted).

Radius has worldwide (ex-Japan) rights to abaloparatide and shares co-promotion rights with Ipsen in France; obligated to pay ~5% fixed royalty on sales to Ipsen. RDUS acquired abaloparatide from Ipsen Pharma SAS in 2005 (& agreement amended in September 2007 and May 2011). Under the agreement, RDUS is obligated to pay Ipsen milestone payments (€10M-€36M in future development, regulatory, and commercial milestones, aside from the $1M total already paid to Ipsen [including initial licensing fee of $250K and milestone payments of $750K] plus an additional 17,326 shares of Series A-1 convertible preferred stock paid to Ipsen upon initiation of abaloparatide-SC Phase 3 study). In addition, Radius is obligated to pay Ipsen a fixed 5% royalty on net abaloparatide-SC sales on a country-by-country basis until the later of either 10 years after the first commercial sale in a given country or the last patent expiry of abaloparatide-SC (March 26, 2028). We assume $5M milestone payment to Ipsen (single-digit millions, according to Radius) upon abaloparatide-SC NDA filing in

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~mid-2015. In France, if Ipsen exercises its co-promotion rights, Radius is obligated to pay Ipsen a percentage of total product revenue sold by Radius/Ipsen (capped at mid-double digit percentage); in return, Ipsen is obligated to pay Radius mid-single digits royalties on Ipsen's designated portion of total product revenue in France plus a percentage (undisclosed) of marketing costs in France.

In the U.S., assuming a market launch in 2017, we project abaloparatide-SC peak sales of ~$308M in 2027 (Exhibit 10). On an estimated ~3.6M women treated for osteoporosis in the U.S. (from an estimated ~8M women diagnosed with osteoporosis, according to the National Osteoporosis Foundation), we estimate ≤1% of women, or ~35K patients in the U.S., were treated with Forteo in FY13 (calculated based on FY13 Forteo U.S. sales by Eli Lilly of ~$511M). We forecast penetration of abaloparatide-SC into Forteo-eligible patients to gradually increase from ~5% in 2017 to ~50% in 2027, with discontinuation rates of ~5% in 2017 increasing to ~25% in 2027 (based on <2 year average treatment duration for Forteo). Assuming parity pricing of abaloparatide-SC to Forteo (WAC of ~$17K), we forecast peak annual U.S. sales potential of $308M in 2027. For the 5% fixed royalty payment to Ipsen, we assume until the last abaloparatide-SC patent expiry in 2028.

In the EU, assuming a market launch in 2018, we project abaloparatide-SC peak sales of ~$200M in 2026, with peak royalty revenue to Radius of ~$50M (Exhibit 10). On an estimated ~9.9M women treated for osteoporosis in the EU (from an estimated ~22M women diagnosed, according to Hernlund et al., *Arch Osteoporos* 2013; 8(1-2):136), we estimate <1% or ~35K patients in the EU were treated with Forteo in 2013 (assuming similar # patients as in the U.S.). Similar to our assumptions in the U.S., we forecast penetration of abaloparatide-SC into Forteo-eligible patients to gradually increase from ~5% in 2018 to ~50% in 2026, with discontinuation rates of ~5% in 2018 increasing to ~25% in 2028. Assuming abaloparatide-SC EU pricing at ~80% of that in the U.S. (annual treatment cost of ~$14K), we forecast peak annual EU sales potential of ~$200M in 2026, with ~$50M royalty revenue to Radius (on net royalty of 25%).

Exhibit 10: Abaloparatide-SC Revenue Projections

$ in M	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Jefferies WW sales	**$26**	**$110**	**$224**	**$320**	**$398**	**$438**	**$452**	**$466**	**$481**	**$496**	**$512**
% y/y growth		*317%*	*104%*	*43%*	*24%*	*10%*	*3%*	*3%*	*3%*	*3%*	*3%*
Jefferies U.S. sales	$26	$88	$153	$199	$243	$253	$263	$274	$285	$296	$308
% y/y growth		*235%*	*73%*	*31%*	*22%*	*4%*	*4%*	*4%*	*4%*	*4%*	*4%*
Jefferies EU sales	$0	$22	$71	$121	$155	$185	$189	$192	$196	$200	$204
% y/y growth			*228%*	*70%*	*28%*	*19%*	*2%*	*2%*	*2%*	*2%*	*2%*

Source: Company reports and Jefferies

Exhibit 11: Historical Forteo Sales from Launch (2003-2013)

$ in M	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Worldwide sales	**$65**	**$239**	**$389**	**$594**	**$709**	**$779**	**$817**	**$830**	**$950**	**$1,151**	**$1,245**
y/y growth		*265%*	*63%*	*53%*	*19%*	*10%*	*5%*	*2%*	*14%*	*21%*	*8%*
U.S. sales		$198	$265	$416	$494	$490	$518	$499	$453	$488	$511
y/y growth			*34%*	*57%*	*19%*	*-1%*	*6%*	*-4%*	*-9%*	*8%*	*5%*
ex-U.S. sales		$41	$125	$178	$215	$289	$298	$331	$497	$623	$734
y/y growth			*207%*	*43%*	*21%*	*34%*	*3%*	*11%*	*50%*	*25%*	*18%*

Source: Company reports and Jefferies

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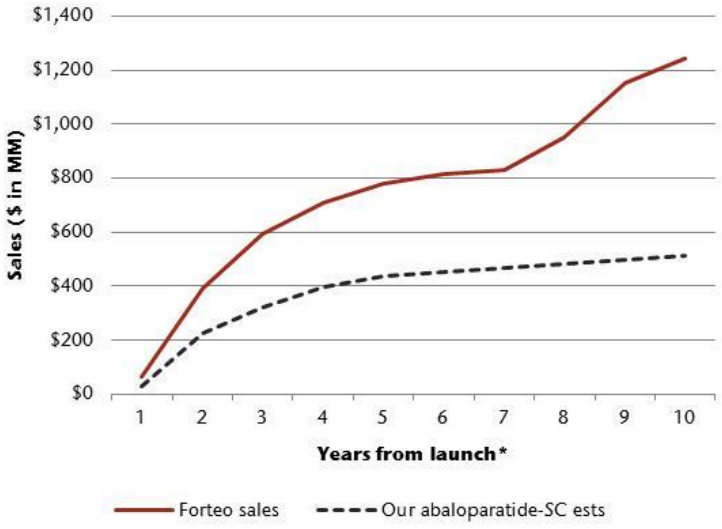
Exhibit 12: Abaloparatide-SC Sales Projections vs. Forteo Sales from Launch



* For abaloparatide-SC, we forecast launch in 2017/2018 in U.S./EU, respectively. Forteo launch in December 2002 in U.S. and June 2003 in EU

Source: Company reports and Jefferies

Competitition

Behind abaloparatide-SC, most advanced anabolic agent in development for osteoporosis is Amgen's romosozumab (AMG785; sclerostin inhibitor) (Exhibit 13). Romosozumab is a humanized monoclonal antibody (mAb) against sclerostin, a protein expressed in osteocytes that normally functions to inhibit Wnt (Wingless-type mouse mammary virus integration site) pathway signalling, which regulates bone formation and regeneration among many other biological processes. By inhibiting sclerostin, romosozumab is designed to enhance Wnt signalling, thereby stimulating osteoblastic bone formation (Lewiecki, *Ther Adv Musculoskel Dis* 2014 Apr; 6(2):48-57). Aside from romosozumab, Novartis' (NOVN VX, $90.17, Buy) BPS804 (Phase 2) and Eli Lilly's blosozumab (Phase 1) are sclerostin antibodies in early clinical development. In the anti-resorptive class, Merck's (MRK, $57.96, Hold) oral odanacatib (Phase 3) is a new class of agents (known as cathepsin K inhibitors); the lysosomal protease cathepsin, expressed in osteoclasts, functions to degrade collagen in the bone matrix (Zerbini, *Ther Adv Musculoskel Dis* 2013 Aug; 5(4):199-209).

Alternative PTH formulations (vs. SC version) face challenges - lack of bioequivalence and low bioavailability. According to our endocrinologists, the major challenge for alternative formulations of PTH (transdermal patch, intranasal, oral) has been demonstrating bioequivalence vs. SC formulation. For the transdermal formulation, experts also indicated differences in bone turnover markers vs. SC formulation, including a bone anabolic marker such as P1NP [(N-terminal propeptide of type 1 procollagen]) and bone resorption marker such as CTX [carboxy-terminal collagen crosslinks]). Of the transdermal patch technologies, an expert noted that microlancet technology (such as 3M's solid Microstructured Transdermal System used in abaloparatide-TD) has the best potential for producing bioequivalent transdermal formulations. For intranasal formulations of PTH (such as Critical Pharmaceuticals'

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CP046), an expert noted relatively low bioavailability of hormones delivered via the nasal route (vs.SC administration) and theoretical risk of facial bone remodelling via local bone absorption of PTH.

Romosozumab (AMG785)

With Phase 3 data from AMGN/UCB's romosozumab in ~1H16 (& potential market entry in ~mid-2017), it is likely ~1 year behind abaloparatide-SC. Begun on 4/4/12 and expanded to n=7,180 patients (from ~6,000), a randomized, double-blind, parallel-group Phase 3 study (FRAME) compares romosozumab vs. placebo for 12 months, followed by additional 12-months open-label extension with Prolia (denosumab) injections. Primary endpoint is incidence of vertebral fractures at 12 and 24 months, with secondary endpoints of incidence of fracture at 12 and 24 months, and changes in BMD from baseline to 12 months and 24 months.

In Phase 2, highest dose romosozumab showed +11.3% absolute mean increases in lumbar spine BMD at 12 months, similar to abaloparatide-SC (+12.93%). Published in *New England Journal of Medicine* this January (McClung et al., *N Engl J Med* 2014; 370:412-20), a randomized, placebo-controlled Phase 2 study compared 5 dose regimens of romosozumab (1x monthly SC injection at 70mg, 140mg, and 210mg; 1x every 3 months at 140mg and 210 mg) vs. alendronate (70mg, weekly) vs. SC teriparatide (20ug) in postmenopausal women with low BMD (defined by BMD T-score at lumbar spine, femoral neck or total hip of$\leq$2.0 and $\geq$3.5; n=419). Primary endpoint was percentage change from baseline in lumbar spine BMD at 12 months (romosozumab vs. placebo). At 12 months, the romosozumab highest dose of 210mg 1x monthly (n=49) showed from baseline absolute mean increase in lumbar spine BMD of 11.3% (vs. -0.1%/+4.1%/+7.1% for placebo/alendronate/teriparatide; p$\leq$0.001 vs. all other arms); 4.1% for total hip BMD (vs. -0.7/+1.9/+1.3 for placebo/alendronate/teriparatide; p$\leq$0.001 vs. all other arms), and 3.7% at femoral neck BMD (vs. -1.1/+1.2/+1.1 for placebo/alendronate/teriparatide; p$\leq$0.001 vs. all other arms). With a caveat for comparing data across trials, +11.3% in lumbar spine BMD with romosozumab compares favorably to +12.94% absolute mean increase from baseline observed with abaloparatide-SC at 12 months.

Alternative PTH Formulations

Zosano Pharma plans to begin Phase 2 for weekly dosed transdermal patch ZP-PTH (PTH 1-34) in 1H15. ZP-PTH is a synthetic human PTH (1-34)-coated microneedle patch. Completed in January 2014, Phase 1 open-label, randomized dose-ranging crossover study (conducted in Australia) compared one or two weekly doses of ZP-PTH (1 or 2 patches of 60ug, 1 or 2 patches of 120ug, and 2 patches of 90ug) vs. two doses of teriparatide (20ug and 57ug [dose of teriparatide approved in Japan & marketed as Teribone]) in healthy postmenopausal women (n=32), with endpoints of bioavailability and pharmacokinetics. The study demonstrated rapid increases in serum PTH followed by rapid decreases (pulsatile pattern) with all patch doses, which is the optimal PK profile for an anabolic agent. Zosano completed a previous daily dosing study with ZP-PTH in 2010.

Nasal formulation of PTH (1-34) CP046 is currently in Phase 1, with data potentially in ~August 2014. Using its proprietary CriticalSorb nasal delivery technology, a private company, Critical Pharmaceuticals, has developed a nasal formulation of PTH (1-34), CP046 and is conducting a Phase 1 study in collaboration with

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University of Nottingham (Nottingham, U.K.). Phase 1 is an open-label, five-way crossover study comparing single doses of CP046 (22.5ug, 45ug and 90ug) vs. Forteo (20ug; SC injection) in healthy post-menopausal women (n=7). Primary endpoints include AUC (area under the curve) and Cmax for 6 hours after each single administration. The trial will evaluate 2 nasal delivery devices.

Odanacatib

Odanacatib is an anti-resorptive agent (vs. anabolic abaloparatide-SC); thus, we do not view odanacatib to be a potential competitor for RDUS. Event-driven Phase 3 study for odanacatib (begun in 2007, comparing odanacatib 50mg 1x weekly vs. placebo in 16,716 PMO patients) stopped at first planned interim analysis with significant decreases in fracture risks vs. placebo (after ~70% of targeted number of hip fractures [n=274]; p-value not disclosed); MRK began closing the study in July 2012 (no detailed data available yet). Adverse events associated with odanacatib included morphea (<0.2%; areas of skin thickening with itching), which improved after treatment discontinuation and femoral shaft fractures of an atypical type (<0.1%). No cases of osteonecrosis of the jaw (a side effect observed in ~2% of patients treated with Prolia [denosumab]) were reported. From an update at its R&D Day on 5/6/14, Merck noted that all patients in the study have completed 4 years of blinded therapy, with all patients expected to complete 5 years of blinded therapy in the fall of 2014 (originally designed as a 3-year event-driven portion and a 2-year blinded placebo-controlled extension portion). Merck anticipates NDA filing in 2H14.

Odanacatib showed a +5.7% relative mean increase in lumbar spine BMD from baseline (vs. placebo) in Phase 2. Published in *Journal of Bone and Mineral Research* in May 2010; 25(5):937-47 by Bone et al., at 12 months, 50mg odanacatib showed +5.7% relative mean increases in BMD (vs. placebo) for lumbar spine (primary endpoint), 4.1% for total hip, 4.7% for femoral neck, 5.1% for trochanter, and 2.9% for one-third radius. Phase 2 was a randomized, double-blind study comparing 1x weekly odanacatib (3mg, 10mg, 25mg or 50mg) vs. placebo in postmenopausal women with low-bone mineral density (n=399; defined by BMD T-score at lumbar spine, femoral neck, trochanter or total hip of $\leq$2.0 and $\geq$3.5).

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Exhibit 13: Selected Drugs in Development for Osteoporosis

Product	Description	Company	Status	Dosing	Clinical details
Anabolic agents					
Abaloparatide-SC (BA058)	Synthetic peptide analog of parathyroid hormone-related protein (PTHrP)	Radius Health	Phase 3 data in 4Q14 with potential U.S./EU regulatory filing in ~mid-2015 & approval in 2016/2017	subcutaneous, daily	Phase 3 randomized (1:1:1), parallel group, dose-finding ACTIVE study (began in 4/11, with enrollment completed in 3/13) comparing 1x daily abaloparatide (80ug) vs. Forteo (20ug) vs. placebo in PMO women (n=2,463) with primary endpoint of new vertebral fractures vs. placebo at 18 mo and secondary endpoints including BMD of lumbar spine, hip, and femoral neck, non-vertebral fractures, and # of hypercalcemic events
Romosozumab (AMG785)	Humanized anti-sclerostin mAB	Amgen/UCB/ Astellas	Phase 3 data in 1H16	subcutaneous, 1x monthly	Phase 3 randomized, double-blind, parallel-group study (FRAME, n=7,180) comparing romosozumab vs. placebo for 12 mo, followed by 24 mo open-label denosumab; primary endpoint of incidence of vertebral fractures at 12 and 24 mo, with secondary endpoints of incidence of fracture at 12 mo, changes in BMD from baseline to 12 months, incidence of fractures at 24 months, and changes in BMD from baseline to 24 months
BPS804	Human anti-sclerostin mAB	Novartis	Phase 2 completed in ~October 2013	N/A	Phase 2 randomized, double-blind multiple-dose study testing three dosing frequencies of BPS804 vs. placebo in postmenopausal women with osteoporosis (n=75) began in July 2011 with primary endpoint of change from baseline to 9 months in BMD at lumbar spine for individual dosing groups vs. pooled placebo arms
ZP-PTH	Synthetic human PTH (1-34)-coated microneedle patch	Zosano Pharma	Phase 1 completed; Phase 2 expected to begin in 1H15	weekly transdermal patch	Phase 1 open-label, randomized dose-ranging crossover study (conducted in Australia) compared one or two weekly doses of ZP-PTH (1 or 2 patches of 60ug, 1 or 2 patches of 120ug, and 2 patches of 90ug) vs. teriparatide (20ug or 57ug) in healthy postmenopausal women (n=32) testing bioavailability & PK completed in January 2014
CP046	Nasal PTH formulation	Critical Pharmaceuticals	Phase 1 data in ~August 2014	intranasal; frequency not determined	Phase 1 is an open-label, five-way crossover study comparing single doses of CP046 (22.5ug, 45ug and 90ug) vs. Forteo (20ug; SC injection) in healthy post-menopausal women (n=7) with primary endpoints including AUC after 6 hrs single-dose administration
Blosozumab (LY2541546)	Humanized anti-sclerostin mAB	Eli Lilly	Phase 1 data in ~September 2014	subcutaneous, 1x every 2 weeks	Phase 1 multi-dose study testing in postmenopausal women with osteoporosis (n=40); primary endpoints of PK including Cmax and area under the curve (AUC)
Anti-resorptive agents					
Odanacatib (MK-0822)	Small molecule cathepsin K inhibitor	Merck	Phase 3 completed; potential NDA filing in 2H14	oral, 1x weekly	Positive topline results for Phase 3 randomized event-driven study comparing odanacatib vs. placebo in women with PMO (n=16,716) announced in 6/12; primary endpoints including time from baseline to first vertebral fracture, time from baseline to first hip fracture, and time from baseline to first clinical non-vertebral fracture; detailed data at a medical conference in 2014

SC=subcutaneous; mAB=monoclonal antibody

Source: Company reports and Jefferies

RAD1901: ER+ Breast Cancer Bone Metastases (BCBM)

Originally licensed from Eisai in 2006, Radius owns worldwide rights (ex-Japan) to RAD1901. RAD1901 is an oral small molecule that binds to the estrogen receptor (ER; known as selective estrogen receptor downregulator/modulator SERD/SERM) with an ability to cross the blood-brain barrier, which is well suited for the treatment of ER-positive breast cancer with bone metastases (BCBM). RDUS is currently conducting a two-part Phase 1 study in healthy volunteers to determine MTD (data expected in 3Q14), with

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expansion into ER-positive BCBM patients expected to begin by end-2014 and potential data in 2015.

At high doses, RAD1901 functions as a selective estrogen receptor down-regulator/degrader (SERD); at low doses, as a selective estrogen response modifier (SERM). SERDs function to induce degradation of the ER, whereas SERMs function to selectively inhibit the ability of ER to bind estrogen, but do not decrease the number of ERs on the cell surface. In addition, the activities of RAD1901 appear to be tissue-specific. Preclinical studies have shown that RAD1901 functions as an estrogen agonist in the bone, an estrogen antagonist in the breast and uterus, and either as an estrogen agonist or antagonist in the CNS, depending on the dose.

Currently, there is no FDA-approved targeted therapy that crosses the blood-brain barrier for patients with ER-positive BCBM (Exhibit 14). Current treatments for BCBM include whole-brain radiation, surgery, or stereotactic radiosurgery (gamma knife). While treatments such as radiation and surgery can increase the permeability of the blood brain barrier, enabling chemotherapy or small molecule drugs to pass, there are limited treatment options prior to radiation or surgery. For ER-positive BC, current treatment options include: aromatase inhibitors (block conversion of androgens into estrogens) such as letrozole (Femara), asastrozole (Arimidex) or exemestrane (Aromasin), SERMs such as tamoxifen (Nolvadex) and SERDs such as fulvestrant (Faslodex) (May, *Cancer Manag Res.* 2014 May 23; 6:225-252). However, none of these treatment options are FDA approved to treat brain metastases.

Radius estimates ~12K ER-positive BCBM patients in the U.S., a potential orphan indication. There are an estimated ~155K women with breast cancer in the U.S. According to Radius, ~70% are estrogen-receptor positive (ER+) and ~10%-16% have brain metastases. Thus, we estimate ~11K-17K patients with ER-positive BCBM in the United States. In March 2014, Radius submitted an application applying for orphan product designation of RAD1901 for the treatment of BCBM to the FDA, with potential decision in ~2015 (pending submission of Phase 1 results in ER-positive BCBM patients to FDA).

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Exhibit 14: Marketed Selective Estrogen Receptor Modulators/Downregulators (SERMs/SERDs) for Breast Cancer

Product	Mode of Administration	Indication	Status	Marketing Rights	Patent Expiry
Selective Estrogen Receptor Modulator (SERM)					
Evista (raloxifene)	Oral	Invasive breast cancer risk reduction in high risk postmenopausal women, invasive breast cancer risk reduction in postmenopausal women with osteoporosis, treatment & prevention of osteoporosis in postmenopausal women	Approved in 1997 in U.S., 1998 in EU Evista WW sales of $1.0B in 2013	Eli Lilly and Company	Generic in U.S. (patent expiry in March 2014)/EU
Nolvadex (tamoxifen)	Oral	Metastatic breast cancer, adjuvant treatment of breast cancer, ductal carcinoma in situ (DCIS), reduction in breast cancer incidence in high risk women	Approved in 1977 in U.S. for pts with advanced breast cancer; sales of generic forms of tamoxifen totaled $50M in 2007	AstraZeneca	Generic in U.S./EU
Fareston (toremifene)	Oral	Metastatic breast cancer in postmenopausal women with estrogen receptor positive or unknown tumors	Approved in 1997 in U.S., 1996 in EU Fareston WW sales of $7M in 2011	ProStrakan, subsidiary of Kyowa Hakko Kirin	2009 in U.S.
Selective Estrogen Receptor Downregulator (SERD)					
Faslodex (fulvestrant)	Intramuscular injection	Treatment of hormone receptor positive metastatic breast cancer in postmenopausal women with disease progression following antiestrogen therapy	Approved in 2002 in U.S.; 2004 in EU Faslodex WW sales of $681M in 2013	AstraZeneca	2021 in U.S./EU

Source: Company reports and Jefferies

Clinical Programs for RAD1901

Second part of Phase 1 for RAD1901 to begin by YE14 in patients with ER-positive BCBM. Goal of the first part of ongoing two-part Phase 1 (n=10 per cohort, until MTD is reached) study in healthy patients is to determine maximum tolerated dose (MTD) as well as tolerability, safety, and pharmacokinetics of RAD1901, utilizing 18F-fluroestradiol positron emission tomography (PET) scanning to evaluate the pharmacodynamics of ER turnover in the brain with RAD1901 treatment. In second part of Phase 1 study, expected to begin by end-2014, Radius plans to evaluate efficacy of RAD1901 in patients with ER-positive BCBM (potentially n=~8-12 patients). In initial human testing, half-life of RAD1901 was ~30 hrs, and RAD1901 was safe at doses up to 200mg for 7 days. Preclinical data showed an inhibition of ER-dependent tumor growth in an *in vivo* breast tumor model and inhibition of breast cancer cell proliferation in a breast cancer cell line with high dose RAD1901 (10mg/kg).

Radius is seeking a partnership for RAD1901 in vasomotor symptoms indication (Phase 2-ready); not in our assumptions. Completed in 2010 (O'Dea et al.; ENDO 2010 presentation) Phase 2 was a randomized, double-blind, parallel-group dose-finding study, comparing four doses of 1x daily RAD1901 administered for 28 days (10mg, 25mg, 50mg, or 100mg) vs. placebo in postmenopausal women experiencing $\geq$50 moderate/severe hot flashes per week (n=100). While a dose-response effect was not observed, at 10mg dose RAD1901 showed a statistically significant reduction in frequency of moderate and severe hot flashes vs. placebo, and in the overall frequency of hot flashes vs. placebo at 3 and 4 weeks ($p<0.05$). RDUS notes efficacy of RAD1901 at lower doses in vasomotor symptoms (and not at higher doses) is consistent with RAD1901's proposed estrogen-like effects at low doses, with estrogen antagonistic effects at high doses.

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Competition for RAD1901

Several products are in development to treat BCBM; however, RAD1901 is the only one targeting ER-positive BCBM, according to RDUS (Exhibit 15). Within HER2-positive BCBM, there are several products in development, including Puma's (PBYI, $62.71, NC) neratinib (Phase 2), and Array's (ARRY, Buy) ARRY-380 (Phase 1). However, to our knowledge, RAD1901 is the only product in development targeting ER-positive BCBM.

Seragon Pharmaceuticals' ARN-801 is a SERD in development for treating ER-positive mBC; to our knowledge, no ongoing studies include patients with brain metastases. Begun in March 2013, ongoing Phase 1 is a dose-escalation study in patients with metastatic ER-positive BC (n=72) to determine MTD and recommended Phase 2 dose of ARN-801. In the study, patients with untreated or symptomatic CNS metastases are excluded from enrollment. According to RDUS, ARN-801 does not cross the blood brain barrier. On 7/1/14, Roche (ROG VX, CHF 268, Buy) announced its planned acquisition of Seragon for up to ~$1.7B ($725M cash with $1.0B contingent development milestones), expected to close in 3Q14.

Geron's (GERN, $2.88, NC) GRN1005 was previously developed for BCBM; however, was discontinued after an interim analysis in Phase 2. Geron's trial specifically selected patients with ≥1 documented metastatic brain lesion. Phase 2 study (GRABM-B; n=80, discontinued after interim analysis at n=30 evaluable patients) assessed GRN1005 +/- trastuzumab in HER2-positive BCBM patients with ≥1 radiologically-confirmed metastatic brain lesion, with primary endpoint of intracranial ORR at 1 year. In December 2012, an interim analysis demonstrated no confirmed intracranial responses in first 30 evaluable patients, and the GRN1005 program was discontinued.

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Exhibit 15: Selected Targeted Therapies for Potential Treatment of BCBM

Product	Description	Mode of Administration	Company	Status	Targeted indication	Clinical details
Tykerb (lapatinib)	Reversible dual inhibitor of HER2 and EGFR/HER1	oral	GlaxoSmithKline	Marketed (U.S. approval in 2007 for breast cancer)	HER2-positive mBC with brain metastases	FDA approved for HER2-positive metastatic BC Phase 2 (LANDSCAPE) single-arm open-label study testing lapatinib in combination with capecitabine in pts with HER-2-positive BCBM (n=45) was completed in 2012, showed ~67% PRs (n=29/45)
Gilotrif (afatinib)	Irreversible dual inhibitor of HER2 and EGFR/HER1	oral	Boehringer Ingelheim	Marketed (U.S. approval in 7/13 for NSCLC)	HER2-positive mBC with brain metastases	FDA approved for 1st-line EGFR positive metastatic NSCLC Phase 2 LUX-Breast 3 compares Gilotrif +/- vinorelbine vs. investigator's therapy choice in patients with mBC and brain metastases after trastuzumab or lapatinib failure with primary endpoint of absence of CNS progression; potential data in ~9/14
Neratinib (HKI-272)	Irreversible pan-HER (HER1, HER2, HER4) inhibitor	oral	Puma	Phase 2	HER2-positive mBC with brain metastases	Phase 2 in patients with HER2-positive breast cancer and brain metastases (n=105) began in ~2/12 comparing daily neratinib vs. neratinib plus craniotomy vs. neratinib plus Xeloda with primary endpoint of ORR and secondary endpoints of PFS and OS; potential data in ~12/14
ANG1005	LRP-1 targeted taxane derivative	IV infusion	Angiochem	Phase 2	HER2-positive mBC with brain metastases	Phase 2 single-arm study in patients with HER2-positive breast cancer and recurrent/progressing brain metastases (n=40) began in 3/14 with primary endpoint of intracranial ORR and secondary endpoints of intracranial PFS, duration of response, and 6-month OS; potential data in ~4/16
TPI-287	Third-generation taxane	IV infusion	Cortice Biosciences	Phase 2	secondary brain metastases from breast cancer	Phase 2 single-arm study in patients with mBC and brain metastases (n=69) began in August 2011 testing IV dosing of TPI-287; primary endpoint of ORR and potential data in ~8/16
BKM-120	Pan-PI3K inhibitor	oral	Novartis	Phase 1b/2	HER2-positive mBC with brain metastases	Phase 1b/2 open-label study in mBC patients without brain metastases and patients with mBC brain metastases who previously failed Herceptin (n=69) began in May 2010 with primary endpoint of DLTs and AEs, and secondary endpoint of patients with ORR after 2 cycles of therapy; potential data in ~6/14
ARRY-380	Reversible selective HER2 inhibitor	oral	Oncothyreon/Array	Phase 1	HER2-positive mBC with brain metastases	ONTY-funded & run Ph1b POC data for three-arm study comparing ARRY-380 + Herceptin vs. ARRY-380 + Xeloda vs. ARRY-380 + Herceptin + Xeloda in metastatic breast cancer in 05/16 (began on 2/3/14, incl. pts with brain mets; n=138); investigator-sponsored Ph1 dose-escalation data (1x or 2x daily ARRY-380) in combination with Herceptin in pts with HER2-positive breast cancer and brain metastases in 11/16 (began on 9/3/13, n=up to 50) to determine MTD and recommended Ph2 dose
RAD1901	Selective estrogen receptor (ER-alpha) down-regulator (SERD)/ selective estrogen receptor modulator (SERM)	oral	Radius	Phase 1	ER-positive breast cancer with brain metastases	Phase 1b initiation in ER-positive mBC with brain metastases expected in 2014
ARN-810	Selective estrogen receptor (ER-alpha) down-regulator (SERD)	oral	Roche	Phase 1	ER-positive breast cancer	Phase 1 in ER-positive BC began in 3/13 with potential data in ~3/15
Etirinotecan pegol (NKTR-102)	Novel, next-generation topoisomerase I inhibitor	IV infusion	Nektar	preclinic for brain metastases/Phase 3 for mBC	breast cancer (may include brain metastases)	Preclinical data presented at AACR 2014 demonstrated NKTR-102 reduced the size and number of brain metastases and prolonged survival, compared to placebo and irinotecan, in a model of triple-negative breast cancer with brain metastases (cell line)

mBC=metastatic breast cancer; PFS=progression free survival; OS=overall survival

Source: Company reports and Jefferies

Sales Projections for RAD1901

Acquired from Eisai in June 2006, Radius has worldwide (ex-Japan) rights to RAD1901. Under the agreement, Radius is obligated to pay Eisai future contingent milestone payments (ranging from $1M to $20M in clinical and regulatory milestones), including a total of already paid milestones of $1.5M (including initial licensing fee of $0.5M). In addition, Radius is obligated to pay Eisai a variable mid-single digits royalty based on net RAD1901 product sales on a country-by-country basis until the later of either 10 years after the first commercial sale of RAD1901 or the last RAD1901 patent expiry (expected on

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8/18/26). We assume a $5M milestone payment (single-digit millions, according to Radius) to Eisai in 2015 upon Phase 2 completion for RAD1901. Patents/patent applications covering RAD1901 in U.S. and EU include two patents for composition of matter (including one for molecular structure and one for particular salt formulation) as well as method of use for treating estrogen-dependent breast cancer (expiry on 8/18/26 and 12/25/23 in the U.S., respectively; both with projected expiry in 2023 in EU). In addition, pending patents include specific dosage regimens (projected expiry in 2031) and a method of use patent for the treatment of vasomotor symptoms (projected expiry in 2027).

In the U.S./EU combined, for ER+ BCBM, we project RAD1901 peak sales potential of ~$235M in 2025. Our assumptions include: (1) U.S./EU market entry in 2020/2021, respectively, (2) ~12K ER-positive BCBM patients eligible for RAD1901 in the U.S./EU each, (3) average treatment cost/patient of $150K in U.S./$120K in EU, and (4) tiered 5%-8% royalty on sales to Eisai until 2030/2031 in U.S./EU (10 years after first commercial sale), respectively. At peak penetration of ~10% in the U.S./EU in ER-positive BCBM patient candidates, we forecast peak U.S./EU sales of ~$142M/~$93M, respectively in 2025.

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Management Team

Radius Health's board of directors is comprised of seven outsiders and one insider, including Kurt Graves, CEO of Intarcia Therapeutics; Alan Auerbach, CEO of Puma Biotechnology; Ansbert Gadicke, MD, Managing Director at MPM Capital; Martin Munchback, PhD, Managing Director of BB Biotech Ventures; Elizabeth Stoner, MD, Managing Director at MPM Capital; Owen Hughes, Chief Business Officer at Intarcia Therapeutics; Morana Jovan-Embiricos PhD, Managing Director at F2 Ventures; and Robert Ward, CEO of Radius.

Robert Ward – President & Chief Executive Officer, Board of Directors
Robert Ward became President and CEO of Radius in December 2013. With more than 26 years of experience in the pharmaceutical industry, he was most recently Vice President of Strategy & Alliances, New Opportunities for AstraZeneca (AZN LN, $75.01, Hold), where he was responsible for evaluating strategic drug development collaborations and licensing opportunities (2011-2013). Mr. Ward has also held senior management positions at NPS Pharmaceuticals (NPSP, $28.02, Hold), Schering-Plough (Merck [MRK, $57.91, Hold]), Bristol-Myers Squibb (BMY, $48.71, Hold), and Genentech.

Nick Harvey – Senior Vice President, Chief Financial Officer
Nick Harvey has served as CFO of Radius since 2006. With more than 15 years of experience in financing life sciences and technology companies, he was most recently Managing Director at Shiprock Capital LLC, a venture capital firm (2002-present). Mr. Harvey has also served as CFO of Transfusion Technologies (1999-2000), a medical device company acquired by Haemonetics (HAE, $34.98, Buy) in 2000, and Transcend Therapeutics (1992-1999), acquired by KeraVision Inc. in 1999.

Alan G. Harris, MD, PhD, FRCP - Chief Medical Officer
Dr. Harris joined Radius as CMO in February 2014. With more than 25 years of experience in clinical research and development, most recently Dr. Harris served as CMO at Morria/Celsus Biopharmaceuticals (2012-2013). Prior to Morria/Celsus, he held CMO positions at Immune Pharmaceuticals (2011-2012), NPS Pharmaceuticals (2008-2009), and Manhattan Pharmaceuticals (2006-2007). Dr. Harris is an adjunct professor of medicine endocrinology at New York University (2003-present).

Greg Williams, PhD, MBA – Chief Development Officer
Dr. Williams joined Radius as CDO in January 2014. With more than 30 years of experience in the biotechnology and pharmaceutical industries, he was most recently Vice President of Regulatory Affairs, Global Product and Clinical Development, and Program Management with The Medicines Company (MDCO, $26.55, Hold) (2006-2013). Prior to The Medicines Company, Dr. Williams was Vice President of Regulatory Affairs, Regulatory Compliance and Program Management at NPS Pharmaceuticals (NPSP, $28.02, Hold) (2004-2006).

Gary Hattersley, PhD - Chief Scientific Officer
Dr. Hattersley was appointed CSO of Radius in January 2014, having previously served as Senior Vice President, Preclinical Development at Radius (2003-2014). Prior to joining Radius, Dr. Hattersley was a Senior Scientist at Millennium Pharmaceuticals, responsible for discovering and developing novel small-molecule agents for the treatment of metabolic bone diseases (2000-2003). Dr. Hattersley has also held scientific positions at Genetics Institute/Wyeth Research (1992-2000).

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Mark W. Durand - Chief Commercial Officer
Mark Durand joined Radius as CCO in April 2014. With over 28 years of experience in the pharmaceutical industry, prior to Radius Mr. Durand was a consultant for S&G Biopharm LLC (2011-2014). Mr. Durand has also served as CFO of Actavis (ACT, $218.97, NC) (2007-2009) and Teva Pharmaceuticals (TEVA, $54.40, Buy) (2004-2007), and has held several executive management positions at Bristol-Myers Squibb (BMY, $48.71, Hold) (1987-2004) including as Vice President of Neuroscience/Global Brand Champion for Abilify.

Financial Projections and Analysis

As of June 30, 2014, Radius had approximately ~$80M in cash, including ~$52.2M net proceeds from the recent IPO on 6/5/14. We estimate Radius's cash to be sufficient to fund operations roughly thru 2015 (vs. into 3Q15, according to Radius), and we currently assume an equity raise in 2015 following our assumption of positive Phase 3 data for abaloparatide-SC in December 2014. We forecast Radius to reach sustainable profitability in ~2019.

On 5/30/14, RDUS completed an initial public offering of 6,500,000 shares of common stock at $8/sh, with net proceeds of ~$52.2M; Jefferies served as a joint book-running manager. On 5/30/2014, RDUS entered into a loan agreement with Oxford Finance & Solar Capital, borrowing an aggregate amount of $21M with an annual interest rate of 9.85%. In an amendment announced on 7/11/14, RDUS borrowed an additional $4M in principal, with potential to borrow an additional $5M through 12/31/14, if RDUS completes either an equity offering or strategic agreement resulting in $13M net proceeds, or completes maximum tolerated dose portion and enrolls the first patient with ER-positive BCBM in Phase 1 for RAD1901. The loan agreement provides for interest-only payments through 6/1/15 (or through 12/1/15 if RDUS completes an equity offering or strategic agreement resulting in ≥$65M net cash proceeds on or before 5/31/15), and payment of interest and principal in monthly installments starting on 7/1/15 and continuing for 36 months through 7/1/18 (or starting on 1/1/16 and continuing for 30 months through 7/1/18 if RDUS receives ≥$65M net cash proceeds on or before 5/31/15).

Revenues

In 2013, Radius did not generate any meaningful revenue, and we do not forecast any revenue until a partnership or commercial launch of abaloparatide-SC. For an assumed EU partnership, we assume net revenue of $31.5M (net of ~low double-digit payment to Ipsen) in upfront payment upon a partnership in 2016. For abaloparatide-SC, we assume U.S./EU launches in 2017/2018, respectively. In the U.S., we project total sales of ~$26M, $88M, $153M, and $199M for 2017-2020, reaching ~$243M in 2021 on ~16,172 patients on abaloparatide-SC in the U.S. In the EU, we project total royalty revenue to Radius (assumed royalty rate of ~25%) of ~$5M, ~$18M, $30M, and $39M for 2018-2021, reaching ~$46M in 2022.

Expenses

With significantly increasing SG&A expenses for building out U.S. commercial infrastructure in preparation for abaloparatide-SC launch in 2016, offsetting by declining R&D expenses from the completion of pivotal Phase 3 study in osteoporosis, we expect RDUS's cash usage to start increasing in 2016 from current levels (estimated OpEx of

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$52M/$46M/$63M; -23%/-10%/+35% y/y for 2014-2016, respectively). For R&D spending, we forecast ~$42M in 2014 (-31% y/y), ~$31M (-25% y/y) in 2015, and ~$25M in 2016 (-20% y/y) with end of pivotal Phase 3 trial for abaloparatide-SC in osteoporosis. For SG&A spending, we assume significant growth from ~$10M in 2014 (+47% y/y) to $15M in 2015 (+50% y/y), and $38M in 2016 (+150% y/y) as RDUS prepares for a commercial launch of abaloparatide-SC in the U.S. in 2017. We estimate gross margin for abaloparatide-SC to be ~93%.

Valuation

Our $17 PT is based on NPV analysis of ~$12/share for abaloparatide-SC U.S. sales in osteoporosis (85% probability adjusted peak sales of ~$308M in 2027) and ~$5/share for EU abaloparatide-SC royalties in osteoporosis (85% probability adjusted peak royalties of ~$51M in 2027), discounting at an annual rate of 11%.

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Exhibit 16: Sales Projections for Abaloparatide-SC in Osteoporosis ($ in '000)

U.S. Sales	2017E	2018E	2019E	2020E	2021E	2022E	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E
# of women diagnosed with osteoporosis	8,242,408	8,324,832	8,408,080	8,492,161	8,577,083	8,662,854	8,749,482	8,836,977	8,925,347	9,014,600	9,104,746	9,195,794	9,287,752	9,380,629
# of treated women with osteoporosis	3,709,084	3,746,174	3,783,636	3,821,473	3,859,687	3,898,284	3,937,267	3,976,640	4,016,406	4,056,570	4,097,136	4,138,107	4,179,488	4,221,283
# of treated osteoporosis patients on Forteo (≤~1%)	38,315	39,465	40,649	41,868	43,124	44,418	45,751	47,123	48,537	49,993	51,493	53,037	54,629	56,267
Penetration into Forteo-eligible patients	5.0%	17.0%	30.0%	40.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
# of osteoporosis patients on abaloparatide-SC	1,916	6,709	12,195	16,747	21,562	22,209	22,875	23,562	24,268	24,996	25,746	26,519	27,314	28,134
Discontinuation rate	*5%*	*10%*	*15%*	*20%*	*25%*	*25%*	*25%*	*25%*	*25%*	*25%*	*25%*	*25%*	*25%*	*25%*
# of net patients treated with abaloparatide-SC	1,820	6,038	10,365	13,398	16,172	16,657	17,156	17,671	18,201	18,747	19,310	19,889	20,486	21,100
WAC	$17,000	$17,170	$17,342	$17,515	$17,690	$17,867	$18,046	$18,226	$18,409	$18,593	$18,779	$18,966	$9,483	$7,587
Pricing after discounts/rebates (gross-to-net)	$14,450	$14,595	$14,740	$14,888	$15,037	$15,187	$15,339	$15,492	$15,647	$15,804	$15,962	$16,121	$8,061	$6,449
U.S. Sales for abaloparatide-SC in PMO by RDUS ($ in '000)	**$26,299**	**$88,123**	**$152,791**	**$199,465**	**$243,168**	**$252,968**	**$263,162**	**$273,768**	**$284,801**	**$296,278**	**$308,218**	**$320,639**	**$165,129**	**$136,067**
y/y growth		*235.1%*	*73.4%*	*30.5%*	*21.9%*	*4.0%*	*4.0%*	*4.0%*	*4.0%*	*4.0%*	*4.0%*	*4.0%*	*-48.5%*	*-17.6%*
Royalty to Ipsen on sales (~5%)	$1,315	$4,406	$7,640	$9,973	$12,158	$12,648	$13,158	$13,688	$14,240	$14,814	$15,411	$16,032		

EU Sales	2017E	2018E	2019E	2020E	2021E	2022E	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E
# of women diagnosed with osteoporosis	22,666,622	22,893,288	23,122,221	23,353,443	23,586,978	23,822,848	24,061,076	24,301,687	24,544,704	24,790,151	25,038,052	25,288,433	25,541,317	25,796,730
# of treated women with osteoporosis	10,199,980	10,301,980	10,404,999	10,509,049	10,614,140	10,720,281	10,827,484	10,935,759	11,045,117	11,155,568	11,267,123	11,379,795	11,493,593	11,608,529
# of treated osteoporosis patients on Forteo (<1%)	38,315	39,465	40,649	41,868	43,124	44,418	45,751	47,123	48,537	49,993	51,493	53,037	54,629	56,267
Penetration into Forteo-eligible patients	0.0%	5.0%	17.0%	30.0%	40.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
# of osteoporosis patients on abaloparatide-SC	-	1,973	6,910	12,560	17,250	22,209	22,875	23,562	24,268	24,996	25,746	26,519	27,314	28,134
Discontinuation rate		*5%*	*10%*	*15%*	*20%*	*25%*	*25%*	*25%*	*25%*	*25%*	*25%*	*25%*	*25%*	*25%*
# of net patients treated with abaloparatide-SC		1,875	6,219	10,676	13,800	16,657	17,156	17,671	18,201	18,747	19,310	19,889	20,486	21,100
EU pricing		$13,600	$13,464	$13,329	$13,196	$13,064	$12,933	$12,804	$12,676	$12,549	$12,424	$6,212	$4,970	$3,976
Pricing after discounts/rebates		$11,560	$11,444	$11,330	$11,217	$11,104	$10,993	$10,884	$10,775	$10,667	$10,560	$5,280	$4,224	$3,379
EU Sales for abaloparatide-SC in PMO by partner ($ in '000)	**$0**	**$21,670**	**$71,176**	**$120,963**	**$154,787**	**$184,965**	**$188,609**	**$192,324**	**$196,113**	**$199,976**	**$203,916**	**$105,017**	**$86,534**	**$71,304**
y/y growth			*228.5%*	*70.0%*	*28.0%*	*19.5%*	*2.0%*	*2.0%*	*2.0%*	*2.0%*	*2.0%*	*-48.5%*	*-17.6%*	*-17.6%*
Net Royalty to Radius on sales (assume ~25%, net of Ipsen)	$0	$5,418	$17,794	$30,241	$38,697	$46,241	$47,152	$48,081	$49,028	$49,994	$50,979	-	-	-

U.S./EU abaloparatide-SC sales in PMO ($ in '000)	**$26,299**	**$109,793**	**$223,967**	**$320,428**	**$397,955**	**$437,933**	**$451,771**	**$466,092**	**$480,914**	**$496,255**	**$512,134**	**$425,656**	**$251,663**	**$207,370**
y/y growth		*317.5%*	*104.0%*	*43.1%*	*24.2%*	*10.0%*	*3.2%*	*3.2%*	*3.2%*	*3.2%*	*3.2%*	*-16.9%*	*-40.9%*	*-17.6%*

Source: Jefferies and company reports

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Exhibit 17: Sales Projections for RAD1901 in BCBM ($ in '000)

U.S. Sales	2019E	2020E	2021E	2022E	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E
Prevalence of metastatic breast cancer (mBC) in U.S.	162,907	164,536	166,181	167,843	169,521	171,216	172,929	174,658	176,404	178,169	179,950	181,750
# of mBC with ER amplification	114,035	115,175	116,327	117,490	118,665	119,852	121,050	122,261	123,483	124,718	125,965	127,225
# of mBC with ER amplification and brain metastases (BCBM)	12,612	12,738	12,866	12,994	13,124	13,256	13,388	13,522	13,657	13,794	13,932	14,071
Penetration of RAD1901		0.5%	2.2%	4.0%	6.0%	8.0%	9.0%	10.0%	10.0%	10.0%	10.0%	10.0%
# of patients treated with RAD1901 for ER+ BCBM		64	283	520	787	1,060	1,205	1,352	1,366	1,379	1,393	1,407
Discontinuation rate		*5%*	*10%*	*15%*	*20%*	*25%*	*25%*	*25%*	*25%*	*25%*	*25%*	*25%*
# of net patients treated with RAD1901 for ER+ BCBM		61	255	442	630	795	904	1,014	1,024	1,035	1,045	1,055
Annual net treatment cost for RAD1901		$150,000	$151,500	$153,015	$154,545	$156,091	$157,652	$159,228	$31,846	$25,476	$24,203	$22,993
U.S. sales in ER+ BCBM ($ in '000)	-	**$9,076**	**$38,593**	**$67,603**	**$97,358**	**$124,144**	**$142,469**	**$161,481**	**$32,619**	**$26,356**	**$25,289**	**$24,265**
y/y growth %			*325.2%*	*75.2%*	*44.0%*	*27.5%*	*14.8%*	*13.3%*	*-79.8%*	*-19.2%*	*-4.1%*	*-4.0%*

EU Sales	2019E	2020E	2021E	2022E	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E
Prevalence of metastatic breast cancer (mBC) in EU	162,907	164,536	166,181	167,843	169,521	171,216	172,929	174,658	176,404	178,169	179,950	181,750
# of mBC with ER amplification	114,035	115,175	116,327	117,490	118,665	119,852	121,050	122,261	123,483	124,718	125,965	127,225
# of mBC with ER amplification and brain metastases (BCBM)	12,612	12,738	12,866	12,994	13,124	13,256	13,388	13,522	13,657	13,794	13,932	14,071
Penetration of RAD1901			0.5%	2.2%	4.0%	6.0%	8.0%	9.0%	10.0%	10.0%	10.0%	10.0%
# of patients treated with RAD1901 for ER+ BCBM			64	286	525	795	1,071	1,217	1,366	1,379	1,393	1,407
Discontinuation rate			*5%*	*10%*	*15%*	*20%*	*25%*	*25%*	*25%*	*25%*	*25%*	*25%*
# of net patients treated with RAD1901 for ER+ BCBM			61	257	446	636	803	913	1,024	1,035	1,045	1,055
Annual net treatment cost for RAD1901			$120,000	$118,800	$117,612	$116,436	$115,272	$114,119	$112,978	$111,848	$110,729	$109,622
EU sales in ER+ BCBM ($ in '000)	-		**$7,333**	**$30,566**	**$52,482**	**$74,084**	**$92,596**	**$104,160**	**$115,722**	**$115,711**	**$115,699**	**$115,687**
y/y growth %				*316.8%*	*71.7%*	*41.2%*	*25.0%*	*12.5%*	*11.1%*	*0.0%*	*0.0%*	*0.0%*

U.S./EU RAD1901 sales in ER+ BCBM by Radius ($ in '000)	-	**$9,076**	**$45,927**	**$98,169**	**$149,840**	**$198,229**	**$235,066**	**$265,642**	**$148,341**	**$142,067**	**$140,988**	**$139,952**
Royalty to Eisai on RAD1901 sales (assume ~5-8%)	-	$454	$2,296	$5,890	$8,990	$13,876	$16,455	$21,251	$11,867	$11,365	$11,279	$11,196

Source: Jefferies and company reports

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Exhibit 18: Estimated NPV Analysis for Radius Health's Products ($ in '000 Except for Per Share Data)

	2014E	2015E	2016E	2017E	2018E	2019E	2020E	2021E	2022E	2023E	2024E	2025E	2026E	2027E	2028E
Sales/Royalty to Radius															
Abaloparatide-SC - U.S. sales	$0	$0	$0	$26,299	$88,123	$152,791	$199,465	$243,168	$252,968	$263,162	$273,768	$284,801	$296,278	$308,218	$320,639
Abaloparatide-SC - EU royalty	$0	$0	$0	$0	$5,418	$17,794	$30,241	$38,697	$46,241	$47,152	$48,081	$49,028	$49,994	$50,979	$0
RAD1901 - U.S./EU sales	$0	$0	$0	$0	$0	$0	$9,076	$45,927	$98,169	$149,840	$198,229	$235,066	$265,642	$148,341	$142,067
NPV for Abaloparatide-SC in U.S.															
US sales ($ in '000)	$0	$0	$0	$22,354	$74,905	$129,873	$169,545	$206,693	$215,023	$223,688	$232,703	$242,081	$251,836	$261,985	$272,543
% y/y growth					*235.1%*	*73.4%*	*30.5%*	*21.9%*	*4.0%*	*4.0%*	*4.0%*	*12.6%*	*12.6%*	*12.6%*	*12.6%*
NOPAT	**($28,916)**	**($32,710)**	**($50,765)**	**($35,332)**	**$20,461**	**$65,769**	**$95,448**	**$121,624**	**$121,195**	**$120,538**	**$118,448**	**$125,429**	**$132,630**	**$140,063**	**$147,739**
Present value (PV)	**($28,916)**	**($32,710)**	**($45,734)**	**($28,676)**	**$14,961**	**$43,324**	**$56,644**	**$65,025**	**$58,375**	**$52,305**	**$46,304**	**$44,174**	**$42,081**	**$40,036**	**$38,045**
Probability	85%														
Discount rate	11%														
NPV ($ in '000)	414,068														
# of shares outstanding ('000)	34,292														
PV/share for Abaloparatide-SC Sales in U.S.	**$12.07**														
NPV for Abaloparatide-SC in EU															
EU royalty ($ in '000)	$0	$0	$31,500	$0	$4,605	$15,125	$25,705	$32,892	$39,305	$40,079	$40,869	$41,674	$42,495	$43,332	$0
% y/y growth						*228.5%*	*70.0%*	*28.0%*	*19.5%*	*2.0%*	*2.0%*	*6.0%*	*6.0%*	*6.0%*	*-100.0%*
NOPAT	**$0**	**($5,000)**	**$31,500**	**$0**	**$4,605**	**$15,125**	**$25,705**	**$32,892**	**$39,305**	**$40,079**	**$40,869**	**$41,674**	**$31,871**	**$32,499**	**$0**
Present value (PV)	**$0**	**($5,000)**	**$28,378**	**$0**	**$3,367**	**$9,963**	**$15,254**	**$17,586**	**$18,932**	**$17,391**	**$15,977**	**$14,677**	**$10,112**	**$9,290**	**$0**
Probability	85%														
Discount rate	11%														
NPV ($ in '000)	155,927														
# of shares outstanding ('000)	34,292														
PV/share for Abaloparatide-SC Royalty in EU	**$4.55**														
NPV for RAD1901 in U.S./EU															
U.S./EU sales ($ in '000)	$0	$0	$0	$0	$0	$0	$4,538	$22,963	$49,085	$74,920	$99,114	$117,533	$132,821	$74,171	$71,033
% y/y growth								*406.0%*	*113.8%*	*52.6%*	*32.3%*	*139.4%*	*77.3%*	*-25.2%*	*-39.6%*
Royalty to Eisai (assuming ~5% to 8%)	$0	$0	$0	$0	$0	$0	$454	$2,296	$5,890	$8,990	$13,876	$16,455	$21,251	$11,867	$11,365
COGS (~7%)			$0	$0	$0	$0	$318	$1,607	$3,436	$5,244	$6,938	$8,227	$9,297	$5,192	$4,972
SG&A	$1,004	$903	$1,882	$3,275	$3,603	$14,410	$19,058	$22,787	$22,641	$21,263	$20,667	$19,634	$18,652	$3,730	$3,544
R&D	$4,177	$4,699	$13,772	$13,571	$15,238	$26,500	$17,375	$12,100	$9,982	$10,980	$10,065	$10,367	$10,678	$10,999	$11,329
Operating profit	($5,181)	($5,603)	($15,654)	($16,846)	($18,840)	($40,910)	($32,666)	($15,827)	$7,136	$28,442	$47,568	$62,850	$72,941	$42,382	$39,823
NOPAT	**($5,181)**	**($5,603)**	**($15,654)**	**($16,846)**	**($18,840)**	**($40,910)**	**($32,666)**	**($15,827)**	**$7,136**	**$28,442**	**$47,568**	**$62,850**	**$54,706**	**$31,787**	**$29,867**
Present value (PV)	**($5,181)**	**($5,603)**	**($14,103)**	**($13,673)**	**($13,776)**	**($26,949)**	**($19,386)**	**($8,462)**	**$3,437**	**$12,342**	**$18,595**	**$22,135**	**$17,357**	**$9,086**	**$7,691**
Probability	50%														
Discount rate	11%														
NPV ($ in '000)	(3,970)														
# of shares outstanding ('000)	34,292														
PV/share for RAD1901 Sales in U.S/EU	**-$0.12**														
NPV for abaloparatide-SC	**$16.62**														
NPV for RAD1901	**-$0.12**														
Total NPV for RDUS	**$16.51**														

Source: Jefferies and company reports

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Exhibit 19: Radius Health Income Statement

Income Statement

($ in thousands except per share)

	2013	1Q14	2Q14E	3Q14E	4Q14E	2014E	2015E	2016E	2017E	2018E	2019E	2020E	2021E	2022E	2023E	2024E	2025E
Revenues																	
Abaloparatide-SC for PMO (U.S.)								-	26,299	88,123	152,791	199,465	243,168	252,968	263,162	273,768	284,801
Growth y/y										*235%*	*73%*	*31%*	*22%*	*4%*	*4%*	*4%*	*4%*
Growth q/q																	
Royalty for abaloparatide-SC for PMO (EU)									-	5,418	17,794	30,241	38,697	46,241	47,152	48,081	49,028
Growth y/y											*228%*	*70%*	*28%*	*19%*	*2%*	*2%*	*2%*
RAD1901 for ER+ BCBM (U.S./EU)												9,076	45,927	98,169	149,840	198,229	235,066
Growth y/y													*406%*	*114%*	*53%*	*32%*	*19%*
Other revenues								31,500									
Total Revenues	-	-	-	-	-	-	-	**31,500**	**26,299**	**93,541**	**170,585**	**238,782**	**327,792**	**397,378**	**460,155**	**520,078**	**568,895**
% growth y/y										*255.7%*	*82.4%*	*40.0%*	*37.3%*	*21.2%*	*15.8%*	*13.0%*	*9.4%*
Expenses																	
Cost of Goods Sold		-	-	-	-	-	-	-	4,734	13,219	21,391	27,020	34,691	43,118	51,059	60,604	67,085
% gross margin (Including royalties to Ipsen & Eisai)									*82.0%*	*85.0%*	*86.0%*	*86.5%*	*85.7%*	*83.0%*	*80.6%*	*77.9%*	*76.4%*
R&D	60,536	9,717	10,200	10,600	11,253	41,770	31,327	25,062	23,809	23,809	24,999	27,499	30,249	33,274	36,601	40,262	44,288
% growth y/y	*10.1%*					*-31.0%*	*-25.0%*	*-20.0%*	*-5.0%*	*0.0%*	*5.0%*	*10.0%*	*10.0%*	*10.0%*	*10.0%*	*10.0%*	*10.0%*
% of total revenues										*25.5%*	*14.7%*	*11.5%*	*9.2%*	*8.4%*	*8.0%*	*7.7%*	*7.8%*
SG&A	6,829	2,139	2,600	2,620	2,680	10,039	15,058	37,645	54,585	60,044	72,052	82,860	91,146	98,438	106,313	114,818	124,003
% growth y/y	*-27.9%*					*47.0%*	*50.0%*	*150.0%*	*45.0%*	*10.0%*	*20.0%*	*15.0%*	*10.0%*	*8.0%*	*8.0%*	*8.0%*	*8.0%*
% of total revenues									*207.6%*	*64.2%*	*42.2%*	*34.7%*	*27.8%*	*24.8%*	*23.1%*	*22.1%*	*21.8%*
Restructuring cost																	
Total Expenses	67,365	11,856	12,800	13,220	13,932	51,808	46,385	62,707	83,128	97,071	118,442	137,379	156,087	174,830	193,973	215,684	235,376
Income (loss) from Operations (EBIT)	**(67,365)**	**(11,856)**	**(12,800)**	**(13,220)**	**(13,932)**	**(51,808)**	**(46,385)**	**(31,207)**	**(56,829)**	**(3,530)**	**52,143**	**101,403**	**171,705**	**222,548**	**266,182**	**304,394**	**333,518**
% growth y/y												*94.5%*	*69.3%*	*29.6%*	*19.6%*	*14.4%*	*9.6%*
Operating margin											*30.6%*	*42.5%*	*52.4%*	*56.0%*	*57.8%*	*58.5%*	*58.6%*
Other Income (Expense), Net	6,675	(2,632)	(500)	(1,100)	(1,268)	(5,500)	(3,000)	(13,800)	(12,600)	(6,300)	500	1,000	2,000	3,000	4,000	5,000	6,000
Earnings (Loss) Before Taxes	(60,690)	(14,488)	(13,300)	(14,320)	(15,200)	(57,308)	(49,385)	(45,007)	(69,429)	(9,830)	52,643	102,403	173,705	225,548	270,182	309,394	339,518
Provision for Taxes	–					–	–	–	–	–	–	5,120	17,371	33,832	54,036	77,348	84,880
Tax Rate											*0.0%*	*5.0%*	*10.0%*	*15.0%*	*20.0%*	*25.0%*	*25.0%*
Net Income (Loss)	**(60,690)**	**(14,488)**	**(13,300)**	**(14,320)**	**(15,200)**	**(57,308)**	**(49,385)**	**(45,007)**	**(69,429)**	**(9,830)**	**52,643**	**97,283**	**156,335**	**191,716**	**216,145**	**232,045**	**254,639**
Extinguishment of preferred stock																	
Accretion of preferred stock	(17,471)	(4,969)				**(4,969)**											
Earnings to preferred stockholders																	
Net Income (Loss) to Common Stockholders	**(78,161)**	**(19,457)**	**(13,300)**	**(14,320)**	**(15,200)**	**(62,277)**	**(49,385)**	**(45,007)**	**(69,429)**	**(9,830)**	**52,643**	**97,283**	**156,335**	**191,716**	**216,145**	**232,045**	**254,639**
EPS (LPS) - Basic	**(203.91)**	**(50.45)**	**(0.54)**	**(0.48)**	**(0.51)**	**(2.41)**	**(1.44)**	**(1.14)**	**(1.73)**	**(0.24)**	1.29	2.36	3.75	4.56	5.09	5.41	5.87
EPS (LPS) - Diluted	(203.91)	(50.45)	(0.54)	(0.48)	(0.51)	(2.41)	(1.44)	(1.14)	(1.73)	(0.24)	**1.15**	**2.10**	**3.34**	**4.06**	**4.53**	**4.82**	**5.23**
% growth y/y (diluted)																	
Shares - Basic	383	386	24,439	29,695	29,992	25,893	34,292	39,635	40,032	40,432	40,836	41,245	41,657	42,074	42,494	42,919	43,348
Shares - Diluted	383	386	24,439	29,695	29,992	25,893	34,292	39,635	40,032	40,432	45,836	46,295	46,757	47,225	47,697	48,174	48,656
Cash, Cash Equivalents & Investments	12,303	29,558	80,133	69,813	59,613	59,613	78,227	127,220	57,792	47,962	100,604	197,887	354,222	545,938	762,084	994,129	1,248,768

Source: Jefferies and company reports

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Exhibit 20: Radius Health Balance Sheet and Cash Flow Statement

Balance Sheet

($ in thousands, except per share)

	2013	2014E	2015E	2016E	2017E	2018E	2019E	2020E	2021E	2022E	2023E	2024E	2025E
Assets													
Cash & cash equivalents	12,303	36,677	48,213	90,618	21,141	27,856	57,696	62,894	67,933	69,223	75,897	69,522	86,896
Marketable securities	-	22,936	30,014	36,602	36,651	20,106	42,909	134,994	286,289	476,716	686,187	924,607	1,161,871
Prepaid expenses and other current assets	334	351	368	387	406	426	448	470	493	518	544	571	600
Total current assets	**12,637**	**59,963**	**78,595**	**127,607**	**58,198**	**48,388**	**101,052**	**198,357**	**354,715**	**546,456**	**762,628**	**994,700**	**1,249,368**
Property and equipment, net	76	80	84	88	92	97	102	107	112	118	124	130	136
Other non-current assets	45	50	54	60	66	72	80	88	96	106	117	128	141
Total assets	**12,758**	**60,093**	**78,734**	**127,755**	**58,356**	**48,557**	**101,234**	**198,552**	**354,924**	**546,680**	**762,868**	**994,959**	**1,249,645**
Liabilities and Stockholders' Equity (Deficit)													
Accounts payable & accrued expenses	22,307	24,538	26,991	29,691	32,660	35,926	39,518	43,470	47,817	52,599	57,859	63,644	70,009
Current portion of note payable, net of discount	13,005		12,000	12,000	6,000	-	-	-	-	-	-	-	-
Total current liabilities	**35,312**	**24,538**	**38,991**	**41,691**	**38,660**	**35,926**	**39,518**	**43,470**	**47,817**	**52,599**	**57,859**	**63,644**	**70,009**
Note payable	-	30,000	18,000	6,000	-	-	-	-	-	-	-	-	-
Warrant liability	1,945	-	-	-	-	-	-	-	-	-	-	-	-
Other liabilities	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Liabilities	**290,059**	**54,538**	**56,991**	**47,691**	**38,660**	**35,926**	**39,518**	**43,470**	**47,817**	**52,599**	**57,859**	**63,644**	**70,009**
Total Stockholders' Equity (Deficit)	**(277,301)**	**5,555**	**21,742**	**80,064**	**19,696**	**12,632**	**61,715**	**155,082**	**307,107**	**494,081**	**705,009**	**931,314**	**1,179,636**
Total Liabilities & Stockholders' Equity	**12,758**	**60,093**	**78,734**	**127,755**	**58,356**	**48,557**	**101,234**	**198,552**	**354,924**	**546,680**	**762,868**	**994,959**	**1,249,645**
Cash/share	$32.10	$2.30	$2.28	$3.21	$1.44	$1.19	$2.19	$4.27	$7.58	$11.56	$15.98	$20.64	$25.67
Book value/share	($723.44)	$0.21	$0.63	$2.02	$0.49	$0.31	$1.35	$3.35	$6.57	$10.46	$14.78	$19.33	$24.24
Long-term debt-to-capitalization ratio	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Return on equity	NA	NA	NA	NA	NA	NA	85.3%	62.7%	50.9%	38.8%	30.7%	24.9%	21.6%

Cash Flow Statement

($ in thousands except per share)

	2013	2014E	2015E	2016E	2017E	2018E	2019E	2020E	2021E	2022E	2023E	2024E	2025E
Operating Activities													
Net income/(loss)	(60,690)	(62,277)	(49,385)	(45,007)	(69,429)	(9,830)	52,643	97,283	156,335	191,716	216,145	232,045	254,639
Depreciation & amortization	54	56	57	59	61	63	64	66	68	70	73	75	77
Change in working capital	9,693	2,210	2,432	2,677	2,945	3,241	3,566	3,924	4,318	4,751	5,228	5,752	6,329
Other	5,926	32,210	(9,568)	(9,323)	(3,055)	3,241	3,566	3,924	4,318	4,751	5,228	5,752	6,329
Net cash from operations	**(45,017)**	**(27,801)**	**(56,464)**	**(51,595)**	**(69,477)**	**(3,285)**	**59,840**	**105,198**	**165,039**	**201,289**	**226,674**	**243,625**	**267,375**
Investing Activities													
Capital expenditures	(2)	-	-	-	-	-	-	-	-	-	-	-	-
Securities transactions	3,973	-	-	-	-	10,000	(30,000)	(100,000)	(160,000)	(200,000)	(220,000)	(250,000)	(250,000)
Other													
Net cash from investments	**3,971**	**-**	**-**	**-**	**-**	**10,000**	**(30,000)**	**(100,000)**	**(160,000)**	**(200,000)**	**(220,000)**	**(250,000)**	**(250,000)**
Financing Activities													
Issuance of common/preferred stock	42,870	52,175	68,000	94,000									
Repayments/proceeds of debt, net	(8,187)												
Other	13.00												
Net cash from financing	**34,696**	**52,175**	**68,000**	**94,000**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Net Change in Cash and Cash Equivalents	**(6,350)**	**24,374**	**11,536**	**42,405**	**(69,477)**	**6,715**	**29,840**	**5,198**	**5,039**	**1,289**	**6,674**	**(6,375)**	**17,375**
Cash and cash equivalents at beginning of period	18,653	12,303	36,677	48,213	90,618	21,141	27,856	57,696	62,894	67,933	69,223	75,897	69,522
Cash and cash equivalents at end of period	12,303	36,677	48,213	90,618	21,141	27,856	57,696	62,894	67,933	69,223	75,897	69,522	86,896

Source: Jefferies and company reports

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Company Description

Radius Health, Inc. is a biopharmaceutical company focused on developing therapies for osteoporosis and other endocrine diseases. The company's lead product is abaloparatide-SC (BA058), a novel synthetic peptide analog of parathyroid hormone-related protein (PTHrP), with topline data readout for ongoing Phase 3 for osteoporosis expected in December 2014. Additional pipeline products include a transdermal patch of abaloparatide, abaloparatide-TD; RAD1901, an oral selective estrogen receptor down-regulator/degrader (SERD) for the treatment of breast cancer brain metastases and vasomotor symptoms; and RAD140, a nonsteroidal selective androgen receptor modulator. Radius was founded in 2003 and is headquartered in Cambridge, Massachusetts.

Analyst Certification

I, Eun K. Yang, Ph.D., certify that all of the views expressed in this research report accurately reflect my personal views about the subject security(ies) and subject company(ies). I also certify that no part of my compensation was, is, or will be, directly or indirectly, related to the specific recommendations or views expressed in this research report.

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Company Specific Disclosures

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Buy - Describes stocks that we expect to provide a total return (price appreciation plus yield) of 15% or more within a 12-month period.

Hold - Describes stocks that we expect to provide a total return (price appreciation plus yield) of plus 15% or minus 10% within a 12-month period.

Underperform - Describes stocks that we expect to provide a total negative return (price appreciation plus yield) of 10% or more within a 12-month period.

The expected total return (price appreciation plus yield) for Buy rated stocks with an average stock price consistently below $10 is 20% or more within a 12-month period as these companies are typically more volatile than the overall stock market. For Hold rated stocks with an average stock price consistently below $10, the expected total return (price appreciation plus yield) is plus or minus 20% within a 12-month period. For Underperform rated stocks with an average stock price consistently below $10, the expected total return (price appreciation plus yield) is minus 20% within a 12-month period.

NR - The investment rating and price target have been temporarily suspended. Such suspensions are in compliance with applicable regulations and/or Jefferies policies.

CS - Coverage Suspended. Jefferies has suspended coverage of this company.

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Jefferies Franchise Picks include stock selections from among the best stock ideas from our equity analysts over a 12 month period. Stock selection is based on fundamental analysis and may take into account other factors such as analyst conviction, differentiated analysis, a favorable risk/reward ratio and investment themes that Jefferies analysts are recommending. Jefferies Franchise Picks will include only Buy rated stocks and the number can vary depending on analyst recommendations for inclusion. Stocks will be added as new opportunities arise and removed when the reason for inclusion changes, the stock has met its desired return, if it is no longer rated Buy and/or if it underperforms the S&P by 15% or more since inclusion.

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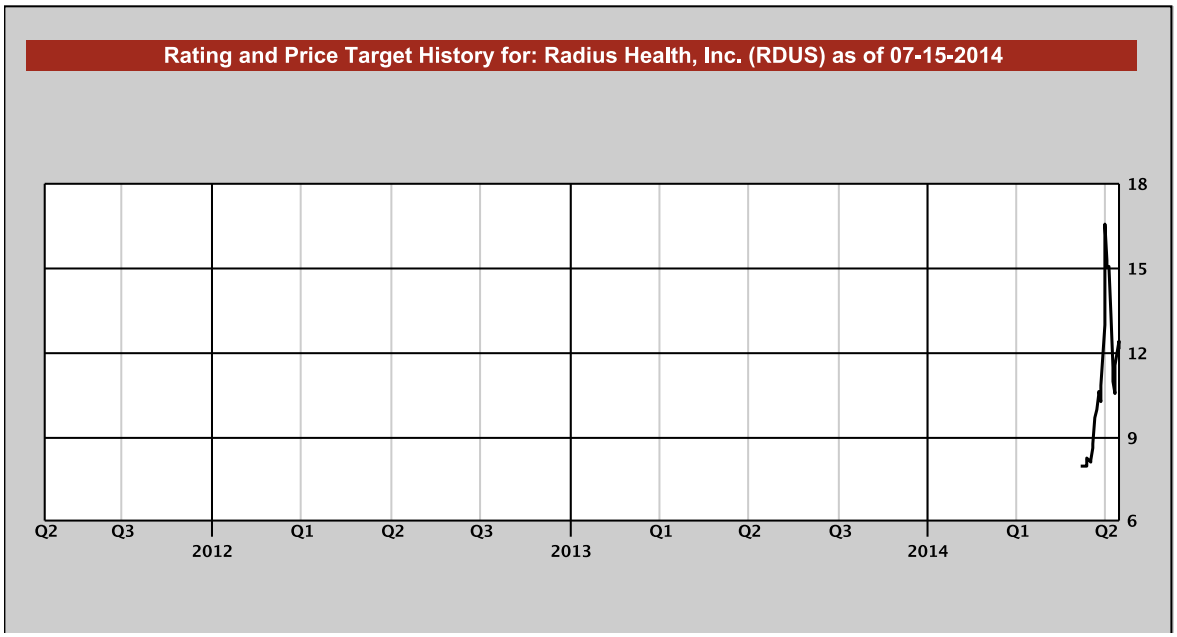
Other Companies Mentioned in This Report

- ACADIA Pharmaceuticals Inc. (ACAD: $20.77, BUY)
- Amgen, Inc. (AMGN: $116.86, BUY)
- Array BioPharma Inc. (ARRY: $4.05, BUY)
- Astellas Pharma (4503 JP: ¥1,380, BUY)
- AstraZeneca PLC (AZN LN: p4,384.50, HOLD)
- Bristol-Myers Squibb (BMY: $48.71, HOLD)
- Eisai (4523 JP: ¥4,272, UNDERPERFORM)
- Eli Lilly & Co. (LLY: $62.86, HOLD)
- GlaxoSmithKline Plc (GSK LN: p1,543.50, HOLD)
- Haemonetics Corporation (HAE: $34.98, BUY)
- Merck & Co. (MRK: $57.91, HOLD)
- Nektar Therapeutics (NKTR: $11.74, BUY)
- Neurocrine Biosciences (NBIX: $13.37, BUY)
- Novartis AG (NOVN VX: CHF80.70, BUY)
- NPS Pharmaceuticals, Inc. (NPSP: $28.02, HOLD)
- Roche (ROG VX: CHF268.00, BUY)
- Sanofi (SAN FP: €75.47, BUY)
- Teva Pharmaceutical Industries Ltd (TEVA: $54.40, BUY)
- The Medicines Company (MDCO: $26.55, HOLD)



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Distribution of Ratings

Rating	Count	Percent	IB Serv./Past 12 Mos. Count	IB Serv./Past 12 Mos. Percent
BUY	955	51.54%	248	25.97%
HOLD	750	40.47%	119	15.87%
UNDERPERFORM	148	7.99%	8	5.41%

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