RADIUS HEALTH, INC.

FORM 10-K
(Annual Report)

Filed 02/24/17 for the Period Ending 12/31/16

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UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549
FORM 10-K

(Mark One)

☒ **ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the fiscal year ended December 31, 2016

OR

☐ **TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the transition period from to

Commission file number: 001-35726

Radius Health, Inc.

(Exact name of registrant as specified in its charter)

Delaware	**80-0145732**
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification No.)
950 Winter Street Waltham, Massachusetts	**02451**
(Address of principal executive offices)	(Zip Code)

617-551-4000
(Registrant's telephone number, including area code)

Securities issued pursuant to Section 12(b) of the Act: **Common Stock**

Securities issued pursuant to Section 12(g) of the Act: **None**

Title of each class	**Name of each exchange on which registered**
Common Stock, par value $0.0001 per share	The NASDAQ Global Market

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes ☒ No ☐

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act. Yes ☐ No ☒

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes ☒ No ☐

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes ☒ No ☐

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K is not contained herein, and will not be contained, to the best of registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K. ☐

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or a smaller reporting company. See the definitions of "large accelerated filer," "accelerated filer" and "smaller reporting company" in Rule 12b-2 of the Exchange Act. (Check one):

Large accelerated filer ☒	Accelerated filer ☐	Non-accelerated filer ☐ (Do not check if a smaller reporting company)	Smaller reporting company ☐

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Act). Yes ☐ No ☒

The aggregate market value of the registrant's common stock, $0.0001 par value per share ("Common Stock"), held by non-affiliates of the registrant, based on the last sale price of the Common Stock at the close of business on June 30, 2016 was $1.0 billion. For the purpose of the foregoing calculation only, all directors and executive officers of the registrant are assumed to be affiliates of the registrant.

Number of shares outstanding of the registrant's common stock, par value $0.0001 per share, as of February 17, 2017 : 43,186,484

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the registrant's definitive Proxy Statement for its 2017 Annual Meeting of Stockholders are incorporated by reference into Part III of this Annual Report on Form 10-K.

Radius Health, Inc.
Annual Report on Form 10-K
For the Fiscal Year Ended December 31, 2016
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CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS

This report, including in the sections titled "Risk Factors," "Management's Discussion and Analysis of Financial Condition and Results of Operations" and "Business," contains, in addition to historical information, forward-looking statements. We may, in some cases, use words such as "project," "believe," "anticipate," "plan," "expect," "estimate," "intend," "continue," "should," "would," "could," "potentially," "will," "may" or similar words and expressions that convey uncertainty of future events or outcomes to identify these forward-looking statements. Forward-looking statements in this Annual Report on Form 10-K may include, among other things, statements about:

- *our ability to obtain U.S. and foreign regulatory approval for our product candidates and the ability of our investigational product candidates to meet existing or future regulatory standards;*
- *our expectations regarding federal, state and foreign regulatory requirements;*
- *the timing of and our ability to commercialize abaloparatide following regulatory approval;*
- *the progress of, timing of and amount of expenses associated with our research, development and commercialization activities;*
- *the success of our clinical studies for our investigational product candidates;*
- *the therapeutic benefits and effectiveness of our investigational product candidates;*
- *the safety profile and related adverse events of our investigational product candidates;*
- *our plans with respect to collaborations and licenses related to the development, manufacture or sale of our investigational product candidates;*
- *our expectations as to future financial performance, expense levels and liquidity sources;*
- *our ability to compete with other companies that are or may be developing or selling products that are competitive with our investigational product candidates;*
- *anticipated trends and challenges in our potential markets;*
- *our ability to attract, motivate, and retain key personnel; and*
- *other factors discussed elsewhere in this report.*

The outcome of the events described in these forward-looking statements is subject to known and unknown risks, uncertainties and other important factors that could cause actual results to differ materially from the results anticipated by these forward-looking statements. These important factors include our financial performance, our ability to attract and retain customers, our development activities and those other factors we discuss in Item 1A of this Annual Report on Form 10-K under the caption "Risk Factors." You should read these factors and the other cautionary statements made in this report as being applicable to all related forward-looking statements wherever they appear in this report. These risk factors are not exhaustive and other sections of this report may include additional factors which could adversely impact our business and financial performance.

PART I

ITEM 1. BUSINESS.

Unless otherwise provided in this report, all references in this report to "we," "us," "Radius," "our company," "our," or the "Company" refer to Radius Health, Inc. and our subsidiaries.

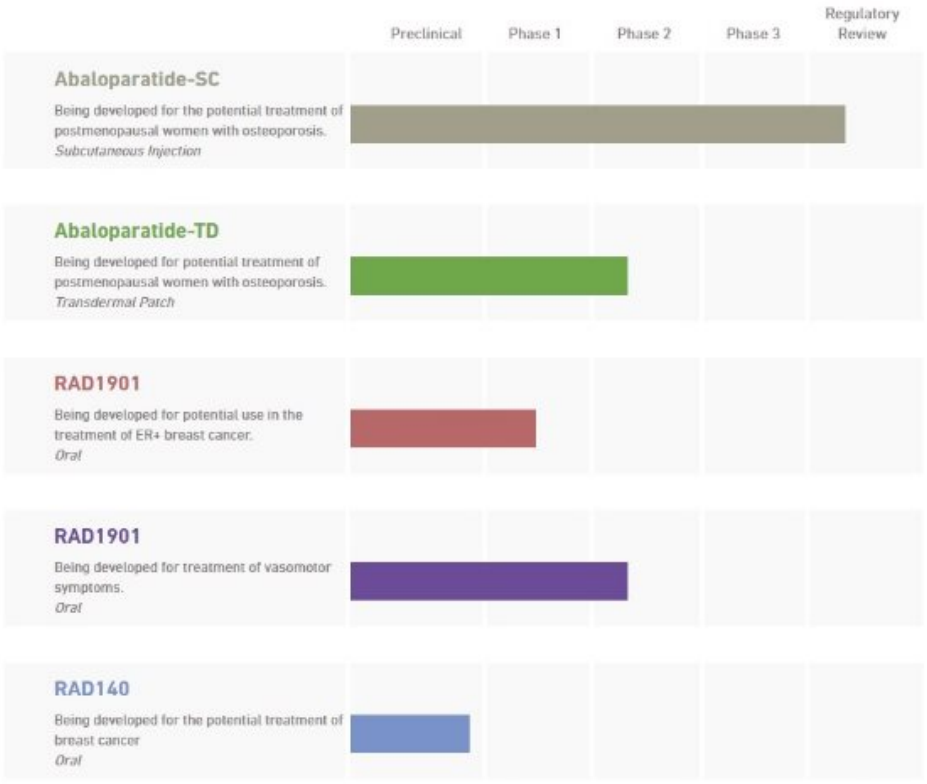
Overview

We are a science-driven biopharmaceutical company that is committed to developing innovative therapeutics in the areas of osteoporosis, oncology and endocrine diseases. Our lead investigational product candidate, abaloparatide for subcutaneous injection, or abaloparatide-SC, has completed Phase 3 development for potential use in the treatment of women with postmenopausal osteoporosis. Our New Drug Application, or NDA, for abaloparatide-SC is under regulatory review by the U.S. Food and Drug Administration, or FDA, with a Prescription Drug User Fee Act, or PDUFA, date of March 30, 2017. Our European Marketing Authorisation Application, or MAA, for abaloparatide-SC is under review by the Committee for Medicinal Products for Human Use, or CHMP, of the European Medicines Agency, or EMA. We intend to commercialize abaloparatide-SC in the United States ourselves and our experienced commercial leaders are rapidly expanding the breadth of our capabilities and sales organization with highly skilled and tenured individuals.

Our clinical pipeline also includes an investigational abaloparatide transdermal patch, or abaloparatide-TD, for potential use in the treatment of women with postmenopausal osteoporosis. We are focused on completing the manufacturing scale-up, production, and other activities required for the initiation of a pivotal bioequivalence study for abaloparatide-TD. In addition, we are evaluating our investigational product candidate, RAD1901, a selective estrogen receptor down-regulator/degrader, or SERD, for potential use in the treatment of hormone-driven and/or hormone-resistant breast cancer, as well as for potential use in the treatment of vasomotor symptoms in postmenopausal women. We plan to complete our ongoing Phase 1 studies of RAD1901 in advanced metastatic breast cancer and our ongoing Phase 2b study of RAD1901 in postmenopausal vasomotor symptoms. In the first half of 2017, we plan to engage with regulatory agencies to gain alignment on defining the next steps for our RAD1901 breast cancer program, which would include the design of a Phase 2 trial. In the first half of 2017, we also expect to complete and report results from our ongoing Phase 2b vasomotor trial. Our clinical pipeline also includes our internally developed investigational product candidate, RAD140, a non-steroidal selective androgen receptor modulator, or SARM, under investigation for potential use in the treatment of breast cancer. In December 2016, we submitted an investigational new drug application, or IND, to the FDA and expect to initiate a first-in-human Phase 1 study of RAD140 in women with hormone receptor positive breast cancer in 2017.

Our Investigational Product Candidates

The success of our business is primarily dependent upon our ability to discover, develop and commercialize our current and future product candidates. The following table identifies the investigational product candidates in our current product portfolio, their potential indication and stage of development. We hold worldwide commercialization rights for all of these product candidates, excluding abaloparatide-SC, for which we hold worldwide commercialization rights, except for Japan.



Abaloparatide

Abaloparatide is an investigational therapy for the potential treatment of women with postmenopausal osteoporosis who are at an increased risk for a fracture. Abaloparatide is a novel synthetic peptide analog that engages the parathyroid hormone receptor, or PTH1 receptor, and was selected for clinical development based on its potential for favorable bone building activity.

We believe that abaloparatide is the most advanced PTH analog in clinical development for the treatment of osteoporosis and that, subject to regulatory review and approval, it could have the potential to provide the following advantages over other current standard of care treatments for osteoporosis:

- improved efficacy—greater bone build at key non-vertebral sites like the hip and wrist with lower vertebral and non-vertebral fracture risk;
- earlier onset of building bone;
- shorter treatment duration;
- no refrigeration of multi-dose injection pen; and
- less hypercalcemia.

We are developing two formulations of abaloparatide: abaloparatide-SC, an injectable subcutaneous formulation of abaloparatide, and abaloparatide-TD, a potential line extension of abaloparatide-SC in the form of a convenient, short-wear-time, transdermal patch.

Abaloparatide-SC

Abaloparatide-SC has completed Phase 3 development for potential use as a daily self-administered injection. We hold worldwide commercialization rights to abaloparatide-SC, except for Japan. In December 2014, we announced positive 18-month top-line data from our Phase 3 ACTIVE clinical trial of abaloparatide-SC. These results were published in the Journal of the American Medical Association, or JAMA, in August 2016. In June 2015, we announced the positive top-line data from the first six months of our 24-month ACTIVExtend clinical trial of abaloparatide-SC and the 25-month combined fracture data from the ACTIVE and ACTIVExtend clinical trials. These data were published in the Mayo Clinic Proceedings in February 2017. The combined 25-month fracture data from our Phase 3 clinical trial program for abaloparatide-SC formed the basis of our regulatory submissions in the United States and Europe. In November 2015, we submitted an MAA to the EMA, which was validated and is currently undergoing active regulatory assessment by the CHMP. We anticipate that the CHMP may adopt an opinion regarding the MAA in 2017. In March 2016, we submitted an NDA to the FDA, which has been accepted for filing by the FDA with a PDUFA date of March 30, 2017. We intend to enter into one or more collaborations for the potential commercialization of abaloparatide-SC prior to commercial launch. Subject to a favorable regulatory outcome, we anticipate the first commercial sales of abaloparatide-SC to take place in 2017. We intend to commercialize abaloparatide-SC in the United States ourselves and our experienced commercial leaders are rapidly expanding the breadth of our capabilities and sales organization with highly skilled and tenured individuals. We expect to report the top-line results from our recently completed 24-month ACTIVExtend trial in the second quarter of 2017.

Our Capabilities-Organization and Experience

In our evolution towards becoming a fully integrated biopharmaceutical company, we are completing the build out of our sales and medical organizations. We are also continuing to strengthen our compliance program as part of our commitment to a strong culture of compliance and good corporate governance.

Our accomplished senior commercial leadership is currently completing the build out of our commercial organization, with capabilities across sales, marketing, reimbursement, and distribution, to support the potential commercialization of abaloparatide-SC in the United States. In 2016, we established our commercial organization with core teams organized around marketing, sales, market access and commercial operations functions.

Our market access and sales teams will engage and support external customers. Our market access organization has hired an account team comprised of individuals with significant account experience with the large third-party payers and trade accounts that represent a substantial majority of all potential target patients. We also assembled a marketing team of seasoned professionals with substantial specialty pharmaceutical marketing, communications, professional education, patient education and advocacy expertise. Our sales organization has hired over 20 capable sales leaders with prior osteoporosis, managerial, specialty launch and injectable therapy experience. These sales leaders will manage a sales organization that will be comprised of more than 200 clinical sales and integrated delivery network specialists. We intend to complete the hiring of our U.S. sales force in the first quarter of 2017. Finally, we forged a comprehensive commercial operations team to support launch requirements. Our commercial operations leaders have substantial specialty launch experience in establishing hub and specialty pharmacy distribution networks, analytics and forecasting, market research, sales and market operations, and sales training.

If approved, we intend to distribute abaloparatide-SC in the United States through a network of distributors and specialty pharmacies. Under this distribution model, both the distributors and specialty pharmacies would take physical delivery of product and the specialty pharmacies would dispense the product directly to patients.

Our experienced senior medical leadership is completing the build out of our medical organization to provide cross-functional support to both internal partners and external stakeholders by providing expert scientific knowledge, educational material and scientific training programs. This dedicated and skilled organization is comprised of 40 professionals with extensive clinical and scientific experience within academic medical centers, clinical medical practice, research institutions, and other pharmaceutical organizations.

Our medical team was organized with key functions, including medical affairs, pharmacovigilance, medical information, publications, and health economics outcomes research. Our medical affairs team includes physicians with relevant clinical and pharmaceutical experience in endocrinology and women’s health. The medical affairs team also includes scientists with extensive research experience in bone health who will provide clinical development support for current and future scientific research. Our team of medical sciences liaisons, or MSLs, will provide medical educational support to external stakeholders. The director and regional managers of our MSL team have comprehensive experience in the field of osteoporosis.

Under the leadership of our Chief Compliance Officer, we are continuing to strengthen our compliance program as part of our commitment to a strong culture of compliance and good corporate governance. We recently revised our Code of Conduct and Business Ethics, or Code of Conduct, which applies to all of our directors, officers and employees and have incorporated elements of the updated Code of Conduct into formal compliance trainings which are required to be completed by all employees. In addition, our management and other personnel have devoted a substantial amount of time to compliance initiatives, including establishing and maintaining effective disclosure and financial controls and corporate governance practices, as required by the Sarbanes-Oxley Act of 2002, as amended, and rules subsequently implemented by the Securities and Exchange Commission, or the SEC, and NASDAQ.

Abaloparatide-TD

We are also developing abaloparatide- TD, based on 3M's patented Microstructured Transdermal System technology for potential use as a short wear-time transdermal patch. We hold worldwide commercialization rights to the abaloparatide-TD technology. We are developing abaloparatide-TD toward future global regulatory submissions to build upon the potential success of our investigational product candidate, abaloparatide-SC, if approved. We commenced a human replicative clinical evaluation of the optimized abaloparatide-TD patch in December 2015, with the goal of achieving comparability to abaloparatide-SC. In September 2016, we presented results from this evaluation, which showed that the pharmacokinetic profile of an optimized abaloparatide-TD patch with respect to time to peak concentration, or Tmax, half-life, or T1/2, and area under the curve, or AUC, was successfully modified to improve comparability to abaloparatide-SC. The results of this clinical evaluation will inform the design of a pivotal bioequivalence study that will be initiated following completion of activities related to manufacturing scale-up, production, and other activities required for the initiation of that study.

RAD1901

RAD1901 is a selective estrogen receptor down-regulator/degrader, or SERD, that at high doses is being evaluated for potential use as an oral non-steroidal treatment for hormone-driven and/or hormone-resistant, breast cancer. We hold worldwide commercialization rights to RAD1901. RAD1901 is currently being investigated in postmenopausal women with advanced estrogen receptor positive, or ER-positive, and human epidermal growth factor receptor 2-negative, or HER2-negative breast cancer, the most common form of the disease. Studies completed to date indicate that the compound has the potential for use as a single agent, or in combination with other therapies for the treatment of breast cancer. We believe that, subject to successful development, regulatory review and approval, RAD1901 could have the potential to offer the following advantages compared to current standard of care treatments for ER-positive and HER2-negative breast cancer:

- ability to degrade estrogen receptor;
- favorable efficacy and tolerability profile;
- ability to effectively combine with other agents;
- treatment of hormone-resistant breast cancers; and
- once a day oral administration.

Phase 1 - Dose-Escalation Study

In December 2014, we commenced a Phase 1, multicenter, open-label, multiple-part, dose-escalation study of RAD1901 in postmenopausal women with ER-positive and HER2-negative advanced breast cancer in the United States to determine the recommended dose for a Phase 2 clinical trial and to make a preliminary evaluation of the potential anti-tumor effect of RAD1901. Part A of this Phase 1 study was designed to evaluate escalating doses of RAD1901. The Part B expansion cohort was initiated at 400 mg daily dosing in March 2016 to allow for an evaluation of additional safety, tolerability and preliminary efficacy. The patients enrolled in this study are heavily pretreated ER-positive, HER2-negative advanced breast cancer patients who have received a median of 3 prior lines of therapy including fulvestrant and CDK4/6 inhibitors, and more than 50% of the patients had ESR1 mutations.

In December 2016, we reported positive results from this ongoing Phase 1 dose-escalation and expansion study. These results show that RAD1901 was well-tolerated with the most commonly reported adverse events being low grade nausea and dyspepsia. The Part C tablet dosage form cohort was initiated thereafter and enrollment was completed in November 2016.

Phase 1 - FES-PET Study

In December 2015, we commenced a Phase 1 18-F fluoroestradiol positron emission tomography, or FES-PET, study in patients with metastatic breast cancer in the European Union which includes the use of FES-PET imaging to assess estrogen

receptor occupancy in tumor lesions following RAD1901 treatment. We continue to enroll patients in the EU Phase I FES-PET study.

In December 2016, we reported positive results from the ongoing Phase 1 FES-PET study. The first three enrolled patients dosed at the 400-mg cohort had a tumor FES-PET signal intensity reduction ranging from 79% to 91% at day 14 compared to baseline. The most commonly reported adverse events reported to date have been grade 1 and 2 nausea and dyspepsia. This study will enroll 5 additional patients in the 400 mg daily oral cohort, followed by 8 patients in the 200 mg daily oral cohort.

Phase 1 - Recent Progress

Across both ongoing Phase 1 studies, 3 out of the 21 patients with measurable disease according to RECIST criteria had confirmed partial responses by RECIST criteria as of the data cut-off date of October 7, 2016. The RECIST (Response Evaluation Criteria In Solid Tumors) criteria is a set of rules published by NCI, the National Cancer Institute of the United States, and other international research organizations that seeks to define when cancer patients improve, stay the same or worsen during treatments. Of all patients dosed at 400 mg, 10 patients remained on study drug as of cut-off date, including 7 patients in the ongoing U.S. Phase 1 dose-escalation and expansion study and 3 patients in the ongoing EU Phase 1 FES-PET study. As of October 7, 2016, 14 patients in the U.S. Phase 1 dose-escalation and expansion study remained on study drug for greater than or equal to 4 months and 5 patients remained on study drug for greater than or equal to 6 months. All 3 patients in the EU Phase 1 FES-PET study remained on study drug for greater than or equal to 4 months and 1 patient remained on study drug for more than 6 months.

To date, no dose limiting toxicities, or DLTs, have been reported across any of the studies in the RAD1901 program.

We plan to complete both of our ongoing RAD1901 Phase 1 breast cancer trials. In the first half of 2017, we intend to engage with regulatory agencies to gain alignment on defining the next steps for the program, which would include the design of a Phase 2 trial.

Collaborations

In July 2015, we announced that early but promising preclinical data showed that our investigational drug RAD1901, in combination with Pfizer's palbociclib, a cyclin-dependent kinase, or CDK 4/6 inhibitor, or Novartis' everolimus, a mTOR inhibitor, was effective in shrinking tumors. In preclinical patient-derived xenograft breast cancer models with either wild type or mutant ESR1, treatment with RAD1901 resulted in marked tumor growth inhibition, and the combination of RAD1901 with either agent, palbociclib or everolimus, showed anti-tumor activity that was significantly greater than either agent alone. We believe that these preclinical data suggest that RAD1901 has the potential to overcome endocrine resistance, is well-tolerated, and has a profile that is well suited for use in combination therapy.

In July 2016, we entered into a preclinical collaboration with Takeda Pharmaceutical Company Limited to evaluate the combination of RAD1901 with Takeda's investigational drug TAK-228, an oral mTORC 1/2 inhibitor in Phase 2b development for the treatment of breast, endometrial and renal cancer, with the goal of potentially exploring such combination in a clinical study. We and Takeda have each agreed to contribute resources and supply compound material necessary for studies to be conducted under the collaboration and will share third party out-of-pocket research and development expenses. Activities under this collaboration are ongoing. Upon completion, both parties will agree upon the appropriate communication of the results.

In January 2016, we entered into a worldwide clinical collaboration with Novartis Pharmaceuticals to evaluate the safety and efficacy of combining RAD1901 with Novartis' investigational agent LEE011 (ribociclib), a CDK 4/6 inhibitor, and BYL719 (alpelisib), an investigational phosphoinositide 3-kinase inhibitor.

Phase 2b - Vasomotor Symptoms Study

RAD1901 is also being evaluated at low doses for the potential relief of the frequency and severity of moderate to severe hot flashes in postmenopausal women with vasomotor symptoms. We expect to report results from our Phase 2b clinical study of RAD1901 for the potential treatment of postmenopausal vasomotor symptoms in the first half of 2017.

RAD140

RAD140 is a nonsteroidal selective androgen receptor modulator, or SARM. The androgen receptor, or AR, is highly expressed in many ER-positive, ER-negative, and triple-negative receptor breast cancers. Due to its receptor and tissue selectivity, potent activity, oral bioavailability, and long half-life, we believe RAD140 could have clinical potential in the treatment of breast cancer. We hold worldwide commercialization rights to RAD140, which resulted from an internal discovery program.

In July 2016, we reported that RAD140 in preclinical xenograft models of breast cancer demonstrated potent tumor growth inhibition when administered alone or in combinations with CDK4/6 inhibitors. It is estimated that 77% of breast cancers show expression of the androgen receptor. Our data suggest that RAD140 activity at the androgen receptor stimulates up-regulation of a tumor suppression pathway.

We submitted an IND to the FDA for RAD140 in December 2016. In 2017, we plan to initiate a first-in-human Phase 1 study of RAD140 in women with hormone receptor positive breast cancer.

Our Strategy

Our goal is to become a leading provider of therapeutics for osteoporosis, cancer and serious endocrine diseases. To achieve this goal, we plan to:

- **Obtain regulatory approval of abaloparatide-SC and establish sales and marketing capabilities to commercialize abaloparatide-SC in the United States.** We have completed our Phase 3 clinical trial of abaloparatide-SC, or the ACTIVE trial, and recently completed our 24-month extension trial of abaloparatide-SC, or the ACTIVExtend trial, for potential use in the reduction of fractures in postmenopausal osteoporosis. Our NDA for abaloparatide-SC in the United States is undergoing regulatory review by the FDA with a PDUFA date of March 30, 2017 and our MAA in the European Union for abaloparatide-SC is under review by the CHMP with an opinion anticipated in 2017. We are building a commercial organization to support the potential commercialization of abaloparatide-SC in the U.S. We intend to complete the hiring of our U.S. sales force in the first quarter of 2017. We expect to report the top-line results from our recently completed 24-month ACTIVExtend trial in the second quarter of 2017.

- **Conduct additional clinical research towards additional indications for abaloparatide.** We are continuing to evaluate other underserved osteoporosis patient populations that might benefit from abaloparatide therapy. We may engage in additional clinical research with the goal of achieving additional labeling to treat these populations.

- **Selectively pursue partnerships or collaborations to develop and/or commercialize our product candidates.** We intend to enter into one or more partnerships or collaborations for the development or commercialization of our product candidates. We intend to enter into one or more collaborations for the potential commercialization of abaloparatide-SC prior to commercial launch.

- **Extend the lifecycle of abaloparatide through the continued development of abaloparatide-TD.** We are developing abaloparatide-TD as a short-wear-time transdermal patch and we anticipate, pending successful development and a favorable regulatory outcome, commercial launch approximately two to three years after the approval and first commercial sale of abaloparatide-SC, if approved. We are currently working on the manufacturing scale-up, production, and other activities required for the initiation of a pivotal bioequivalence study. If our clinical trials of abaloparatide-SC and abaloparatide-TD are successful, we expect to seek marketing approval of abaloparatide-TD as a line extension of abaloparatide-SC.

- **Advance the development of RAD1901 for the treatment of breast cancer.** During 2016, we continued to enroll patients in our ongoing Phase 1 studies of RAD1901 in patients with metastatic breast cancer in the United States and the European Union. Preliminary results from these studies suggest that RAD1901 may have a favorable safety and tolerability profile and potential anti-tumor effect. We plan to complete both of our ongoing RAD1901 Phase 1 breast cancer trials. In the first half of 2017, we intend to engage with regulatory agencies to gain alignment on defining the next steps for the program, which would include the design of a Phase 2 trial.

- **Advance the development of RAD140 for the treatment of breast cancer.** We submitted an IND to the FDA for RAD140 in December 2016. In 2017, we plan to initiate a first-in-human Phase 1 study of RAD140 in women with hormone receptor positive breast cancer

- **Continue to expand our product portfolio.** We plan to leverage our drug development expertise to discover and develop additional investigational product candidates focused on serious endocrine-related diseases and conditions. We may also consider opportunistically expanding our product portfolio through in-licensing, acquisitions or partnerships.

Our Opportunity

Osteoporosis

Osteoporosis is a disease characterized by low bone mass and structural deterioration of bone tissue, which leads to greater fragility and an increase in fracture risk. All bones become more fragile and susceptible to fracture as the disease

progresses. People tend to be unaware that their bones are getting weaker, and a person with osteoporosis can fracture a bone from even a minor fall. The debilitating effects of osteoporosis have substantial costs. Loss of mobility, admission to nursing homes and dependence on caregivers are all common consequences of osteoporosis. The prevalence of osteoporosis is growing and, per the National Osteoporosis Foundation, or NOF, is significantly under-recognized and under-treated in the population. While the aging of the population is a primary driver of an increase in cases, osteoporosis is also increasing from the use of drugs that induce bone loss, such as chronic use of glucocorticoids and aromatase inhibitors that are increasingly used for breast cancer and hormone therapies used for prostate cancer.

The NOF has estimated that 10 million people in the United States, composed of eight million women and two million men, already have osteoporosis, and another approximately 44 million have low bone mass placing them at increased risk for osteoporosis. In addition, the NOF has estimated that osteoporosis is responsible for more than two million fractures in the United States each year resulting in an estimated $19 billion in costs annually. The NOF expects that the number of fractures in the United States due to osteoporosis will rise to three million by 2025, resulting in an estimated $25.3 billion in costs each year. Worldwide, osteoporosis affects an estimated 200 million women according to the International Osteoporosis Foundation, or IOF, and causes more than 8.9 million fractures annually, which is equivalent to an osteoporotic fracture occurring approximately every three seconds. The IOF has estimated that 1.6 million hip fractures occur worldwide each year, and by 2050 this number could reach between 4.5 million and 6.3 million. The IOF estimates that in Europe alone, the annual cost of osteoporotic fractures could surpass €76 billion by 2050.

In 2016, total sales of branded osteoporosis drugs approximated $7.0 billion, worldwide, of which more than $4.0 billion was attributable to injectable therapies. There are two main types of osteoporosis drugs currently available in the United States, anti-resorptive agents and anabolic agents. Anti-resorptive agents act to prevent further bone loss by inhibiting the breakdown of bone, whereas anabolic agents stimulate bone formation to build new bone.

We believe there is a large unmet need in the market for osteoporosis treatment because existing therapies have been reported to have shortcomings in efficacy, tolerability and convenience. For example, one current standard of care, bisphosphonates, which are anti-resorptive agents, have been associated with infrequent but serious adverse events, such as osteonecrosis of the jaw and atypical fractures, especially of long bones. These side effects, although uncommon, reportedly have created increasing concern with physicians and patients. We believe many physicians are seeking alternatives to bisphosphonates. Forteo/Forsteo® (teriparatide) marketed by Eli Lilly and Company, or Lilly, and Prolia® (denosumab) marketed by Amgen Inc., or Amgen, are the two primary alternatives to bisphosphonates that are approved for the treatment of osteoporosis. Prolia has also been associated with infrequent but serious adverse events, such as osteonecrosis of the jaw and atypical fractures. In 2016, Forteo/Forsteo had reported worldwide sales of approximately $1.5 billion, $0.8 billion in the United States and $0.7 billion outside of the United States, and Prolia had reported sales of approximately $1.6 billion, $1.0 billion in the United States and $0.6 billion outside of the United States. Forteo, a 34 amino acid recombinant peptide of human parathyroid hormone, is the only anabolic drug approved in the United States for the treatment of osteoporosis.

We believe there is a significant opportunity for anabolic agents that have the potential to provide early, extensive and durable effects on both Bone Mineral Density, or BMD, and fracture risk compared to other approve therapies, with the potential added advantages of convenience and safety. With the potential addition of new guidelines, expanding research, increased diagnosis effort, greater awareness of the long-term risk associated with osteoporotic fracture, and new, more effective therapies we believe osteoporosis treatment will expand and likewise our potential commercial opportunity.

Our Capabilities—Organization and Experience

In our evolution towards becoming a fully integrated biopharmaceutical company, we are completing the build out of our sales and medical organizations. We are also continuing to strengthen our compliance program as part of our commitment to a strong culture of compliance and good corporate governance.

Our accomplished senior commercial leadership is currently completing the build out of our commercial organization, with capabilities across sales, marketing, reimbursement, and distribution, to support the potential commercialization of abaloparatide-SC in the United States. In 2016, we established our commercial organization with core teams organized around marketing, sales, market access and commercial operations functions.

Our market access and sales teams will engage and support external customers. Our market access organization has hired an account team comprised of individuals with significant account experience with the large third-party payers and trade accounts that represent a substantial majority of all potential target patients. We also assembled a marketing team of seasoned professionals with substantial specialty pharmaceutical marketing, communications, professional education, patient education and advocacy expertise. Our sales organization has hired over 20 capable sales leaders with prior osteoporosis, managerial, specialty launch and injectable therapy experience. These sales leaders will manage a sales organization that will be comprised of more than 200 clinical sales and integrated delivery network specialists. We intend to complete the hiring of our U.S. sales

force in the first quarter of 2017. Finally, we forged a comprehensive commercial operations team to support launch requirements. Our commercial operations leaders have substantial specialty launch experience in establishing hub and specialty pharmacy distribution networks, analytics and forecasting, market research, sales and market operations, and sales training.

If approved, we intend to distribute abaloparatide-SC in the United States through a network of distributors and specialty pharmacies. Under this distribution model, both the distributors and specialty pharmacies would take physical delivery of product and the specialty pharmacies would dispense the product directly to patients.

Our experienced senior medical leadership is completing the build out of our medical organization to provide cross-functional support to both internal partners and external stakeholders by providing expert scientific knowledge, educational material and scientific training programs. This dedicated and skilled organization is comprised of 40 professionals with extensive clinical and scientific experience within academic medical centers, clinical medical practice, research institutions, and other pharmaceutical organizations.

Our medical team was organized with key functions, including medical affairs, pharmacovigilance, medical information, publications, and health economics outcomes research. Our medical affairs team includes physicians with relevant clinical and pharmaceutical experience in endocrinology and women's health. The medical affairs team also includes scientists with extensive research experience in bone health who will provide clinical development support for current and future scientific research. Our team of medical sciences liaisons, or MSLs, will provide medical educational support to external stakeholders. The director and regional managers of our MSL team have comprehensive experience in the field of osteoporosis.

Under the leadership of our Chief Compliance Officer, we are continuing to strengthen our compliance program as part of our commitment to a strong culture of compliance and good corporate governance. We recently revised our Code of Conduct and Business Ethics, or Code of Conduct, which applies to all of our directors, officers and employees and have incorporated elements of the updated Code of Conduct into formal compliance trainings which are required to be completed by all employees. In addition, our management and other personnel have devoted a substantial amount of time to compliance initiatives, including establishing and maintaining effective disclosure and financial controls and corporate governance practices, as required by the Sarbanes-Oxley Act of 2002, as amended, and rules subsequently implemented by the Securities and Exchange Commission, or the SEC, and NASDAQ.

Our Investigational Drug—Abaloparatide

Abaloparatide is a novel synthetic peptide analog that engages the PTH1 receptor and was selected for clinical development based on its potential for favorable bone building activity. Parathyroid hormone, or PTH, analogs (like Forteo teriparatide) and parathyroid hormone-related protein, or PTHrP, represent a family of proteins and peptides that share regions of partial or complete amino acid sequence similarity. The first 34 amino acids of PTH analogs contain the binding site for engaging the PTH1 receptor. Abaloparatide is a unique 34 amino acid PTH analog that has 41% homology (i.e. amino acid similarity) to Forteo (teriparatide) and has 76% homology to the first 34 amino acids of PTHrP. Abaloparatide is manufactured using organic chemistry techniques to create the 34 amino acid peptide.

Abaloparatide was designed to have a unique mechanism of action with the goal of stimulating enhanced bone building activity including bone formation, increasing bone mineral density, restoring bone microarchitecture and augmenting bone strength. We believe that abaloparatide is the most advanced PTH analog in clinical development for the treatment of osteoporosis and that, subject to regulatory review and approval, it could have the potential to provide the following advantages over other current standard of care treatments for osteoporosis:

- improved efficacy—greater bone build at hip and spine with lower vertebral and non-vertebral fracture risk;
- earlier onset of building bone;
- shorter treatment duration;
- no refrigeration of multi-dose injection pen; and
- less hypercalcemia.

We are developing two formulations of abaloparatide: abaloparatide-SC, an injectable subcutaneous formulation of abaloparatide, and abaloparatide-TD, a potential expansion of our abaloparatide-SC franchise in the form of a convenient, short-wear-time, transdermal patch. We acquired and maintain exclusive worldwide rights, excluding development and commercialization rights for Japan, to certain patents, data and technical information related to abaloparatide through a license agreement with an affiliate of Ipsen Pharma SAS, or Ipsen. We have worldwide commercialization rights for abaloparatide-TD, including in Japan.

We previously announced positive 18-month top-line data from our Phase 3 ACTIVE clinical trial and positive top-line data from the first six months of our recently completed 24-month ACTIVExtend clinical trial, which included a one-month transition period for patients in the abaloparatide-SC and placebo groups from the ACTIVE clinical trial. The combined 25-month fracture data from our Phase 3 clinical trial program for abaloparatide-SC formed the basis of our regulatory submissions in the United States and Europe. In November 2015, we submitted an MAA in Europe, which was validated in December 2015, and we submitted an NDA to the FDA, which was accepted with a PDUFA date of March 30, 2017. We intend to lead the commercialization of abaloparatide-SC in the United States and are currently completing the build out of our commercialization capabilities and organization with highly experienced individuals. We expect to report the top-line results from our recently completed 24-month ACTIVExtend trial in the second quarter of 2017.

We continue to report progress on the development of an optimized, short-wear-time transdermal patch that may be capable of demonstrating comparability to abaloparatide-SC injection. We commenced the clinical evaluation of the optimized abaloparatide-TD patch at the end of 2015, with the goal of achieving comparability to abaloparatide-SC. In September 2016, we presented results from this evaluation, which showed that the pharmacokinetic profile of an optimized abaloparatide-TD patch with respect to Tmax, T1/2, and AUC, was successfully modified so as to improve comparability to abaloparatide-SC. The results of this clinical evaluation will inform the design of a pivotal bioequivalence study that will be initiated following completion of activities related to manufacturing scale-up, production, and other activities required for the initiation of that study. If our clinical trials of abaloparatide-SC and abaloparatide-TD are successful, we expect to seek marketing approval of abaloparatide-TD as a potential expansion of our abaloparatide-SC franchise. We believe abaloparatide-TD could be submitted for regulatory approval based upon a demonstration of bioequivalence to abaloparatide-SC. Upon completion of clinical evaluation of the optimized abaloparatide-TD patch, we will meet with regulatory agencies to discuss the appropriate regulatory path for the abaloparatide-TD program. Any approval of abaloparatide-TD, and the timing of any such approval, is dependent upon the approval of abaloparatide-SC.

Abaloparatide-SC Phase 3 Clinical Trial

In 2014, we completed a multicenter, multinational, double-blind, placebo-controlled Phase 3 clinical trial of abaloparatide-SC, or the ACTIVE trial, in which 2,463 postmenopausal women aged 49 to 86 received daily doses of one of the following: 80 µg of abaloparatide, a matching placebo, or the approved dose of 20 µg of Forteo for 18 months.

On February 15, 2012, we received a letter from the FDA stating that, after internal consideration, it believes that a minimum of 24-month fracture data are necessary for approval of new products for the treatment of postmenopausal osteoporosis. We subsequently met with the FDA on March 21, 2012 to discuss satisfying the 24-month data request while preserving the 18-month primary endpoint. Based upon our discussion with the FDA, we believe that the 18-month primary endpoint will be acceptable, provided that our NDA includes the 24-month fracture data derived from a 6-month extension of the abaloparatide 80 µg and placebo groups in our Phase 3 study during which patients received an approved alendronate (generic Fosamax) therapy for osteoporosis management. Accordingly, patients from the abaloparatide-SC and placebo groups from our ACTIVE trial were eligible to continue in a 24-month extension study, or the ACTIVExtend trial, in which they received 70 mg once weekly of an approved alendronate therapy for osteoporosis management following completion of treatment in the ACTIVE trial and a one-month transition period during which they received no study treatments. We submitted our NDA for abaloparatide-SC with 25-month fracture data.

The ACTIVE trial was designed to evaluate as the primary endpoint whether abaloparatide-SC is superior to placebo for prevention of vertebral fracture. The top-line results of the 18-month ACTIVE trial showed that abaloparatide-SC met the primary endpoint with a statistically significant 86% reduction in new vertebral fractures versus placebo, and Forteo met the same endpoint with a statistically significant 80% reduction. On the secondary endpoints, as compared to placebo, abaloparatide achieved a statistically significant reduction of 43% in non-vertebral fracture; a statistically significant reduction of 43% in the clinical fracture; and a significant difference in the time to first incident of non-vertebral fracture and clinical fracture.

An exploratory analysis of the ACTIVE trial showed that, for major osteoporotic fractures, there was a statistically significant 70% reduction in major osteoporotic fractures for the abaloparatide treatment group versus placebo, and a statistically significant 55% reduction in major osteoporotic fractures for the abaloparatide-SC treatment group as compared to Forteo over the 18-month period.

The results from the first six months of the ACTIVExtend study showed that the group previously treated with abaloparatide-SC had no new vertebral fractures during the first six months of receiving alendronate. From the start of the ACTIVE trial, this group showed a statistically significant 87% reduction in new vertebral fractures, a 52% reduction in non-vertebral fractures, a 45% reduction in clinical fractures and a 58% reduction in major osteoporotic fractures over the 24-month period, as compared to placebo. The results also suggested that abaloparatide was generally safe and well tolerated when administered once daily, with reported adverse events similar between abaloparatide, placebo and Forteo groups.

Abaloparatide-TD Phase 2 Clinical Trial

In 2013, we completed a randomized, double-blind, placebo-controlled, Phase 2 clinical trial of abaloparatide administered via a coated transdermal microarray delivery system, which results in pulsatile delivery of abaloparatide, in healthy postmenopausal women with osteoporosis. This study was conducted in nine centers in the United States, Denmark, Poland and Estonia. The primary objective of this study was to determine the clinical safety and efficacy of a pulsatile abaloparatide-TD patch as assessed by changes in BMD when compared to a transdermal placebo and abaloparatide-SC. The results showed that for each abaloparatide-TD dose there was a statistically significant mean percent increase from baseline in BMD at the lumbar spine, as compared to placebo. For the 100 µg and 150 µg abaloparatide-TD doses, there was also a statistically significant mean percent increase from baseline in BMD at the hip, as compared to placebo. The highest abaloparatide-TD dose of 150 µ g produced increases in BMD from baseline in the lumbar spine and total hip of +2.9% and +1.5%, respectively, compared to changes in the placebo group of +0.04% and –0.02%, respectively. In addition, there was a consistent dose effect seen with increasing doses of abaloparatide-TD, with a statistically significant dosing trend seen for changes in both spine and total hip BMD. Further, the overall tolerability and safety profile was acceptable; there were no clinically significant effects of anti-abaloparatide antibodies; and patient ratings of patch adhesion and local skin response to the transdermal patch technology were also acceptable.

Breast Cancer

According to the World Health Organization, breast cancer is the second most common cancer in the world and the most prevalent cancer in women, accounting for 16% of all female cancers. The major cause of death from breast cancer is metastases, most commonly to the bone, liver, lung and brain. Approximately 30% of early-stage breast cancer patients develop metastatic disease, and of those patients 90% relapse during the course of their treatment. About 5% of breast cancer patients have distant metastases at the time of diagnosis, and these patients have a five-year survival rate of only 25%, compared with a greater than 99% five-year survival rate for patients with only local disease at diagnosis. Importantly, even patients without metastases at diagnosis are at risk for developing metastases over time.

Approximately 70% of breast cancers express the ER and depend on estrogen signaling for growth and survival. Patients with ER-positive breast cancers are typically treated with endocrine therapies. There are three main classes of therapies for ER-positive tumors available: aromatase inhibitors, or AIs; selective estrogen receptor modulators, or SERMs; and selective estrogen receptor degraders, or SERDs. AIs, which block the generation of estrogen, and SERMs, which selectively inhibit an ER's ability to bind estrogen, both block ER-dependent signaling but leave functional ERs present on breast cancer cells. For this reason, although AIs and SERMs are effective treatments for some breast cancers, some patients acquire resistance to them by developing the ability to signal through the ER in a ligand-independent manner. In contrast, SERDs are a class of endocrine therapies that directly induce ER degradation. Therefore, SERDs should have the potential to treat ER-dependent tumors without allowing ligand-independent resistance to develop, and to act on AI- and SERM-resistant ER-positive tumors.

Currently only one SERD, fulvestrant, is approved for the treatment of ER-positive metastatic breast cancer. We believe a significant opportunity exists for new oral therapies that do not allow ligand-independent resistance to develop and can more effectively treat ER-positive breast cancer.

Our Investigational Drug—RAD1901

RAD1901 is a SERD that at high doses has potential for use as a daily oral non-steroidal treatment for hormone-driven and/or hormone-resistant, breast cancer. RAD1901 is currently being investigated in postmenopausal women with ER-positive, HER2-negative advanced breast cancer, the most common form of the disease. The compound has the potential for use as a single agent or in combination with other therapies to overcome endocrine resistance in breast cancer. RAD1901 selectively binds to and degrades the estrogen receptor. In preclinical models of ER-positive breast cancer, RAD1901 has shown potent anti-tumor activity and complete degradation of the ER and progesterone receptor, an ER-regulated gene. RAD1901 has shown good tissue selectivity in preclinical models and does not appear to stimulate the uterine endometrium, while it appears to protect against bone loss in an ovariectomy-induced osteopenia rat model. When RAD1901 was used in combination with other approved breast cancer agents such as everolimus, an mTOR inhibitor, or palobciclib, a CDK 4/6 inhibitor, greater tumor shrinkage in patient-derived xenograft (PDx) animal models was achieved than with the agents alone. In addition, RAD1901 has been shown to effectively inhibit tumor growth in PDx animal models that harbor ER mutations, a potential mechanism of endocrine therapy resistance. In our phase 1 MTD healthy volunteer study, FES-PET imaging was used to assess how much RAD1901 has engaged in the ER, RAD1901 showed suppression of the FES-PET signal to background levels after six days of dosing in a subset of patients.

Preclinical studies with RAD1901 have established the PK profile, including demonstration of good oral bioavailability. We believe that, subject to successful development, regulatory review and approval, RAD1901 could have the potential to offer the following advantages over other current standard of care treatments for ER-positive breast cancer:

- ability to degrade estrogen receptor;
- favorable efficacy and tolerability profile;
- ability to effectively combine with other agents;
- treatment of hormone-resistant breast cancers; and
- once a day oral administration.

We exclusively licensed the worldwide rights to RAD1901 from Eisai Co. Ltd., or Eisai.

Phase 1 Studie s—Breast Cancer

In December 2014, we commenced a Phase 1, multicenter, open-label, multiple-part, dose-escalation study of RAD1901 in postmenopausal women with ER-positive and HER2-negative advanced breast cancer in the United States to determine the recommended dose for a Phase 2 clinical trial and to make a preliminary evaluation of the potential anti-tumor effect of RAD1901. Part A of this Phase 1 study is designed to evaluate escalating doses of RAD1901 (n=13). The Part B expansion cohort (n=20) was initiated at 400 mg daily dosing in March 2016 to allow for an evaluation of additional safety, tolerability and preliminary efficacy. The patients enrolled in this study are heavily pretreated ER-positive, HER2-negative advanced breast cancer patients who have received a median of 3 prior lines of therapy. In December 2016, we reported positive results from the ongoing U.S. Phase 1 dose-escalation and expansion study that includes 2 patients with confirmed partial responses by RECIST criteria out of 19 patients with RECIST measurable disease. At the data cut-off date of October 7, 2016, 14 patients had remained on study drug for greater than or equal to 4 months, 5 patients for greater than or equal to 6 months, and 7 patients were continuing on study drug as of the cut-off date. The results suggested that RAD1901 was well-tolerated with the most commonly reported adverse events being low grade nausea and dyspepsia. A Part C tablet dosage form cohort (n=14) was initiated and enrollment completed in 2016.

In December 2015, we commenced a Phase 1 FES-PET study in patients with metastatic breast cancer in the European Union which includes the use of FES-PET imaging to assess estrogen receptor occupancy in tumor lesions following RAD1901 treatment. We continue to enroll patients in the EU Phase I FES-PET study. The first three enrolled patients dosed at the 400-mg cohort had a tumor FES-PET signal intensity reduction ranging from 79% to 91% at day 14 compared to baseline. In December 2016, we reported positive results from the ongoing EU Phase 1 FES-PET study including 1 patient with a confirmed partial response by RECIST criteria with all three enrolled patients remained on study drug with mean duration of treatment of 5.64 cycles as of the October 7, 2016 data cut-off date. Adverse events reported to date have been grade 1 and 2 and manageable. This study will enroll 5 additional patients in the 400-mg daily oral cohort followed by 8 patients in the 200-mg daily oral cohort.

Across both ongoing Phase 1 studies, 3 out of the 21 patients with RECIST measurable disease had confirmed partial responses by RECIST criteria as of the data cut-off date of October 7, 2016, including 2 out of 19 patients in the ongoing U.S. Phase 1 dose-escalation and expansion study and 1 out of 2 patients in the ongoing EU Phase 1 FES-PET study. Of all patients dosed at 400-mg in both Phase 1 studies, 10 patients remained on study drug as of the data cut-off date, including 7 patients in the ongoing U.S. Phase 1 dose-escalation and expansion study and 3 patients in the ongoing EU Phase 1 FES-PET study. As of October 7, 2016, 14 patients in the U.S. Phase 1 dose-escalation and expansion study remained on study drug for greater than or equal to 4 months and 5 patients remained on study drug for greater than or equal to 6 months. All 3 patients in the EU Phase 1 FES-PET study remained on study drug for greater than or equal to 4 months and 1 patient remained on study drug for more than 6 months.

In 2017, we plan to complete both of our ongoing RAD1901 Phase 1 breast cancer trials. In the first half of 2017, we intend to engage with regulatory agencies to gain alignment on defining the next steps for the program, which would include the design of a Phase 2 trial.

In July 2016, we entered into a preclinical collaboration with Takeda Pharmaceutical Company Limited to evaluate the combination of RAD1901 with Takeda's investigational drug TAK-228, an oral mTORC 1/2 inhibitor in Phase 2b development for the treatment of breast, endometrial and renal cancer, with the goal of potentially exploring such combination in a clinical study. We and Takeda have each agreed to contribute resources and supply compound material necessary for studies to be conducted under the collaboration and will share third party out-of-pocket research and development expenses. Activities under this collaboration are ongoing. Upon completion, both parties will agree upon the appropriate communication of the results.

In January 2016, we entered into a worldwide clinical collaboration with Novartis Pharmaceuticals to evaluate the safety and efficacy of combining RAD1901, with investigational agent LEE011 (ribociclib), a CDK 4/6 inhibitor and BYL719 (alpelisib), an investigational phosphoinositide 3-kinase inhibitor.

Preclinical Pharmacology of RAD1901

RAD1901 has been shown to bind with good selectivity to the ER alpha, or ERa, and to have both estrogen-like and estrogen antagonist effects in different tissues. RAD1901 has also been shown to have estrogen-like behavioral effects in an animal model of partner preference. In bone, RAD1901 protected against ovariectomy-induced bone loss. RAD1901 does not stimulate the endometrium, as shown in short- and long-term animal models, where changes in uterine weight, uterine epithelial thickness, and C3 gene expression are measured, all of which are sensitive indicators. In studies in which estrogen is used to stimulate the endometrium, RAD1901 antagonizes this estrogen-mediated stimulation of the endometrium. In cell culture, RAD1901 does not stimulate replication of breast cancer cells, and antagonizes the stimulating effects of estrogen on cell proliferation. Furthermore, in breast cancer cell lines a dose dependent down regulation of ERa is observed, a process we have shown to involve proteosomal-mediated degradation pathway. In a xenograft model of breast cancer, in which human breast cancer cells are implanted in mice and allowed to establish tumors in response to estrogen treatment, we observed that treatment with RAD1901 results in decreased tumor growth.

In July 2015, we announced that early but promising preclinical data show that our investigational drug RAD1901, in combination with Pfizer's palbociclib, a CDK 4/6 inhibitor, or Novartis' everolimus, an mTOR inhibitor, was effective in shrinking tumors. In PDx animal breast cancer models with either wild type or mutant ESR1, treatment with RAD1901 resulted in marked tumor growth inhibition, and the combination of RAD1901 with either agent, palbociclib or everolimus, showed anti-tumor activity that was significantly greater than either agent alone.

Phase 2b - Vasomotor Symptoms Study

RAD1901 is also being evaluated at low doses for the potential relief of the frequency and severity of moderate to severe hot flashes in postmenopausal women with vasomotor symptoms. We expect to report results from our Phase 2b clinical study of RAD1901 for the potential treatment of postmenopausal vasomotor symptoms in the first half of 2017.

Our Investigational Drug—RAD140

RAD140 is a potent, orally bioavailable non-steroidal investigational SARM that resulted from an internal drug discovery program focused on the androgen receptor pathway, which is highly expressed in many ER-positive and ER-negative breast cancers. Due to its receptor and tissue selectivity, potent oral activity and long duration half-life, we-believe RAD140 could have clinical potential in the treatment of oncology and multiple conditions where androgen modulation may offer therapeutic benefit. We submitted an IND for RAD140 in December 2016. In 2017, we plan to initiate a first-in-human Phase 1 study of RAD140 in women with hormone receptor positive breast cancer.

Manufacturing

We do not own or operate manufacturing facilities for the production of any of our investigational product candidates, nor do we have plans to develop our own manufacturing operations in the foreseeable future. The active pharmaceutical ingredient, or API, of abaloparatide is manufactured on a contract basis by Polypeptide Laboratories Holding (PPL) AB, or PPL, as successor-in-interest to Lonza Group Ltd., using a solid phase peptide synthesis assembly process, and purification by high pressure liquid chromatography. Abaloparatide-SC is supplied as a liquid in a multi-dose cartridge for use in a pen delivery device. The pen delivery device is manufactured by Ypsomed AG, or Ypsomed. The multi-dose cartridges and pen delivery device are filled, assembled and packaged by Vetter International GmbH, or Vetter.

Abaloparatide-TD is manufactured by 3M Co. and 3M Innovative Properties Co., or together 3M, based on their patented microneedle technology to administer drugs through the skin, as an alternative to subcutaneous injection. The API for RAD1901 is manufactured for us on a contract basis by Patheon, Inc.

Manufacturing is subject to extensive regulations that impose various procedural and documentation requirements, which govern the methods used in, and the facilities and controls used for, the manufacture, processing, packing and holding of drugs. FDA cGMP requirements include those pertaining to record keeping, manufacturing processes and controls, personnel, quality control and quality assurance, among others. Our contract manufacturing organizations are required to manufacture our investigational product candidates under current Good Manufacturing Practice, or cGMP, conditions. cGMP is a regulatory standard for the production of human pharmaceuticals that imposes extensive procedural, substantive and record keeping requirements on the manufacturing process and associated production and testing facilities.

Intellectual Property

As of December 31, 2016 , we owned or co-owned 11 issued U.S. patents, as well as 18 pending U.S. patent applications, 5 pending Patent Cooperation Treaty, or PCT, applications, 33 pending foreign patent applications in the European Patent Office and 14 other jurisdictions, and 32 granted foreign patents. As of December 31, 2016 , we had licenses to 3 U.S. patents related to compositions and related uses thereof, as well as numerous foreign counterparts to many of these patents and patent applications. In 2016, five U.S. patents that we licensed from Ipsen expired. We own the federal trademark registration in the United States for Radius ® in association with pharmaceuticals. In addition, we have received notices of allowance for trademarks on potential brand names for our product candidates in the U.S. and in other countries.

We strive to protect the proprietary technology that we believe is important to our business, including seeking and maintaining patents intended to cover our investigational product candidates and compositions, their methods of use and processes for their manufacture and any other inventions that are commercially important to the development of our business. We also rely on trade secrets to protect aspects of our business that are not amenable to, or that we do not consider appropriate for, patent protection.

Our success will significantly depend on our ability to obtain and maintain patent and other proprietary protection for commercially important technology and inventions and know-how related to our business, defend and enforce our patents, preserve the confidentiality of our trade secrets, and operate without infringing the valid and enforceable patents and proprietary rights of third parties. We also rely on know-how and continuing technological innovation to develop and maintain our proprietary position.

Abaloparatide

We acquired and maintain exclusive worldwide rights, excluding development and commercialization rights for Japan, to certain patents, data and technical information related to abaloparatide through a license agreement with an affiliate of Ipsen. Composition of matter of abaloparatide was claimed in the United States (U.S. Patent No. 5,969,095), Europe, Australia, Canada, China, Hong Kong, South Korea, New Zealand, Poland, Russia, Singapore, Mexico, Hungary, and Taiwan. These patents and European Patent No. 0847278, which was included in the license from Ipsen and claimed the composition of matter of abaloparatide, expired in 2016. The subcutaneous formulation of abaloparatide for potential use in treating osteoporosis is covered by Patent No. 7,803,770 until the statutory term expires October 3, 2027, which we expect will be extended to March 26, 2028 (statutory term extended with 175 days of patent term adjustment due to delays in patent prosecution by the United States Patent and Trademark Office, or USPTO) in the United States (not including any patent term extension under the Hatch-Waxman Act). The intended therapeutic formulation for abaloparatide-SC is covered by Patent No. 8,148,333 until 2027 in the United States (not including any patent term extension under the Hatch-Waxman Act). Related patents granted in Australia, China, Israel, Japan, South Korea, Mexico, New Zealand, Russia, Singapore, and Ukraine, and additional patent applications pending in Brazil, Canada, Europe, Hong Kong, India, South Korea, and Norway, will have a patent expiration date of 2027, not taking into account extension under any applicable laws. A notice to grant the abaloparatide-SC osteoporosis treatment method has been received from the European Patent Office. When granted, this patent will have a normal expiry of October 3, 2027, not including any issued supplementary patent certificates, or SPC. Patent applications covering various aspects of abaloparatide for microneedle application have been granted in Australia, Japan, and New Zealand, and additional patent applications are currently pending in the United States, Australia, Brazil, Canada, China, Europe, Hong Kong, Israel, India, Japan, South Korea, Mexico, New Zealand, Russia, Singapore, and Ukraine. The issued patents and any patents that might issue from the pending applications will have a statutory expiration date in 2032, not taking into account extension under any applicable laws. We have worldwide rights to commercialize abaloparatide-TD, including in Japan.

RAD1901

We exclusively licensed the worldwide rights to RAD1901 from Eisai. U.S. Patent No. 7,612,114 (statutory term expires December 25, 2023 which we expect will be extended up to August 18, 2026 with 967 days of patent term adjustment not taking into account any Hatch-Waxman patent term extensions) covers RAD1901 as a composition of matter as well as the use of RAD1901 for treatment of estrogen-dependent osteoporosis or estrogen-dependent breast cancer. Corresponding patents issued in Australia, Canada, Japan, Poland, and Europe and pending in India will have a statutory expiration date in 2023, not taking into account extension under any applicable laws. Patent applications covering methods of using RAD1901 for the treatment of vasomotor symptoms are issued in the United States (U.S. Patent No. 8,933,130, statutory term expires June 22, 2027, which we expect will be extended up to October 19, 2031 with 1,580 days of patent term adjustment not taking into account any Hatch-Waxman patent term extensions), Canada and Europe; any issued patents will have a statutory expiration date in 2027. Patent applications covering a dosage form have been issued in Europe and are pending in the United States, Europe, Canada and Mexico, and any claims that issued or later issue from the pending applications will have a statutory expiration date in 2031.

RAD140

The composition of matter of, and methods of using, RAD140 are covered by U.S. Patent No. 8,067,448 (statutory term expires February 19, 2029, which we expect will be extended to September 25, 2029, with 218 days of patent term adjustment due to delays by the USPTO, not taking into account any Hatch Waxman patent term extensions) and U.S. Patent No. 8,268,872 (statutory term expires February 19, 2029 which we expect will be extended to September 25, 2029 with patent term adjustment, subject to a terminal disclaimer of Patent Nos. 8,067,448 and 8,455,525). Related patents have been granted in Australia, Canada, Europe, Japan and Mexico and additional patent applications are pending in Brazil and India. Any patents issued from these filings will have a statutory expiration date in 2029.

There can be no assurance that an issued patent will remain valid and enforceable in a court of law through the entire patent term. Should the validity of a patent be challenged, the legal process associated with defending the patent can be costly and time consuming. Issued patents can be subject to oppositions, interferences and other third-party challenges that can result in the revocation of the patent or that can limit patent claims such that patent coverage lacks sufficient breadth to protect subject matter that is commercially relevant. Competitors may be able to circumvent our patents. Development and commercialization of pharmaceutical products can be subject to substantial delays and it is possible that at the time of commercialization any patent covering the product has expired or will be in force for only a short period of time following commercialization. We cannot predict with any certainty if any third-party U.S. or foreign patent rights, or other proprietary rights, will be deemed infringed by the use of our technology. Nor can we predict with certainty which, if any, of these rights will or may be asserted against us by third-parties. Should we need to defend ourselves and our partners against any such claims, substantial costs may be incurred. Furthermore, parties making such claims may be able to obtain injunctive or other equitable relief, which could effectively block our ability to develop or commercialize some or all our products in the United States and abroad, and could result in the award of substantial damages. In the event of a claim of infringement, we or our partners may be required to obtain one or more licenses from a third party. There can be no assurance that we can obtain a license on a reasonable basis should we deem it necessary to obtain rights to an alternative technology that meets our needs. The failure to obtain a license may have a material adverse effect on our business, results of operations and financial condition.

We also rely on trade secret protection for our confidential and proprietary information. No assurance can be given that we can meaningfully protect our trade secrets on a continuing basis. Others may independently develop substantially equivalent confidential and proprietary information or otherwise gain access to our trade secrets.

It is our policy to require our employees and consultants, outside scientific collaborators, sponsored researchers and other advisors who receive confidential information from us to execute confidentiality agreements upon the commencement of employment or consulting relationships. These agreements provide that all confidential information developed or made known to these individuals during the course of the individual's relationship with us is to be kept confidential and is not to be disclosed to third parties except in specific circumstances. The agreements provide that all inventions conceived by an employee shall be our property. There can be no assurance, however, that these agreements will provide meaningful protection or adequate remedies for our trade secrets in the event of unauthorized use or disclosure of such information.

Our success will depend in part on our ability to obtain and maintain patent protection, preserve trade secrets, prevent third parties from infringing upon our proprietary rights and operate without infringing upon the proprietary rights of others, both in the United States and other territories worldwide.

Competition

The development and commercialization of new products to treat the targeted indications of our investigational product candidates is highly competitive, and our products, if approved, will face considerable competition from major pharmaceutical, biotechnology and specialty pharmaceutical companies, including Amgen, UCB S.A., Merck & Co, Novartis, Lilly, Pfizer, Roche, Asahi Kasei, Corium and Zosano, that currently market and/or are seeking to develop products for similar indications. Many of our competitors have substantially more resources than we do, including financial, manufacturing, marketing, research and drug development resources. In addition, many of these companies have longer operating histories and more experience than us in preclinical and clinical development, manufacturing, regulatory and global commercialization.

Abaloparatide

There are two main types of osteoporosis drugs currently available in the United States, anti-resorptive agents and anabolic agents. Anti-resorptive agents including bisphosphonates, estrogen, SERMs and Amgen's Prolia are the most common treatments for osteoporosis. Teriparatide, marketed by Lilly under the name Forteo/Forsteo, is the only anabolic drug approved in the United States and Europe for the treatment of osteoporosis. We are aware of companies pursuing development of biosimilar and/or generic versions of teriparatide through various regulatory pathways, including Pfenex, Inc. in the United States; Teva Pharmaceutical Industries, Ltd., currently under EU and U.S. regulatory review; and STADA Arzneimittel AG and Gedeon Richter, approved in the European Union (with launch not expected until expiration of the applicable patents covering teriparatide, or if earlier, invalidation of such patents in connection with currently pending patent litigation and/or challenges).

Other organizations are also working to develop new therapies to treat osteoporosis. For example, Amgen and UCB are co-developing romosozumab, a humanized monoclonal antibody that inhibits the action of sclerostin, which is currently under review by the FDA with a PDUFA date of July 19, 2017.

In addition, we are aware that Corium and Zosano are developing a transdermal form of PTH (1-34) that would compete with abaloparatide-TD.

RAD1901

RAD1901 for the treatment of hormone receptor positive breast cancer will face competition from SERDs, CNS-penetrant anti-cancer agents and from chemotherapy derivatives. AstraZeneca's Faslodex is the only SERD currently approved in the United States for the treatment of metastatic breast cancer. In addition, there are other organizations working to develop new therapies to treat metastatic breast cancer, including Roche, which is developing two oral SERD's which are currently in Phase 1 and Phase 2 clinical development.

RAD1901 for the treatment of vasomotor systems will face competition from recently launched products including Pfizer's Duavee and Premarin, and Noven Therapeutic's Brisdelle ® .

RAD140

RAD140 is being developed for women with hormone receptor positive breast cancer. While no SARMs are currently approved as therapeutics in the United States, there are select competitive molecules in development across a range of indications, including in oncology (GTx), hip fractures (Viking Therapeutics), and cachexia (GSK).

We cannot assure you that any of our current investigational product candidates, if successfully developed and approved, will be able to compete effectively against these, or any other competing therapeutics that may become available on the market.

Collaborations and License Agreements

3M

In June 2009, we entered into a Development and Clinical Supplies Agreement with 3M, or the 3M Agreement, under which 3M is responsible for the development of an abaloparatide-TD product and the manufacture of clinical and toxicology supplies of the abaloparatide-TD product for preclinical, Phase 1 and Phase 2 studies on an exclusive basis during the term of the 3M Agreement. In December 2012, we entered into an amendment to 3M Agreement in which 3M agreed to develop and manufacture clinical and toxicology supplies for the Phase 3 abaloparatide-TD clinical study. In addition, 3M agreed that it will not use jointly owned intellectual property developed during and resulting from its work with us on abaloparatide-TD in relation to any other PTH or PTHrP analogue or derivative. We hold exclusive worldwide rights to this use of the 3M transdermal technology. The agreement provides for services through December 31, 2017, unless it is sooner terminated. Either party may terminate the agreement in the event of an uncured material breach by the other party.

We pay 3M for services delivered pursuant to the agreement on a fee-for-service or a fee-for-deliverable basis as specified in the agreement. We have paid 3M approximately $19.3 million, in the aggregate, through December 31, 2016 with respect to services and deliverables delivered pursuant to the 3M Agreement.

Ipsen Pharma

In September 2005, we entered into a license agreement with Ipsen, as amended, or the License Agreement, under which we exclusively licensed certain Ipsen compound technology and related patents covering abaloparatide to research, develop, manufacture and commercialize certain compounds and related products in all countries, except Japan (where we do not hold abaloparatide-SC development and commercialization rights) and France (where our commercialization rights were subject to certain co-marketing and co-promotion rights exercisable by Ipsen, provided that certain conditions included in the License Agreement were met). We believe that Ipsen's co-marketing and co-promotion rights in France have permanently expired. Ipsen also granted us an exclusive right and license under the Ipsen compound technology and related patents to make and have made compounds or product in Japan. Ipsen further granted us an exclusive right and license under certain Ipsen formulation technology and related patents solely for purposes of enabling us to develop, manufacture and commercialize compounds and products covered by the compound technology license in all countries, except Japan and France (as discussed above).

In consideration for the rights to abaloparatide and in recognition of certain milestones having been met to date, we have paid to Ipsen an aggregate amount of $4.3 million. The license agreement further requires us to make payments upon the achievement of certain future clinical and regulatory milestones. Total additional milestone payments that could be payable under the agreement are €32.0 million ($33.6 million). Should abaloparatide be approved and subsequently become commercialized, the agreement provides that we or our sublicensees would pay to Ipsen a fixed five percent royalty based on

net sales of the product on a country-by-country basis until the later of the last to expire of the licensed patents or for a period of 10 years after the first commercial sale of the licensed products in such country. The date of the last to expire of the abaloparatide patents licensed from or co-owned with Ipsen, barring any extension thereof, is expected to be March 26, 2028. In the event that we sublicense abaloparatide to a third party, the agreement provides that we would pay a percentage of certain payments received from such sublicensee (in lieu of milestone payments not achieved at the time of such sublicense). The applicable percentage is in the low double digit range. In addition, if we or our sublicensees commercialize a product that includes a compound discovered by us based on or derived from confidential Ipsen know-how, the agreement provides that we would pay to Ipsen a fixed low single digit royalty on net sales of such product on a country-by-country basis until the later of the last to expire of our patents that cover such product or for a period of 10 years after the first commercial sale of such product in such country.

The License Agreement expires on a country-by-country basis on the later of (1) the date the last remaining valid claim in the licensed patents expires in that country, or (2) a period of 10 years after the first commercial sale of the licensed products in such country, unless it is sooner terminated in accordance with its terms.

The License Agreement may be terminated by us with prior notice to Ipsen. The License Agreement may be terminated by Ipsen upon notice to us with immediate effect, if we, in any country of the world, bring an action or proceeding to challenge any Ipsen patent. The License Agreement can also be terminated by Ipsen if we fail to use reasonable commercial efforts to develop the licensed product for sale and commercialization in those countries within the territory where it is commercially reasonable to do so as contemplated by the License Agreement, or fail to use reasonable commercial efforts to perform our obligations under the latest revised version of the development plan approved by the joint steering committee, or fail to use reasonable commercial efforts to launch and sell one licensed product in those countries within the territory where it is commercially reasonable to do so. Either party may also terminate the License Agreement upon an uncured material breach by the other party. Ipsen may terminate the License Agreement if the License Agreement is assigned or sublicensed, if a third party acquires us, or if we acquire control over a PTH or a PTHrP compound that is in clinical development or is commercially available in the territory, and if following such assignment, sublicense, acquisition, or acquisition of control by us, such assignee, sublicensee, acquirer or we, fail to meet the timetable under the latest revised version of the development plan approved by the joint steering committee under the License Agreement.

Prior to executing the License Agreement for abaloparatide with Radius, Ipsen licensed the Japanese rights for abaloparatide to Teijin Limited, or Teijin, a Japanese pharmaceutical company. Teijin has completed a Phase 2 clinical study of abaloparatide in Japan for the treatment of postmenopausal osteoporosis.

We are currently in arbitration proceedings with Ipsen in connection with the License Agreement. See “Legal Proceedings” for more information.

Eisai

In June 2006, we exclusively licensed the worldwide rights to research, develop, manufacture and commercialize RAD1901 and related products from Eisai, or the Eisai Agreement. Our license with Eisai did not originally include rights for Japan, however, on March 9, 2015, we entered into an amendment to the Eisai Agreement in which Eisai granted us an exclusive right and license to research, develop, manufacture and commercialize RAD1901 in Japan, or the Eisai Amendment. Specifically, we licensed the patent application that subsequently issued as U.S. Patent No. 7,612,114 (statutory term expires December 25, 2023 which we expect will be extended to August 18, 2026 with 967 days of patent term adjustment due to delays by the USPTO), entitled "Selective Estrogen Receptor Modulator," the corresponding foreign patent applications and continuing patent applications. In consideration for the worldwide rights to RAD1901 and in recognition of certain milestones having been met to date, we have paid to Eisai an aggregate amount of $1.9 million. We have also agreed to pay Eisai additional fees of up to $22.3 million, payable upon the achievement of certain clinical and regulatory milestones.

Under the Eisai Agreement as amended, should a product covered by the licensed technology be commercialized, we will be obligated to pay to Eisai royalties in a variable mid-single digit range based on net sales of the product on a country-by-country basis. The royalty rate will be reduced, on a country-by-country basis, at such time as the last remaining valid claim in the licensed patents expires, lapses or is invalidated and the product is not covered by data protection clauses. In addition, the royalty rate will be reduced, on a country-by-country basis, if, in addition to the conditions specified in the previous sentence, lawful generic versions of such product account for more than a specified minimum percentage of the total sales of all products that contain the licensed compound during a calendar quarter. The latest licensed patent is expected to expire, barring any extension thereof, on August 18, 2026.

We were also granted the right to sublicense with prior written approval from Eisai. If we sublicense the licensed technology to a third party, we will be obligated to pay Eisai, in addition to the milestone fees referenced above, a fixed low

double digit percentage of certain fees we receive from such sublicensee in addition to royalties in the low single digit range based on net sales of the sublicensee.

The license agreement expires on a country-by-country basis on the later of (1) the date the last remaining valid claim in the licensed patents expires, lapses or is invalidated in that country, the product is not covered by data protection clauses, and the sales of lawful generic versions of the product account for more than a specified percentage of the total sales of all pharmaceutical products containing the licensed compound in that country, or (2) a period of 10 years after the first commercial sale of the licensed products in such country, unless it is sooner terminated.

We can terminate the license agreement, with respect to the entire territory, with prior notice to Eisai if we reasonably determine that the medical/scientific, technical, regulatory or commercial profile of the licensed product does not justify continued development or marketing.

Eisai can terminate the license agreement, on a country-by-country basis, at any time prior to the date on which we have submitted for either an NDA approval or EMA marketing approval with respect to a licensed product, upon prior written notice to us, if Eisai makes a good faith determination, in accordance with certain provisions specified in the agreement, that we have not used commercially reasonable efforts to develop the licensed product in the territory. Either party may also terminate the agreement upon an uncured material breach by the other party or upon the bankruptcy or insolvency of the other party. Eisai may terminate the license agreement, with prior written notice, in the event of certain changes of control involving us, if Eisai reasonably determines that the entity assuming control of us is not able to perform under the license agreement with the same degree of skill and diligence that we would use. Eisai shall further have the right to terminate if the acquiring entity has any material and active litigations with Eisai, or is a hostile takeover bidder against us.

Supply and Manufacturing Agreements

In June 2016, we entered into a Supply Agreement with Ypsomed, or the Ypsomed Supply Agreement, pursuant to which Ypsomed agreed to supply commercial and clinical supplies of a disposable pen injection device customized for subcutaneous injection of abaloparatide, or the Device. We agreed to purchase a minimum number of Devices at prices per Device that decrease with an increase in quantity supplied. In addition, we agreed to make milestone payments for Ypsomed's capital developments in connection with the initiation of the commercial supply of the Device and to pay a one-time capacity fee. All costs and payments under the Ypsomed Supply Agreement are delineated in Swiss Francs.

The Ypsomed Supply Agreement has an initial term of three years from the earlier of the date of delivery of the first commercial batch of Devices after regulatory approval or June 1, 2017, after which, it automatically renews for two-year terms until terminated. We or Ypsomed may terminate the agreement at any time by providing notice to the other party 18 months prior to the end of the then-current term. The agreement may also be terminated by either party upon material breach of the agreement, due to a party's bankruptcy, insolvency, or dissolution, or due to a change of control of either party under certain circumstances. We may terminate the agreement in the event that Ypsomed is unable to obtain regulatory or other approval for the manufacture and sale of Devices or if such approval is revoked. During the initial term of the agreement, we estimate that we will be obligated to make total minimum payments to Ypsomed of approximately CHF 3.9 million ($4.0 million) in the aggregate, including the milestone payments and one-time capacity fee.

In June 2016, we entered into a Commercial Supply Agreement, or the Vetter Supply Agreement, with Vetter Pharma International, GmbH, or Vetter, pursuant to which Vetter has agreed to formulate the finished abaloparatide-SC drug product containing the API of abaloparatide, to fill cartridges with the drug product, to assemble the pen delivery device, and to package and label the pen for commercial distribution. We agreed to purchase the cartridges and pens in specified batch sizes at a price per unit. For labeling and packaging services, we agreed to pay a per unit price dependent upon the number of pens loaded with cartridges that are labeled and packaged. These prices are subject to an annual price adjustment. The Vetter Supply Agreement has an initial term of five years, which began on January 1, 2016, after which, it automatically renews for two-year terms unless either party notifies the other party two years before the end of the then-current term that it does not intend to renew.

Vetter may terminate the Vetter Supply Agreement effective upon written notice to us if we fail to maintain certain insurance required under the agreement, or breach provisions regarding ethical business practices, laws, and regulations. We may terminate the agreement effective upon written notice to Vetter if: (1) Vetter fails to obtain or maintain any material governmental licenses or approvals, (2) Vetter has breached provisions regarding ethical business practices, laws, and regulations, or (3) we fail to obtain certain regulatory approvals. Either party may terminate the agreement due to: (1) the other party's bankruptcy or insolvency, (2) the other party's uncured breach of the agreement, (3) a continuing force majeure event, or (4) a failure to reach mutual agreement on a change in the scope of work or services that Vetter reasonably believes it cannot perform because the change is in violation of applicable law.

In July 2016, we entered into a Manufacturing Services Agreement, or the Manufacturing Agreement, with PPL, as successor-in-interest to Lonza, pursuant to which PPL has agreed to manufacture the commercial and clinical supplies of the API for abaloparatide. We agreed to purchase the API in batches at a price per gram in euros, subject to an annual increase by PPL. We are also required to purchase a minimum number of batches annually. The Manufacturing Agreement has an initial term of six years, after which, it automatically renews for three-year terms unless either party provides notice of non-renewal 24 months before the end of the then-current term.

PPL may terminate the agreement for any reason upon 30-months' notice. We may terminate the Manufacturing Agreement for any reason upon 24-months' notice, if we fail to obtain regulatory marketing approval for abaloparatide upon 12-months' notice to PPL, or if abaloparatide is withdrawn from the market upon 12-months' notice to PPL. Either party may terminate the agreement for the other's uncured breach of the agreement due to a party's bankruptcy, insolvency, or dissolution, or due to certain force majeure events.

Government Regulation

United States—FDA Process

The research, development, testing, manufacture, labeling, promotion, advertising, distribution and marketing, among other things, of our product candidates are extensively regulated by governmental authorities in the United States and other countries. In the United States, the FDA regulates drugs under the Federal Food, Drug, and Cosmetic Act, or the FDCA, and its implementing regulations. Failure to comply with the applicable United States requirements may subject us to administrative or judicial sanctions, such as FDA refusal to approve pending NDAs, imposition of clinical holds, warning letters, product recalls, product seizures, total or partial suspension of production or distribution, injunctions, and/or criminal prosecution. We expect abaloparatide, RAD1901 and RAD140 will each be subject to review by the FDA as a drug pursuant to the NDA process, and we currently only have active IND applications in relation to abaloparatide, RAD1901 and RAD140 in the United States.

Approval Process —None of our drugs may be marketed in the United States until the drug has received FDA approval of an NDA. The steps required to be completed before a drug may be marketed in the United States include, among others:

- preclinical laboratory tests, animal studies, and formulation studies, all performed in accordance with the FDA's Good Laboratory Practice, or GLP, regulations;
- submission to the FDA of an IND application for human clinical testing, which must become effective before human clinical trials may begin and must be updated annually;
- adequate and well-controlled human clinical trials to establish the safety and efficacy of the drug for each proposed indication to FDA's satisfaction;
- submission to the FDA of an NDA;
- satisfactory completion of an FDA pre-approval inspection of one or more clinical trial site(s) at which the drug was studied in a clinical trial(s) to assess compliance with Good Clinical Practices, or GCP, regulations;
- satisfactory completion of an FDA pre-approval inspection of the manufacturing facility or facilities at which the drug is produced to assess compliance with cGMP regulations; and
- FDA review and approval of the NDA based on a determination that the drug is safe and effective for the proposed indication(s).

Preclinical tests include laboratory evaluation of product chemistry, toxicity, and formulation, as well as animal studies. The conduct of the preclinical tests and formulation of the compounds for testing must comply with federal regulations and requirements. The results of the preclinical tests, together with manufacturing information and analytical data, are submitted to the FDA as part of an IND application, which must become effective before human clinical trials may begin. An IND application will automatically become effective 30 days after receipt by the FDA, unless before that time the FDA raises concerns or questions about issues such as the conduct of the trials as outlined in the IND application. In such a case, the IND application sponsor and the FDA must resolve any outstanding FDA concerns or questions before clinical trials can proceed. We cannot be sure that submission of an IND application will result in the FDA allowing clinical trials to begin.

Clinical trials involve the administration of the investigational drug to human subjects under the supervision of qualified investigators. Clinical trials are conducted under GCP pursuant to protocols detailing the objectives of the study, the parameters to be used in monitoring safety, and the effectiveness criteria to be evaluated. Each protocol must be submitted to the FDA as

part of the IND application. Detailed information about many clinical trials must be submitted to the National Institutes of Health, or NIH, for public disclosure on the government website ClinicalTrials.gov.

Clinical trials necessary for product approval are typically conducted in three sequential phases, but the Phases may overlap. The study protocol and informed consent information for study subjects in clinical trials must also be approved by an Institutional Review Board, or IRB, for each institution where the trials will be conducted, and each IRB must monitor the study until completion. Study subjects must provide informed consent and sign an informed consent form before participating in a clinical trial. Clinical testing also must satisfy the extensive GCP regulations for informed consent and privacy of individually identifiable information.

Phase 1 usually involves the initial introduction of the investigational drug into people to evaluate its short-term safety, dosage tolerance, metabolism, pharmacokinetics and pharmacologic actions, and, if possible, to gain an early indication of its effectiveness. Phase 1 studies are usually conducted in healthy individuals and are not intended to treat disease or illness. However, Phase 1b studies are conducted in healthy volunteers or in patients diagnosed with the disease or condition for which the study drug is intended, who present some biomarker, surrogate, or possibly clinical outcome that could be considered for "proof of concept." Proof of concept in a Phase 1b study typically confirms the hypothesis that the current prediction of biomarker, or outcome benefit is compatible with the mechanism of action.

Phase 2 usually involves trials in a limited patient population to: (1) evaluate dosage tolerance and appropriate dosage, (2) identify possible adverse effects and safety risks, and (3) evaluate preliminarily the efficacy of the drug for specific target indications. Several different doses of the drug may be looked at in Phase 2 to see which dose has the desired effects. Patients are monitored for side effects and for any improvement in their illness, symptoms, or both.

Phase 3 trials usually further evaluate clinical efficacy and test further for safety by using the drug in its planned commercial form in an expanded patient population. A Phase 3 trial usually compares how well the study drug works compared with an inactive placebo and/or another approved medication. One group of patients may receive the investigational new drug being tested, while another group of patients may receive the comparator drug (already approved drug for the disease being studied), or placebo. Phase 3 trials typically are relied upon as the primary basis for approval because they provide the safety and effectiveness information needed to evaluate the overall benefit-risk relationship of the drug and to create the physician labeling.

There can be no assurance that Phase 1, Phase 2 or Phase 3 testing will be completed successfully within any specified period of time, if at all. Furthermore, we or the FDA or an Institutional Review Board, or IRB, (with respect to a particular study site) may suspend clinical trials at any time on various grounds, including a finding that the subjects or patients are being exposed to an unacceptable health risk.

In addition, clinical trial sponsors are required to register and report results from certain applicable clinical trials for publication on www.clinicaltrials.gov. Until recently, disclosure of clinical trial results for unapproved drugs could be delayed until approval of the drug. The Department of Health and Human Services recently broadened these reporting requirements to also apply to unapproved drugs, regardless of whether FDA approval is or will be sought. The allowable delay period for submitting results for applicable clinical trials of unapproved drugs is one year after the primary completion date of the study, and potentially an additional two years beyond that after submission of a certification; in any event, not to exceed three years in total. Consequently, clinical trial information could be subject to posting even if a drug is not approved and does not make it to market.

Assuming successful completion of the required clinical testing, the results of the preclinical studies and of the clinical studies, together with other detailed information, including information on the manufacture and composition of the drug, are submitted to the FDA in the form of an NDA requesting approval to market the product for one or more proposed indications. The testing and approval process requires substantial time, effort and financial resources. Unless the applicant qualifies for an exemption, the filing of an NDA typically must be accompanied by a substantial payment to the FDA, referred to as a "user fee," which currently exceeds $2 million. The FDA reviews the application and may deem it to be inadequate, and companies cannot be sure that any approval will be granted on a timely basis, if at all. The FDA may also refer the application to an appropriate advisory committee, typically a panel of clinicians, for review, evaluation and a recommendation as to whether the application should be approved. The FDA is not bound by the recommendations of the advisory committee, but the Agency historically has tended to follow such recommendations.

The FDA has various programs, including fast track designation, breakthrough therapy designation, priority review and accelerated approval, which are intended to expedite or simplify the process for reviewing drugs and/or provide for approval on the basis of surrogate endpoints. Generally, drugs that may be eligible for one or more of these programs are those intended to treat serious or life-threatening diseases or conditions, those with the potential to address unmet medical needs for those disease or conditions, and those that provide meaningful benefit over existing treatments. For example, a sponsor may be granted FDA

designation of a drug candidate as a "breakthrough therapy" if the drug candidate is intended, alone or in combination with one or more other drugs, to treat a serious or life-threatening disease or condition and preliminary clinical evidence indicates that the drug may demonstrate substantial improvement over existing therapies on one or more clinically significant endpoints, such as substantial treatment effects observed early in clinical development. If a drug is designated as breakthrough therapy, FDA will take actions to help expedite the development and review of such drug. From time to time, we anticipate applying for such programs where we believe we meet the applicable FDA criteria. A company cannot be sure that any of its drugs will qualify for any of these programs, or even if a drug does qualify, that the review time will be reduced.

In addition to the existing programs described above, additional measures intended to expedite drug product development and review were also included in the 21 st Century Cures Act, or Cures Act. The Cures Act, which was enacted in December 2016, includes provisions intended to enhance and accelerate the FDA's processes for reviewing and approving new drugs and supplements to approved NDAs. These provisions include (1) requirements that FDA establish a program to evaluate the potential use of real world evidence to help to support the approval of a new indication for an approved drug and to help to support or satisfy post-approval study requirements, (2) requirements that FDA issue guidance for purposes of assisting sponsors in incorporating complex adaptive and other novel trial designs into proposed clinical protocols and applications for new drugs, and (3) authorizing FDA to rely upon qualified data summaries to support the approval of a supplemental application with respect to a qualified indication for an already approved drug.

Before approving an NDA, the FDA usually will inspect the facility or the facilities at which the drug is manufactured and will not approve the product unless the manufacturing and production and testing facilities are in compliance with cGMP regulations. If the NDA and the manufacturing facilities are deemed acceptable by the FDA, it may issue an approval letter, and, if not, the agency may issue a Complete Response Letter. An approval letter authorizes commercial marketing of the drug with specific prescribing information for a specific indication(s). A Complete Response Letter indicates that the review cycle of the application is complete and the application is not ready for approval. Such a letter usually describes all of the deficiencies that the FDA has identified in an NDA that must be satisfactorily addressed before it can be approved. A Complete Response Letter may require additional clinical data and/or an additional pivotal Phase 3 clinical trial(s), and/or other significant, expensive and time-consuming requirements related to clinical trials, preclinical studies or manufacturing. Even if such additional information is submitted, the FDA may ultimately decide that the NDA does not satisfy the criteria for approval. The FDA could also require, as a condition of NDA approval, post-marketing testing and surveillance to monitor the drug's safety or efficacy, or impose other conditions. Approval may also be contingent on a Risk Evaluation and Mitigation Strategy, or REMS, that limits the labeling, distribution or promotion of a drug product. The FDA also may condition approval on, among other things, changes to proposed labeling, development of adequate controls and specifications, or a commitment to conduct one or more post-marketing studies or clinical trials. Once issued, the FDA may withdraw product approval if ongoing regulatory requirements are not met or if safety problems occur after the product reaches the market.

After approval, certain changes to the approved product, such as adding new indications, making certain manufacturing changes or making certain additional labeling claims, are subject to further FDA review and approval. Before a company can market products for additional indications, it must obtain additional approvals from the FDA. Obtaining approval for a new indication generally requires that additional clinical studies be conducted. A company cannot be sure that any additional approval for new indications for any investigational product candidate will be approved on a timely basis, or at all.

Post-Approval Requirements —Often times, even after a drug has been approved by the FDA for sale, the FDA may require that certain post-approval requirements be satisfied, including the conduct of additional clinical studies. If such post-approval conditions are not satisfied, the FDA may withdraw its approval of the drug. In addition, holders of an approved NDA are required to, among other requirements: (1) report certain adverse reactions to the FDA within specific time frames, (2) comply with certain requirements concerning advertising and promotional labeling for their products, (3) continue to have quality control and manufacturing procedures conform to cGMP regulations after approval, (4) make periodic reports to FDA about the approved product, and (5) comply with requirements regarding distribution of the drug product. The FDA periodically inspects the sponsor's records related to safety reporting, distribution and/or manufacturing facilities; this latter effort includes assessment of ongoing compliance with cGMP regulations. Accordingly, manufacturers must continue to expend time, money and effort in the area of production and quality control to maintain cGMP compliance. We have used and intend to continue to use third-party manufacturers to produce our products in clinical and commercial quantities, and future FDA inspections may identify compliance issues at the facilities of our contract manufacturers that may disrupt production or distribution, or require substantial resources to correct. In addition, discovery of problems with a product after approval may result in restrictions on a product, including recall or withdrawal of the product from the market, labeling changes, imposition of REMS, or the requirement to conduct additional studies.

Hatch-Waxman Act -Under the Drug Price Competition and Patent Term Restoration Act of 1984, also known as the Hatch-Waxman Act, Congress created an abbreviated FDA review process for generic versions of pioneer (brand name) drug products under section 505(j) of the FDCA. Section 505(j) provides for approval of an abbreviated new drug application, or

ANDA, that contains information to show that the proposed product is identical in active ingredient, dosage form, strength, route of administration, labeling, quality, performance characteristics, and intended use, among other things, to a previously approved drug (commonly known as the reference drug). In considering whether to approve such a generic drug product, the FDA requires that an ANDA applicant demonstrate, among other things, that the proposed generic drug product's active ingredient is the same as that of the reference product, that the proposed generic is bioequivalent to the reference product, that any impurities in the proposed product do not affect the product's safety or effectiveness, and that its manufacturing processes and methods ensure the consistent potency and purity of its proposed product. In addition to the ANDA pathway, the Hatch-Waxman Act also established an abbreviated approval pathway under section 505(b)(2) of the FDCA for applications that contain full reports of investigations of safety and effectiveness, but where at least some of the information required for approval comes from studies not conducted by or for the applicant and for which the applicant has not obtained a right of reference. Section 505(b)(2) permits approval of applications other than those for duplicate products and permits reliance for such approvals on literature or on FDA's finding of safety or effectiveness for an approved drug product.

The Hatch-Waxman Act provides five years of data exclusivity for new chemical entities, or NCE, referred to as NCE exclusivity, which generally (except as discussed below) prevents the FDA from accepting ANDAs and 505(b)(2) applications containing the protected active ingredient or active moiety for five years after initial approval of the NCE. A drug is a NCE if the FDA has not previously approved an NDA for another drug that contains the same active moiety, which FDA defines to mean the molecule or ion (excluding certain specified appended portions) responsible for the physiological or pharmacological action of the drug substance. We believe abaloparatide qualifies as an NCE and thus expect to be eligible for five years of NCE exclusivity following any FDA approval of abaloparatide-SC. Under FDA's "umbrella policy," NCE exclusivity protects all drug products that contain the qualifying NCE, so if abaloparatide-TD is approved prior to the expiration to any NCE exclusivity granted to abaloparatide-SC, we would expect abaloparatide-TD to be protected by any remaining NCE exclusivity period.

The Hatch-Waxman Act also provides three years of exclusivity for applications (including supplements) containing the results of new clinical investigations (other than bioavailability studies) essential to the FDA's approval of new versions or conditions of use of previously approved drug products, such as new indications, delivery mechanisms, dosage forms, strengths, or other conditions of use. For example, if abaloparatide-SC is approved for commercialization and we are successful in performing a clinical trial of abaloparatide-TD that provides a new basis for approval (a different delivery mechanism) and that FDA considers essential to approval of the drug, it is possible that we may become eligible for a three-year period of market exclusivity for approval of an NDA for abaloparatide-TD. Any such three-year exclusivity period would protect against the approval (but not the filing) of ANDAs and 505(b)(2) applications referencing abaloparatide-TD for the protected transdermal route of administration. Such exclusivity period for abaloparatide-TD would generally not, however, prohibit the FDA from accepting or approving ANDAs or 505(b)(2) applications referencing only abaloparatide-SC or 505(b)(2) applications that reference abaloparatide-TD but that seek approval for a different route of administration or for a use other than for the indication that has been approved for abaloparatide-TD.

The Hatch-Waxman Act requires NDA applicants and NDA holders to submit certain information about patents related to their drugs for listing in the FDA's list of Approved Drug Products with Therapeutic Equivalence Evaluations (commonly known as the Orange Book). ANDA and 505(b)(2) applicants generally must submit a certification or statement regarding each of the patents listed with the FDA for the reference product. A certification that a listed patent is invalid and/or will not be infringed by the marketing of the ANDA or 505(b)(2) applicant's product is called a "Paragraph IV certification." If the sponsor of an ANDA or 505(b)(2) application that references a drug with unexpired exclusivity provides a Paragraph IV certification for a patent for a reference product that is protected by NCE exclusivity, then the FDA may accept the ANDA or 505(b)(2) application beginning four years after approval of the reference product's NDA (rather than five years). If an ANDA or 505(b)(2) application containing a Paragraph IV certification is submitted to the FDA and accepted as a reviewable filing by the Agency, the ANDA or 505(b)(2) applicant then must provide, within 20 days of FDA acceptance, notice to the NDA holder and patent owner stating that the application has been submitted and providing the factual and legal basis for the applicant's opinion that the patent is invalid and/or not infringed. The NDA holder or patent owner then may file suit against the ANDA or 505(b)(2) applicant for patent infringement. If this is done within 45 days of receiving notice of the Paragraph IV certification, a 30-month stay of the FDA's ability to approve the ANDA or 505(b)(2) application is triggered. The 30-month stay begins on the date of receipt of the Paragraph IV notice and, in the case where an ANDA or 505(b)(2) application is submitted before a reference product's NCE exclusivity expires (i.e., four years after approval of the reference product), the 30-month period is extended to ensure that approval of the ANDA or 505(b)(2) application cannot be granted for 7 $^{1}/_{2}$ years after initial approval of the reference product. Nevertheless, the FDA may approve the proposed product before the expiration of the 30-month stay (or 7 $^{1}/_{2}$ year period) if a court finds the patent invalid and/or not infringed or if the court shortens the period because the parties have failed to cooperate in expediting the litigation.

European Union—EMA Process

In the European Union, medicinal products are authorized following a similar demanding process as that required in the United States and applications are based on the ICH Common Technical Document. In the European Economic Area, or EEA (comprised of 28 EU Member States plus Iceland, Liechtenstein and Norway), medicines can be authorized by using either the centralized authorization procedure or national authorization procedures.

Centralized procedure —Under the centralized procedure, a single marketing authorization application is submitted to the EMA. The CHMP then carries out a scientific assessment of the application and issues an opinion as to whether or not the medicine should be marketed. Following the issuance of the CHMP's opinion, the European Commission decides whether or not to grant a marketing authorization valid across the EEA. The centralized procedure is compulsory for human medicines derived from certain biotechnology processes, advanced therapy medicinal products (such as gene therapy, somatic cell therapy and tissue engineered products), medicines containing a new active substance and which are indicated for the treatment of certain diseases, such as HIV/AIDS, cancer, or neurodegenerative disorders, diabetes, autoimmune diseases and other immune dysfunctions, viral diseases, and officially designated orphan medicines. The centralized procedure is optional for applicants seeking marketing authorizations for medicines which contain a new active substance not yet authorized in the EEA, or constitute a significant therapeutic, scientific or technical innovation, or if its authorization via the centralized procedure would be in the interest of public health in the EEA. In November 2015, we submitted an MAA for abaloparatide-SC to the EMA under the centralized procedure. The MAA was validated in December 2015 and is currently undergoing regulatory review by the EMA.

National authorization procedures —There are also two other possible routes to authorize medicinal products in several countries, which are available for products that fall outside the scope of the centralized procedure:

- *Decentralized procedure.* Using the decentralized procedure, an applicant may apply for simultaneous authorization in more than one EU country of a medicinal product that has not yet been authorized anywhere in the European Union and that does not fall within the mandatory scope of the centralized procedure. The applicant selects on of the countries in which it is seeking a marketing authorization to act as a Reference Member State.

- *Mutual recognition procedure.* In the mutual recognition procedure, a medicine is first authorized in one EU Member State (the Reference Member State), in accordance with the national procedures of that country. Thereafter, further marketing authorizations can be sought from other EU countries in a procedure whereby the countries concerned agree to recognize the validity of the original, national marketing authorization.

Under both procedures, the Reference Member State submits its evaluation of the product to the other countries where national authorizations are being sought (Concerned Members States). The Concerned Member States review the evaluation and reach consensus as to whether or not to approve the application. If the application is successful, then each country issues its own national authorization for the product.

Decisions on pricing and reimbursement of medicinal products in the European Union are based upon national rules subject to the control of the Transparency Directive (Council Directive 89/105/EEC). The Transparency Directive defines a series of procedural requirements designed to verify that national pricing and reimbursement decisions do not create obstacles to the pharmaceutical trade within the EU's Internal Market. Subject to the control of the Transparency Directive, there is no binding policy at the EU level governing pricing and reimbursement, and the 28 EU Member States each have their own, often varying, approaches and policies such a price control, profit control, international price comparisons, and reference pricing. In many EU Member States, pricing negotiations must take place between the holder of the marketing authorization and the competent national authorities before the cost of the product can be funded within national healthcare schemes. The holder of the marketing authorization is usually required, in order to get support for reimbursement under national health schemes and, therefore, practical access to the market, to provide evidence demonstrating the cost-effectiveness or otherwise added value benefit of its product in comparison with directly and indirectly competing products, a procedure commonly referred to as a health technology assessment.

We have reviewed our development program, proposed Phase 3 study design, and overall non-clinical and clinical data package and believe they support future regulatory approval of abaloparatide-SC in the European Union.

Good manufacturing practices —Like the FDA, the EMA, the competent authorities of the EU Member States and other regulatory agencies regulate and inspect equipment, facilities and processes used in the manufacturing of pharmaceutical and biologic products. Prior to the CHMP adopting an opinion with respect to approvability of an application for marketing authorization, the EMA, acting upon the advice of the CHMP, may decide to coordinate an inspection of the proposed manufacturing site in order to verify the manufacturer's compliance with EU GMP principles and guidelines or to investigate a specific matter arising from the assessment of the application. If there is a material change in manufacturing equipment,

location, or process, affecting the quality of the product, additional regulatory review and approval may be required from the relevant competent regulatory authority. Once we or our partners commercialize products, we will be required to comply with GMP, and product-specific requirements as set out in the terms of the marketing authorization enforced by, the European Commission, the EMA and the competent authorities of EU Member States following the grant of marketing authorization. Also like the FDA, the EMA, the competent authorities of the EU Member States and other regulatory agencies also conduct regular, periodic visits to re-inspect equipment, facilities, and processes following the initial approval of a product. If it is determined that the equipment, facilities, or processes used to manufacture our product do not comply with applicable regulations and conditions of product approval, regulatory agencies may seek civil, criminal or administrative sanctions, or enforcement actions and/or remedies against us, including the suspension of our manufacturing operations or the withdrawal of our product from the market.

Data and Market Exclusivity —Similar to the United States, there is a process for approval of generic versions of innovator drug products in the European Union. Abridged applications for the authorization of generic versions of drugs authorized by EMA can be submitted to the EMA through the centralized procedure referencing the innovator's data and demonstrating bioequivalence to the reference product, among other things.

New medicinal products in the EU can receive eight years of data exclusivity coupled with two years of market exclusivity, and a potential one year extension of market exclusivity, if the marketing authorizations holder obtains an authorization for one or more new therapeutic indications that demonstrates "significant clinical benefit" in comparison with existing therapies. We expect to be eligible for at least ten years of exclusivity (8 years of data exclusivity + 2 years of market exclusivity) following any approval of abaloparatide-SC. At this time, we do not believe that there are orphan or pediatric applications for abaloparatide that would be likely to result in a grant of exclusivity or supplemental protection certificate in the European Union.

Abridged applications cannot rely on an innovator's data until after expiry of the 8-year data exclusivity term; applications for a generic product can be submitted after that 8 th year, but the product cannot be marketed until the end of the market exclusivity term.

Other International Markets—Drug approval process

In some international markets (e.g., China or Japan), although data generated in U.S. or EU trials may be submitted in support of a marketing authorization application, additional clinical trials conducted in the host territory, or studying people of the ethnicity of the host territory, may be required prior to the filing or approval of marketing applications within the country.

Pricing and Reimbursement

In the United States and internationally, sales of products that we market in the future, and our ability to generate revenues on such sales, are dependent, in significant part, on the availability and level of coverage and reimbursement from third-party payors such as state and federal governments, managed care providers and private insurance plans. Private insurers, such as health maintenance organizations and managed care providers, have implemented cost-cutting and reimbursement initiatives and likely will continue to do so in the future. These include establishing formularies that govern the drugs and biologics that will be offered and also the out-of-pocket obligations of member patients for such products. In addition, particularly in the United States and increasingly in other countries, we may be required to provide discounts and pay rebates to state and federal governments and agencies in connection with purchases of our products that are reimbursed by such entities. It is possible that future legislation in the United States and other jurisdictions could be enacted which could potentially impact the reimbursement rates for the products we are developing and may develop in the future and also could further impact the levels of discounts and rebates paid to federal and state government entities. Any legislation that impacts these areas could impact, in a significant way, our ability to generate revenues from sales of products that, if successfully developed, we bring to market.

The Medicare Prescription Drug, Improvement, and Modernization Act of 2003, or MMA, established the Medicare Part D program to provide a voluntary prescription drug benefit to Medicare beneficiaries. Under Part D, Medicare beneficiaries may enroll in prescription drug plans offered by private entities to provide coverage of outpatient prescription drugs. Part D plans include both stand-alone prescription drug benefit plans and prescription drug coverage as a supplement to Medicare Advantage plans. Unlike Medicare Parts A and B, Part D coverage is not standardized. Part D prescription drug plan sponsors are not required to pay for all covered Part D drugs, and each Part D prescription drug plan can develop its own drug formulary that identifies which drugs it will cover and at what tier or level. However, Part D prescription drug formularies must include drugs within each therapeutic category and class of covered Part D drugs, although not necessarily all of the drugs within each category or class. Any formulary used by a Part D prescription drug plan must be developed and reviewed by a pharmacy and therapeutic committee. We anticipate that a significant proportion of patients eligible for abaloparatide-SC will be Medicare beneficiaries and we expect that abaloparatide-SC, if approved, will be covered under Medicare Part D, although

we cannot assure you that Part D prescription drug plan sponsors will cover abaloparatide-SC, or, if covered, at what tier or level.

Government payment for some of the costs of prescription drugs may increase demand for any of our products that is successfully developed and approved. However, any negotiated prices for our products covered by a Part D prescription drug plan will likely be lower than the prices we might otherwise obtain. Moreover, although the MMA applies only to drug benefits for Medicare beneficiaries, private payers often follow Medicare coverage policy and payment limitations in setting their own payment rates. Accordingly, any reduction in payment under Medicare may result in a similar reduction in payments from non-governmental payers.

We expect that there will continue to be a number of federal and state proposals to implement governmental pricing controls and limit the growth of healthcare costs, including the cost of prescription drugs. Currently, Medicare is prohibited from negotiating directly with pharmaceutical companies for drugs. However, the U.S. Congress may in the future consider legislation that would lift the ban on federal negotiations.

The American Recovery and Reinvestment Act of 2009 provides funding for the federal government to compare the effectiveness of different treatments for the same illness. A plan for the research would be developed by the Department of Health and Human Services, the Agency for Healthcare Research and Quality and the National Institutes of Health, and periodic reports on the status of the research and related expenditures would be made to the U.S. Congress. Although the results of the comparative effectiveness studies are not intended to mandate coverage policies for public or private payers, it is not clear whether research would have any effect on the sales of any of our products that is successfully developed and approved, if the product or the condition that it is intended to treat becomes the subject of a study. It is also possible that comparative effectiveness research demonstrating benefits of a competitor's product could adversely affect the sales of any of our products that is successfully developed and approved. If third-party payers do not consider our products to be cost-effective compared to other available therapies, they may not cover our products after approval as a benefit under their plans or, if they do, the level of payment may not be sufficient to allow us to sell our products on a profitable basis.

The Patient Protection and Affordable Care Act, or the ACA, as amended by the Health Care and Education Affordability Reconciliation Act of 2010, or collectively the ACA, is expected to have a significant impact on the health care industry. The ACA expands coverage for the uninsured while at the same time containing overall healthcare costs. Among other things, the ACA expands and increases industry rebates for drugs covered under Medicaid programs and make changes to the coverage requirements under the Medicare Part D program. In addition, other legislative changes have been proposed and adopted in the United States since the ACA was enacted. Any such legislative changes associated with healthcare reform, including the ACA, may have a significant impact on drug pricing, and could limit pricing flexibility or expand rebate liabilities of drug manufacturers.

On August 2, 2011, the Budget Control Act of 2011, among other things, created measures for spending reductions by Congress. A Joint Select Committee on Deficit Reduction, tasked with recommending a targeted deficit reduction of at least $1.2 trillion for the years 2013 through 2021, was unable to reach required goals, thereby triggering the legislation's automatic reduction to several government programs. This includes aggregate reductions to Medicare payments to providers of 2% per fiscal year, which went into effect on April 1, 2013 and, due to subsequent legislative amendments to the statute, will remain in effect through 2025 unless additional Congressional action is taken. In January 2013, the American Taxpayer Relief Act of 2012, or the ATRA, was enacted, which among other things, further reduced Medicare payments to several providers, including hospitals, imaging centers and cancer treatment centers.

Decisions on pricing and reimbursement of medicinal products in the European Union are based upon national rules subject to the control of the Transparency Directive, which aims to ensure the transparency of measures established by EU countries to control the pricing and reimbursement of medicinal products. It defines a series of procedural requirements designed to verify that national pricing and reimbursement decisions do not create obstacles to the pharmaceutical trade within the EU's Internal Market. The competent authorities of each of the 28 EU Member States have adopted individual strategies regulating the pricing and reimbursement of medicinal products in their territory. These strategies often vary widely in nature, scope and application. However, a major element that they have in common is an increased move toward reduction in the reimbursement price of medicinal products, a reduction in the number and type of products selected for reimbursement, and an increased preference for generic products over innovative products. These efforts have mostly been executed through these countries' existing price-control methodologies, including price cuts, mandatory rebates, value-based pricing, and reference pricing (i.e., referencing prices in other countries and using those reference prices to set a price). It is increasingly common in many EU Member States for Marketing Authorization Holders to be required, in order to get support for reimbursement under national health schemes and, therefore, access to the market, to demonstrate the cost effectiveness or otherwise added value benefit of their products as compared to products already subject to pricing and reimbursement in specific countries. In order for drugs to be evaluated positively under such criteria, pharmaceutical companies may need to re-examine, and consider

altering, a number of traditional functions relating to the selection, study, and management of drugs, whether currently marketed, under development, or being evaluated as candidates for research and/or development.

Future legislation, including the current versions being considered at the federal and state level in the United States and at the national level in EU Member States, or regulatory actions implementing recent or future legislation may have a significant effect on our business. Our ability to successfully commercialize products depends in part on the extent to which coverage and reimbursement for the costs of our products and related treatments will be available in the United States and worldwide from government health administration authorities, private health insurers and other organizations. Substantial uncertainty exists as to the reimbursement status of newly approved healthcare products by third-party payors. In addition, negotiating prices with government authorities under current and proposed legislation can delay the commercialization of our product candidates.

Sales and Marketing

The FDA regulates all advertising and promotion activities for products under its jurisdiction both prior to and after approval. Generally, a company can make only those claims relating to safety and efficacy that are approved by the FDA following review and approval of an NDA. Physicians may prescribe legally available drugs for uses that are not described in the drug's labeling and that differ from those tested by us and approved by the FDA. Such off-label uses are common across medical specialties, and often reflect a physician's belief that the off-label use is the best treatment for the patients. The FDA does not regulate the behavior of physicians in their choice of treatments, but FDA regulations and enforcement policies do impose stringent restrictions on manufacturers' communications regarding off-label uses. In addition, the FDA also regulates communications about investigational drugs, including with respect to the pre-approval promotion of investigational drugs. Recent case law suggests that pharmaceutical companies may have a First Amendment right to provide truthful and non-misleading information about off-label uses of their products to physicians and others, but the scope of this right remains unclear. Accordingly, failure to comply with applicable FDA requirements may subject a company to adverse publicity, enforcement action by the FDA, corrective advertising, consent decrees and the full range of civil and criminal penalties available to the FDA.

We may also be subject to various federal and state laws pertaining to healthcare "fraud and abuse," including anti-kickback laws and false claims laws. Anti-kickback laws make it illegal for a prescription drug manufacturer to solicit, offer, receive, or pay any remuneration in exchange for, or to induce, the referral of business, including the purchase or prescription of a particular drug. Due to the breadth of the statutory provisions and the absence of guidance in the form of regulations and very few court decisions addressing industry practices, it is possible that our practices might be challenged under anti-kickback or similar laws. Moreover, recent healthcare reform legislation has strengthened these laws. For example, the ACA, among other things, amends the intent requirement of the federal anti-kickback and criminal healthcare fraud statutes, so that a person or entity no longer needs to have actual knowledge of this statute or specific intent to violate it in order to have committed a violation. In addition, the ACA permits the government to assert that a claim that includes items or services resulting from a violation of the federal anti-kickback statute constitutes a false or fraudulent claim for purposes of the false claims statutes. False claims laws prohibit anyone from knowingly and willingly presenting, or causing to be presented for payment, to third-party payors (including Medicare and Medicaid) claims for reimbursed drugs or services that are false or fraudulent, claims for items or services not provided as claimed, or claims for medically unnecessary items or services. Our activities relating to the sale and marketing of our products, if approved, may be subject to scrutiny under these laws. Violations of fraud and abuse laws may be punishable by criminal and civil sanctions, including fines and civil monetary penalties, the possibility of exclusion from federal healthcare programs (including Medicare and Medicaid) and corporate integrity agreements, which impose, among other things, rigorous operational and monitoring requirements on companies. Similar sanctions and penalties also can be imposed upon executive officers and employees, including criminal sanctions against executive officers under the so-called "responsible corporate officer" doctrine, even in situations where the executive officer did not intend to violate the law and was unaware of any wrongdoing.

Given the significant penalties and fines that can be imposed on companies and individuals if convicted, allegations of such violations often result in settlements even if the company or individual being investigated admits no wrongdoing. Settlements often include significant civil sanctions, including fines and civil monetary penalties, and corporate integrity agreements. If the government were to allege or convict us or our executive officers of violating these laws, our business could be harmed. In addition, private individuals have the ability to bring similar actions. The majority of states also have anti-kickback and false claims laws, which establish similar prohibitions and in some cases, may apply to items or services reimbursed by any third-party payor, including commercial insurers. Our activities could be subject to challenge for the reasons discussed above and due to the broad scope of these laws and the increasing attention being given to them by law enforcement authorities.

There has also been a recent trend of increased federal and state regulation of payments made to physicians and other healthcare providers. The ACA, among other things, imposes new reporting requirements on drug manufacturers for payments made by them to physicians and teaching hospitals, as well as ownership and investment interests held by physicians and their

immediate family members. Failure to submit required information may result in civil monetary penalties of up to an aggregate of $150,000 per year (or up to an aggregate of $1 million per year for "knowing failures"), for all payments, transfers of value or ownership or investment interests that are not timely, accurately and completely reported in an annual submission. Drug manufacturers are required to submit reports to the government by the 90th day of each calendar year. Certain states also mandate implementation of compliance programs, impose restrictions on drug manufacturer marketing practices and/or require the tracking and reporting of gifts, compensation and other remuneration to physicians. Many of these laws contain ambiguities as to what is required to comply with the laws. Given the lack of clarity in laws and their implementation, our actions could be subject to the penalty provisions of the pertinent state authorities.

Similar rigid restrictions are imposed on the promotion and marketing of medicinal products in the EU and other countries. Laws (including those governing promotion, marketing and anti-kickback provisions), industry regulations and professional codes of conduct often are strictly enforced. Even in those countries where we are not directly responsible for the promotion and marketing of our products, inappropriate activity by our international distribution partners can have adverse implications for us.

Other Laws and Regulatory Processes

We are subject to a variety of financial disclosure and securities trading regulations as a public company in the United States, including laws relating to the oversight activities of the SEC and the regulations of the NASDAQ Global Market or any national securities exchange on which our capital stock may be traded. In addition, the Financial Accounting Standards Board, or FASB, the SEC and other bodies that have jurisdiction over the form and content of our accounts, our consolidated financial statements and other public disclosure are constantly discussing and interpreting proposals and existing pronouncements designed to ensure that companies best display relevant and transparent information relating to their respective businesses.

Our international operations are subject to compliance with the Foreign Corrupt Practices Act, or the FCPA, which prohibits corporations and individuals from paying, offering to pay, or authorizing the payment of anything of value to any foreign government official, government staff member, political party, or political candidate in an attempt to obtain or retain business or to otherwise influence a person working in an official capacity. We also may be implicated under the FCPA for activities by our partners, collaborators, clinical research organizations, vendors or other agents.

Our present and future business has been and will continue to be subject to various other laws and regulations. Various laws, regulations and recommendations relating to safe working conditions, laboratory practices, the experimental use of animals, and the purchase, storage, movement, import and export and use and disposal of hazardous or potentially hazardous substances used in connection with our research work are or may be applicable to our activities. Certain agreements entered into by us involving exclusive license rights or acquisitions may be subject to national or supranational antitrust regulatory control, the effect of which cannot be predicted. The extent of government regulation, which might result from future legislation or administrative action, cannot accurately be predicted.

Employees

As of December 31, 2016 , we employed 229 full-time employees and 8 part-time employees, 39 of whom held Ph.D. or M.D. degrees. 107 of our employees were engaged in research and development activities and 130 were engaged in support administration, including business development and finance. Of our 130 employees engaged in support administration, 69 are part of the organization we are building to support the potential commercialization of abaloparatide-SC in the United States. We use and intend to continue using CROs and other third parties to perform our clinical studies and manufacturing.

Corporate Information

We were incorporated in the state of Delaware on February 4, 2008 under the name MPM Acquisition Corp. In May 2011, we entered into a reverse merger transaction, or the Merger, with our predecessor, Radius Health, Inc., a Delaware corporation formed on October 3, 2003, or the Former Operating Company, pursuant to which the Former Operating Company became a wholly-owned subsidiary of ours. Immediately following the Merger, the Former Operating Company was merged with and into us and we assumed the business of the Former Operating Company and changed our name to Radius Health, Inc.

Legal Proceedings

In November 2016, we received notice that in October 2016, Ipsen had initiated arbitration proceedings against us in the International Chamber of Commerce’s International Court of Arbitration. Ipsen’s Request for Arbitration alleges that we breached various provisions of the License Agreement concerning abaloparatide, including with regard to Ipsen's right to co-promote abaloparatide in France and a license from us with respect to Japan. Ipsen seeks declaratory relief, compliance with the License Agreement, damages, costs and fees as a result of the purported breaches, and alleges the monetary value of these claims is approximately €50 million.

In January 2017, we submitted an Answer denying Ipsen's claims and alleging counterclaims against Ipsen for breach of the License Agreement and other declaratory judgment. We asserted, among other things, that Ipsen's claimed rights to co-promote abaloparatide in France and to a license from us with respect to Japan have permanently expired, and that Ipsen has breached the License Agreement by, among other things, allowing certain patents to expire and by purporting to license to a third party certain manufacturing and other rights that we contend Ipsen exclusively licensed to us. We are seeking dismissal of Ipsen's claims, as well as declaratory relief, compliance with the License Agreement, and other damages, costs and fees to be determined by the Arbitral Tribunal.

In February 2017, Ipsen submitted a Reply denying our counterclaims and alleging that we are precluded from asserting them. Given that this matter is at a preliminary stage, we cannot predict or assess the likely outcome of these proceedings.

Investor Information

Financial and other information about us is available on our website at www.radiuspharm.com. We make available on our website, free of charge, copies of our Annual Report on Form 10-K, Quarterly Reports on Form 10-Q, current reports on Form 8-K and amendments to those reports filed or furnished pursuant to Section 13(a) or 15(d) of the Exchange Act as soon as reasonably practicable after we electronically file such material with, or furnish it to, the SEC. In addition, we have previously filed registration statements and other documents with the SEC. Any document we file may be inspected, without charge, at the SEC's public reference room at 100 F Street NE, Washington, DC 20549, or at the SEC's internet address at www.sec.gov. These website addresses are not intended to function as hyperlinks, and the information contained in our website and in the SEC's website is not intended to be a part of this filing. Information related to the operation of the SEC's public reference room may be obtained by calling the SEC at 800-SEC-0330.

ITEM 1A. RISK FACTORS.

Our business faces significant risks and uncertainties. Certain important factors may have a material adverse effect on our business prospects, financial condition and results of operations, and you should carefully consider them. Accordingly, in evaluating our business, we encourage you to consider the following discussion of risk factors, in its entirety, in addition to other information contained in or incorporated by reference into this Annual Report on Form 10-K and our other public filings with the SEC.

Risks Related to Our Business

Risks Related to Our Financial Position and Need for Capital

We are not currently profitable and may never become profitable.

We had net losses of $182.8 million , $101.5 million , and $62.5 million for the years ended December 31, 2016 , 2015 , and 2014 , respectively. As of December 31, 2016 , we had an accumulated deficit of $628.6 million . Until we succeed in developing and then commercializing one or more of our product candidates, we expect to incur substantial losses and may never achieve or maintain profitability. We also expect to continue to incur significant operating and capital expenditures and anticipate that our expenses will increase substantially as we:

- continue to undertake preclinical development and clinical trials for product candidates;
- seek regulatory approvals for product candidates;
- continue to build our commercial infrastructure, including adding internal systems and hiring additional personnel; and
- commercialize abaloparatide-SC or any other product candidates, in each case if approved.

We also expect to experience negative cash flow as we fund our operating losses and capital expenditures. As a result, we will need to generate significant revenues in order to achieve and maintain profitability. Accordingly, unless and until we generate revenues and become profitable, we will need to raise additional capital to continue to operate our business. Our failure to achieve or maintain profitability or to raise additional capital could negatively impact the value of our securities.

We currently have no product revenues and unless we generate revenues and become profitable, we expect that we will need to raise additional capital, which may not be available on favorable terms, if at all, in order to continue operating our business.

To date, we have generated no product revenues. Until, and unless, we receive approval from the U.S. Food and Drug Administration, or FDA, or foreign regulatory authorities for our product candidates, we will not be permitted to sell our drugs and will not have product revenues. Currently, our only product candidates are abaloparatide-SC, abaloparatide-TD, RAD1901 and RAD140, and none of these product candidates have been approved by the FDA or foreign regulatory authorities for sale. In March 2016, we submitted an NDA to the FDA for abaloparatide-SC, which was accepted for filing by the FDA with a PDUFA date of March 30, 2017. Even if our NDA for abaloparatide-SC is approved, we would still expect to incur significant expenses and net losses as we begin our first commercialization efforts for abaloparatide-SC and continue development and commercialization efforts for our other product candidates. Therefore, for the foreseeable future, we will have to fund our operations and capital expenditures with our existing cash and cash equivalents and short and long-term marketable securities, or through strategic financing opportunities, that could include, but are not limited to partnering or other collaboration agreements, future offerings of our equity, royalty-based financing arrangements, and/or the incurrence of debt.

Based upon our cash, cash equivalents and short-term marketable securities balance at December 31, 2016, we believe that, prior to the consideration of revenue from the potential future sales of any of our investigational products that may receive regulatory approval, we have sufficient capital to fund our development plans, U.S. commercial scale-up and other operational activities into 2018. We have based this estimate on assumptions that may prove to be wrong, and we could use up our available capital resources sooner than we currently expect. If we fail to obtain additional capital, we may be unable to complete our planned preclinical and clinical trials and obtain approval of product candidates from the FDA and foreign regulatory authorities. In addition, we could be forced to discontinue product development, reduce or forego sales and marketing efforts for any product candidate that is approved, forego attractive business opportunities or discontinue our operations entirely. Any additional sources of financing may not be available or may not be available on favorable terms and will likely involve the issuance of additional equity securities, which will have a dilutive effect on stockholders. Our future

capital requirements will depend on many factors, including the scope and progress made in our research and development activities and our clinical studies and the expenses associated with our commercialization efforts for abaloparatide-SC.

Raising additional capital may cause dilution to our existing stockholders, restrict our operations or require us to relinquish rights to our technologies or product candidates.

Until such time, if ever, as we can generate substantial product revenues, we expect to finance our cash needs through a combination of collaborations, strategic alliances, licensing arrangements, other marketing and distribution arrangements, equity offerings, royalty-based financing arrangements and debt financings. We do not have any committed external source of funds. To the extent that we raise additional capital through the sale of equity or convertible debt securities, your ownership interest will be diluted, and the terms of these securities may include liquidation or other preferences that adversely affect your rights as a stockholder. Debt financing, if available, may involve agreements that include covenants limiting or restricting our ability to take specific actions, such as incurring additional debt, making capital expenditures or declaring dividends. If we raise additional funds through marketing and distribution arrangements or other collaborations, strategic alliances or licensing arrangements with third parties or royalty-based financing arrangements, we may have to relinquish valuable rights to our technologies, future revenue streams, research programs or product candidates, or we may need to grant licenses on terms that may not be favorable to us. If we are unable to raise additional funds through equity or debt financings when needed, we may be required to delay, limit, reduce or terminate our product development or commercialization efforts or grant rights to develop and market product candidates that we would otherwise prefer to develop and market ourselves.

We are a company with a limited operating history upon which to base an investment decision.

We are a company with a limited operating history and have not demonstrated an ability to perform the functions necessary for the successful commercialization of abaloparatide-SC or any of our other product candidates. The successful commercialization of abaloparatide-SC or any product candidates will require us to perform a variety of functions, including:

- conducting sales and marketing activities for products if approved,
- continuing to undertake preclinical development and clinical trials;
- participating in regulatory approval processes; and
- formulating and manufacturing products.

Our operations have been limited to organizing and staffing our company, acquiring, developing and securing our proprietary technology and undertaking preclinical and clinical trials of our product candidates. These operations provide a limited basis for you to assess our ability to commercialize our product candidates and the advisability of investing further in our securities.

Our financial results may fluctuate from quarter to quarter, which makes our results difficult to predict and could cause our results to fall short of expectations.

Our financial results may fluctuate as a result of a number of factors, many of which are outside of our control. For these reasons, comparing our financial results on a period-to-period basis may not be meaningful, and you should not rely on our past results as an indication of our future performance. Particularly over the near term as we continue to build our commercial capabilities and, if approved, commercialize abaloparatide-SC, our revenues, if any, may fluctuate from quarter to quarter and our future quarterly and annual expenses as a percentage of our revenues may be significantly different from those we have recorded in the past or which we expect for the future. Our financial results in some quarters may fall below expectations. Any of these events as well as the various risk factors listed in this "Risk Factors" section could adversely affect our financial results and cause our stock price to fall.

Our cash and cash equivalents could be adversely affected if the financial institutions in which we hold our cash and cash equivalents fail.

We regularly maintain cash balances at third-party financial institutions in excess of the Federal Deposit Insurance Corporation insurance limit. While we monitor daily the cash balances in the operating accounts and adjust the balances as appropriate, these balances could be impacted, and there could be a material adverse effect on our business, if one or more of the financial institutions with which we deposit fails or is subject to other adverse conditions in the financial or credit markets. To date, we have experienced no loss or lack of access to our invested cash or cash equivalents; however, we can provide no assurance that access to our invested cash and cash equivalents will not be impacted by adverse conditions in the financial and credit markets.

Our investments in marketable securities are subject to market, interest and credit risk that may reduce their value.

The value of our investments in marketable securities may be adversely affected by changes in interest rates, downgrades in the creditworthiness of any bonds we hold, turmoil in the credit markets and financial services industry and by other factors which may result in other than temporary declines in the value of our investments. Decreases in the market value of our marketable securities could have an adverse impact on our statements of financial position, results of operations and cash flow.

We are subject to foreign currency risk.

A significant portion of our clinical trial activities, in addition to our contract manufacturing processes in support of abaloparatide-SC, are conducted outside of the United States and a large portion of the costs incurred with these activities are denominated in the local currency of the country in which the activity is being conducted. As such, these costs could be subject to fluctuations in foreign exchange rates. At present, we do not engage in hedging transactions to protect against uncertainty in future exchange rates between foreign currencies and the U.S. dollar. A decline in the value of the U.S. dollar against currencies in geographies in which we conduct clinical trial or contract manufacturing activities could have a negative impact on our research and development costs, our future inventory valuations, or our future cost of sales. We cannot predict the impact of foreign currency fluctuations, and foreign currency fluctuations in the future may adversely affect our business and our results of operations. For further discussion of our foreign currency risks, see “Item 7A. Quantitative and Qualitative Disclosures About Market Risk”.

An adverse determination in any current or future lawsuits or arbitration proceedings to which we are a party could have a material adverse effect on our business.

We are currently involved in a pending arbitration proceeding. In November 2016, we received notice that in October 2016, Ipsen Pharma SAS, or Ipsen, had initiated arbitration proceedings against us in the International Chamber of Commerce’s International Court of Arbitration. Ipsen’s Request for Arbitration alleges that we breached various provisions of the License Agreement concerning abaloparatide, including with regard to Ipsen's right to co-promote abaloparatide in France and a license from us with respect to Japan. Ipsen seeks declaratory relief, compliance with the License Agreement, damages, costs and fees as a result of the purported breaches, and alleges the monetary value of these claims is approximately €50 million. In January 2017, we submitted an Answer denying Ipsen’s claims and alleging counterclaims against Ipsen for breach of the License Agreement and other declaratory judgment. We asserted, among other things, that Ipsen's claimed rights to co-promote abaloparatide in France and to a license from us with respect to Japan have permanently expired, and that Ipsen has breached the License Agreement by, among other things, allowing certain patents to expire and by purporting to license to a third party certain manufacturing and other rights that we contend Ipsen exclusively licensed to us. In February 2017, Ipsen submitted a Reply denying our counterclaims and alleging that we are precluded from asserting them. We are seeking dismissal of Ipsen’s claims, as well as declaratory relief, compliance with the License Agreement, and other damages, costs and fees to be determined by the Arbitral Tribunal. However, if such defense is unsuccessful, and Ipsen prevails on any of its claims, such an adverse determination could have a material adverse effect on our business, operating results, financial condition and liquidity.

Additionally, we may be the target of claims asserting violations of securities fraud and derivative actions, or other litigation or arbitration proceedings in the future. Any future litigation or arbitration proceedings could result in substantial costs and divert management’s attention and resources. These lawsuits or arbitration proceedings may result in large judgments or settlements against us, any of which could have a material adverse effect on its business, operating results, financial condition and liquidity.

We are also subject to a variety of other types of potential claims, proceedings, investigations and litigation which may be initiated by government agencies or third parties. These include compliance matters, product regulation or safety, taxes, employee benefit plans, employment discrimination, health and safety, environmental, antitrust, customs, import/export, government contract compliance, financial controls or reporting, intellectual property, allegations of misrepresentation, false claims or false statements, commercial claims, claims regarding promotion of our product candidates, or other similar matters. In addition, government investigations related to the use of products, but not the efficacy themselves, may cause reputational harm to us. Negative publicity-whether accurate or inaccurate-about the efficacy, safety or side effects of our product candidates or product categories, whether involving us or a competitor, could materially reduce market acceptance for our product candidates, cause consumers to seek alternatives to our product candidates, result in product withdrawals and cause our stock price to decline. Negative publicity could also result in an increased number of product liability claims, whether or not these claims have a basis in scientific fact. Any such claims, proceedings, investigations or litigation, regardless of the merits, might result in substantial costs, restrictions on product use or sales, or otherwise injure our business.

Risks Related to the Discovery, Development and Commercialization of Our Product Candidates

We are heavily dependent on the success of our investigational product candidate abaloparatide-SC. We cannot be certain that abaloparatide-SC will receive regulatory approval or be successfully commercialized even if we receive regulatory approval.

Abaloparatide-SC is our only product candidate in late-stage clinical development, and our business currently depends heavily on its successful development, regulatory approval and commercialization. We have no drug products for sale currently and may never be able to develop approved and marketable drug products. The research, testing, manufacturing, labeling, approval, sale, marketing and distribution of drug products are subject to extensive regulation by the FDA and foreign regulatory authorities in the United States and other countries, which regulations differ from country to country. We are not permitted to market abaloparatide-SC in the United States unless and until we receive approval of an NDA from the FDA, or in any foreign countries unless and until we receive the requisite approval from regulatory authorities in those foreign countries. In addition, the approval of abaloparatide-TD as a potential line extension to abaloparatide-SC is dependent on the earlier approval of abaloparatide-SC. Obtaining approval of a product candidate is an extensive, lengthy, expensive and uncertain process, and any approval of abaloparatide-SC may be delayed, limited or denied for many reasons, including:

- we may not be able to demonstrate that abaloparatide is safe and effective as a treatment for reduction of fracture risk in women with postmenopausal osteoporosis to the satisfaction of the FDA or foreign regulatory authorities;
- the results of our clinical studies may not meet the level of statistical or clinical significance required for marketing approval;
- the FDA or foreign regulatory authorities may disagree with the number, design, size, conduct or implementation of our clinical studies;
- any clinical research organizations, or CROs, that we have retained or may in the future retain, to conduct clinical studies may take actions outside of our control that materially adversely impact our clinical studies;
- the FDA or foreign regulatory authorities may not accept data generated at our clinical study sites;
- the FDA or foreign regulatory authorities may not find the data from preclinical studies and clinical studies sufficient to demonstrate that abaloparatide's clinical and other benefits outweigh its safety risks;
- the FDA or foreign regulatory authorities may disagree with our interpretation of data from our preclinical studies and clinical studies or may require that we conduct additional studies;
- the FDA or foreign regulatory authorities may not agree with our proposed labeling and may require labeling that undermines or otherwise significantly impairs the commercial value of the product if it were to be approved with such labeling;
- the FDA may require development of a Risk Evaluation and Mitigation Strategy, or REMS, as a condition of approval;
- if our NDA is reviewed by an advisory committee, the FDA may have difficulties scheduling an advisory committee meeting in a timely manner or the advisory committee may recommend against approval of our application or may recommend that the FDA require, as a condition of approval, additional preclinical studies or clinical studies, limitations on approved labeling or distribution and use restrictions; or
- the FDA or foreign regulatory authorities may identify deficiencies in the manufacturing processes or facilities of our third-party manufacturers.

In addition, the FDA or foreign regulatory authorities may change its approval policies or adopt new regulations. For example, on February 15, 2012, we received a letter from the FDA stating that, after internal consideration, the FDA believes that a minimum of 24-month fracture data are necessary for approval of new products for the treatment of postmenopausal osteoporosis. Our abaloparatide-SC pivotal Phase 3 clinical trial is designed to produce fracture data based on an 18-month primary endpoint. Based on our discussions with the FDA, we believe that continued use of the 18-month primary endpoint will be acceptable, provided that our NDA includes the 24-month fracture data derived from the first six months' extension of the abaloparatide 80 µg and placebo groups in our Phase 3 study, which groups received an approved alendronate (generic Fosamax) therapy for osteoporosis management. The NDA that we submitted to the FDA in March 2016 for abaloparatide-SC as a proposed treatment for osteoporosis included the 24-month fracture data. We cannot be certain that the FDA will be supportive of this plan, will not change this approval policy again or will not adopt other approval policies or regulations that adversely affect any NDA that we may submit, the occurrence of any of which may further delay FDA approval.

We cannot assure you that we will receive the approvals necessary to commercialize abaloparatide-SC, or any of our product candidates, including any product candidates we are currently developing or may acquire or develop in the future. In order to obtain FDA approval of abaloparatide-SC, or any product candidate, we must submit to the FDA an NDA demonstrating that the product candidate is safe for humans and effective for its indicated use. This demonstration requires significant research and animal tests, which are referred to as preclinical studies, as well as human tests, which are referred to as clinical trials. Satisfaction of the FDA's regulatory requirements typically takes many years, depends upon the type, complexity and novelty of the product candidate and requires substantial resources for research, development and testing. We cannot predict whether our research and clinical approaches will result in drugs that the FDA considers safe for humans and effective for proposed uses.

In 2007, we entered into a global pharmacovigilance agreement with Teijin Limited, or Teijin, a Japanese pharmaceutical company, that provides for the exchange of information related to serious and non-serious adverse reactions to abaloparatide by patients enrolled in clinical studies. The purpose of the agreement is to enable safety reporting to global health agencies. Teijin has completed a Phase 2 clinical study of abaloparatide-SC in Japan for the treatment of postmenopausal osteoporosis. Should Teijin advise us in accordance with our agreement of a serious adverse event experienced by patients enrolled in their study, we would need to report the serious adverse event to the FDA and the European Medicines Agency, or EMA, which could adversely affect or delay our ability to obtain regulatory approvals in the United States and Europe.

In addition, the FDA or foreign regulatory authorities each has substantial discretion in the drug approval process and may require us to conduct additional preclinical and clinical testing or to perform post-marketing studies. The approval process may also be delayed by changes in government regulation, future legislation or administrative action or changes in FDA policy that occur prior to or during its regulatory review, such as the request we received from the FDA with respect to providing a minimum of 24-month fracture data for approval of abaloparatide-SC. Delays in obtaining regulatory approvals may:

- delay commercialization of, and our ability to derive product revenues from, our product candidates;
- impose costly procedures on us; and
- diminish any competitive advantages that we may otherwise enjoy.

The abaloparatide-SC finished product is a drug/device combination product candidate with both a drug and device component and with the primary mode of action being provided by the investigational drug abaloparatide. Based on our discussions to date with the FDA, we believe that abaloparatide-SC will be regulated as a combination product by the FDA, and both drug and device components will be required for review as part of our NDA submission. In March 2016, we submitted our NDA for abaloparatide-SC to the FDA which was accepted for filing by the FDA with a PDUFA date of March 30, 2017. In addition, there are device-related manufacturing and other regulatory requirements (e.g., current good manufacturing practices, or cGMPs, and adverse event reporting) to which we may be subject by virtue of the product's status as a drug/device combination product. As a result of these factors, we may experience delays in the product development and regulatory review and approval process in seeking a drug/device combination product approval under an NDA.

Even though our NDA for abaloparatide-SC was accepted for filing, the FDA retains complete discretion in deciding whether or not to approve an NDA and there is no guarantee that abaloparatide-SC will be approved for the treatment of women with postmenopausal osteoporosis or any other indication. We may never obtain regulatory approval for abaloparatide-SC, or any of our other product candidates. Failure to obtain FDA approval of abaloparatide-SC, or any of our other product candidates will severely undermine our business by leaving us without a saleable product, and therefore without any source of revenues, until another product candidate can be developed. There is no guarantee that we will ever be able to develop or acquire any other product candidate.

In foreign jurisdictions, we also must receive approval from the appropriate regulatory authorities before we can commercialize any drugs. In November 2015, we submitted an MAA to the EMA which was validated and is currently undergoing active regulatory assessment by the CHMP. Foreign regulatory approval processes generally include all of the risks associated with the FDA approval procedures described above. We cannot assure you that we will receive the approvals necessary to commercialize abaloparatide-SC, or any of our product candidates for sale outside the United States.

Any collaboration arrangements that we may enter into in the future may not be successful, which could adversely affect our ability to develop and commercialize abaloparatide-SC, or any of our other product candidates.

Our product development programs and the potential commercialization of abaloparatide-SC or any of our product candidates will require substantial cash to fund expenses. For some of our product candidates, we may decide to collaborate with pharmaceutical and biotechnology companies for the development and potential commercialization of those product candidates. We will face, to the extent that we decide to enter into collaboration agreements, significant competition in seeking

appropriate collaborators. Moreover, collaboration arrangements are complex and time consuming to negotiate, document and implement. We may not be successful in our efforts to establish and implement collaborations or other alternative arrangements should we so chose to enter into such arrangements.

The terms of any collaborations or other arrangements that we may establish may not be favorable to us. If that were to occur, we may have to curtail the development of a particular product candidate, reduce or delay its development program or one or more of our other development programs, delay its potential commercialization or reduce the scope of our sales or marketing activities, or increase our expenditures and undertake development or commercialization activities at our own expense. If we elect to increase our expenditures to fund development or commercialization activities on our own, we may need to obtain additional capital, which may not be available to us on acceptable terms or at all. If we do not have sufficient funds, we will not be able to bring our product candidates to market and generate product revenue.

Any future collaborations that we enter into may not be successful. The success of our collaboration arrangements will depend heavily on the efforts and activities of our future collaborators. Collaborators generally have significant discretion in determining the efforts and resources that they will apply to these collaborations. If a collaborator fails to provide sufficient effort and resources to a development program, we may not realize the full potential or intended benefit of the collaboration, and the development program may be delayed or curtailed.

Clinical trials are very expensive, time-consuming and difficult to design and implement.

Human clinical trials are very expensive and difficult to design and implement, in part because they are subject to rigorous regulatory requirements. A substantial portion of our abaloparatide development costs is denominated in euros and any adverse movement in the dollar/euro exchange rate will result in increased costs and could require us to raise additional capital to complete the development of our products. The clinical trial process is also time consuming. Furthermore, failure can occur at any stage of the trials, and we could encounter problems that cause us to abandon or repeat clinical trials. The commencement and completion of clinical trials may be delayed by several factors, including:

- changes in government regulation, administrative action or changes in FDA or foreign regulatory authority policy with respect to clinical trials that change the requirements for approval;
- unforeseen safety issues;
- determination of dosing issues;
- lack of effectiveness during clinical trials;
- slower than expected rates of patient recruitment and enrollment;
- failure of sites to comply with requirements for conducting clinical trials;
- inability to monitor patients adequately during or after treatment; and
- inability or unwillingness of medical investigators to follow our clinical protocols.

In addition, we, the FDA, or other equivalent regulatory authorities and ethics committees with jurisdiction over our studies may suspend our clinical trials at any time if it appears that we are exposing participants to unacceptable health risks or if the FDA or foreign regulatory authorities find deficiencies in our regulatory submissions or the conduct of these trials. Therefore, we cannot predict with any certainty the schedule for existing or future clinical trials. Any such unexpected expenses or delays in our clinical trials could increase our need for additional capital, which may not be available on favorable terms or at all.

Most of our investigational product candidates are in early stages of clinical trials.

Except for abaloparatide-SC and abaloparatide-TD, each of our other product candidates (i.e., RAD1901 and RAD140) is in the early stages of development and requires extensive preclinical and clinical testing. We cannot predict with any certainty if or when we might submit an NDA or equivalent application to foreign regulatory authorities for regulatory approval for any of these other product candidates or whether any such NDA or equivalent application would be accepted for filing by the FDA or foreign regulatory authorities or approved if filed.

The results of clinical trials may not support our product candidate claims.

Even if our clinical trials are completed as planned, we cannot be certain that the results will support regulatory approval of our product candidates. Success in preclinical testing and early clinical trials does not ensure that later clinical trials will be successful, and we cannot be sure that the results of later clinical trials will replicate the results of prior clinical trials and preclinical testing. The clinical trial process may fail to demonstrate that our product candidates are safe for humans and effective for proposed uses. This failure would cause us to abandon a product candidate and may delay development of other product candidates. Any delay in, or termination of, our clinical trials will delay the submission of our NDAs to the FDA or equivalent application to foreign regulatory authorities and, ultimately, our ability to commercialize our product candidates and generate product revenues. In addition, our clinical trials to date (other than the ACTIVE Phase 3 Clinical Trial for abaloparatide-SC) have involved small patient populations. Because of the small sample sizes, the results of these clinical trials may not be indicative of future results.

In addition, third parties could conduct clinical trials using the product candidates we license. We would have no control over how these trials are conducted and the results could potentially contradict the results we have obtained, or will obtain from the clinical trials we conduct.

If serious adverse or undesirable side effects are identified during the development of our product candidates, we may need to abandon our development of some of our product candidates.

Undesirable side effects caused by our product candidates could cause us, regulatory authorities, and/or ethics committees to interrupt, delay or halt clinical trials and could result in a more restrictive label or cause the delay or denial of regulatory approval by the FDA or other comparable foreign authorities. It is impossible to predict when or if any of our product candidates will prove effective or safe in humans or will receive regulatory approval, if ever. If our product candidates result in undesirable side effects or have characteristics that are unexpected, we may need to abandon their development. Drug-related side effects could affect patient recruitment or the ability of enrolled patients to complete the trial or result in potential product liability claims. Any of these occurrences may harm our business, financial condition and prospects significantly.

Additionally, if one or more of our product candidates receives marketing approval, and we or others later identify undesirable side effects caused by such products, a number of potentially significant negative consequences could result, including:

- regulatory authorities may withdraw approvals of such product;
- regulatory authorities may require additional warnings on the label;
- regulatory authorities may require us to adopt a Risk Evaluation and Mitigation Strategy, or REMS;
- regulatory authorities may require us to conduct additional post-market studies, including clinical studies, to assess the safety of the product;
- we may be required to create a medication guide outlining the risks of such side effects for distribution to patients;
- we could be sued and held liable for harm caused to patients; and
- our reputation may suffer.

Any of these events could prevent us from achieving or maintaining market acceptance of the particular product candidate, if approved, and could significantly harm our business, results of operations and prospects.

Any product candidate for which we obtain marketing approval could be subject to restrictions or withdrawal from the market and we may be subject to penalties if we fail to comply with regulatory requirements or if we experience unanticipated problems with our products, when and if any of them are approved.

Any product candidate for which we obtain marketing approval, along with the manufacturing processes, distribution processes, post-approval clinical data, labeling, advertising and promotional activities for such product, will be subject to continuing requirements of and review by the FDA and foreign regulatory authorities. These requirements include submissions of safety and other post-marketing information and reports, registration and listing requirements, cGMP requirements relating to quality control, quality assurance and corresponding maintenance of records and documents, and requirements regarding the distribution of drug products, including drug samples to physicians and recordkeeping. Even if we obtain marketing approval of a product candidate, the approval may be subject to limitations on the indicated uses for which the product may be marketed or to the conditions of approval, or contain requirements for costly post-marketing testing and surveillance to monitor the safety and/or efficacy of the product. The FDA closely regulates the post-approval marketing and promotion of drugs to ensure drugs

are marketed only for the approved indications and in accordance with the provisions of the approved labeling. The FDA imposes stringent restrictions on manufacturers' communications regarding off-label use and, if we market our products for other than their approved indications, we may be subject to enforcement action for off-label marketing.

In addition, later discovery of previously unknown problems with our products, manufacturers or manufacturing processes, or failure to comply with regulatory requirements, may yield various results, including:

- restrictions on such products, manufacturers or manufacturing processes;
- restrictions on the labeling or marketing of a product;
- restrictions on product distribution or use;
- requirements to conduct post-marketing clinical trials;
- warning or untitled letters;
- withdrawal of the products from the market;
- refusal to approve pending applications or supplements to approved applications that we submit;
- voluntary or mandatory recall of products and related publicity requirements;
- fines, restitution or disgorgement of profits or revenue;
- suspension or withdrawal of marketing approvals;
- refusal to permit the import or export of our products;
- product seizure; or
- injunctions or the imposition of civil or criminal penalties.

In addition, the FDA's policies may change and additional government regulations may be enacted that could prevent, limit, or delay regulatory approval of our product candidates. We cannot predict the likelihood, nature, or extent of government regulation that may arise from future legislation or administrative action, either in the United States or abroad. If we are slow or unable to adapt to changes in existing requirements or the adoption of new requirements or policies, or if we are not able to maintain regulatory compliance, we may lose any marketing approval that we may have obtained and we may not achieve or sustain profitability, which would adversely affect our business.

The commercial success of any product candidates that we may develop and that may be approved will depend upon the degree of market acceptance by regulators, key opinion leaders, physicians, patients, healthcare payors and others in the medical community.

Even if the FDA or foreign regulatory authorities approves one or more of our product candidates, physicians and patients may not accept and use them. Acceptance and use of any of our products will depend upon a number of factors including:

- perceptions by members of the healthcare community, including physicians and key opinion leaders, about the safety and effectiveness of our drug;
- the approved indicated uses for our product;
- cost-effectiveness of our product relative to competing products;
- availability of coverage and reimbursement for our product from government or other healthcare payors; and
- effectiveness of marketing and distribution efforts by us and our licensees and distributors, if any.

If abaloparatide-SC or any of our other investigational product candidates are commercialized and unexpected adverse events are reported in connection with the use of any of those products, physician and patient acceptance of the product could deteriorate and the commercial success of such product could be adversely affected. We are required to report to the FDA or

similar bodies in other countries events associated with our products relating to death or serious injury. Adverse events could result in additional regulatory controls, such as for the imposition of costly post-approval clinical studies, imposition of a REMS, or revisions to approved labeling which could limit the indications or patient population for a product or could even lead to the withdrawal of a product from the market. Because we expect sales of our current product candidates, if approved, to generate substantially all of our product revenues for the foreseeable future, the failure of these drugs to gain market acceptance or, once gained, a decrease in market acceptance would harm our business and would require us to seek additional financing.

Our ability to successfully commercialize products depends in part on the extent to which coverage and reimbursement for the costs of our products and related treatments will be available in the United States and worldwide from government health administration authorities, private health insurers and other organizations.

Our ability to commercialize abaloparatide-SC or any of our product candidates if approved, alone or with collaborators, will depend in large part on the extent to which coverage and reimbursement will be available post-approval from:

- government and health administration authorities;
- private health maintenance organizations and health insurers; and
- other healthcare payors.

In the United States and internationally, sales of products that we market in the future, and our ability to generate revenues on such sales, are dependent, in significant part, on the availability and level of coverage and reimbursement from third party payors such as state and federal governments, managed care providers and private insurance plans. Private insurers, such as health maintenance organizations and managed care providers, have implemented cost cutting and reimbursement initiatives and likely will continue to do so in the future. These include establishing formularies that govern the drugs and biologics that will be offered and also the out-of-pocket obligations of member patients for such products. In addition, particularly in the United States and increasingly in other countries, we may be required to provide discounts and pay rebates to state and federal governments and agencies in connection with purchases of our products that are reimbursed by such entities. It is possible that future legislation in the United States and other jurisdictions could be enacted which could potentially impact the reimbursement rates for the products we are developing and may develop in the future and also could further impact the levels of discounts and rebates paid to federal and state government entities. Any legislation that impacts these areas, including the ongoing consideration of the repeal and replacement of the ACA and other legislation focused on drug pricing, could impact, in a significant way, our ability to generate revenues from sales of products that, if successfully developed, we bring to market.

Decisions in the European Union on pricing and reimbursement of medicinal products are based upon national rules subject to the control of the Transparency Directive, which aims to ensure the transparency measures established by EU countries to control the pricing and reimbursement of medicinal products. The Transparency Directive defines a series of procedural requirements designed to verify that national pricing and reimbursement decisions do not create obstacles to the pharmaceutical trade within the EU's Internal Market. The competent authorities of each of the 28 EU Member States have adopted individual policies and rules regulating the pricing and reimbursement of medicinal products in their territory. These strategies often vary widely in nature, scope and application. However, a major element that they have in common is an increased move toward reduction in the reimbursement price of medicinal products, a reduction in the number and type of products selected for reimbursement, and an increased preference for generic products over innovative products. These efforts have mostly been executed through these countries' existing price-control methodologies, including price cuts, mandatory rebates, value-based pricing, and reference pricing (i.e., referencing prices in other countries and using those reference prices to set a price). It is increasingly common in many EU Member States for Marketing Authorization Holders to be required, in order to get support for reimbursement under national health schemes and, therefore, practical access to the market to demonstrate the cost-effectiveness or added value benefit of their products as compared to products already subject to pricing and reimbursement in specific countries. In order for drugs to be evaluated positively under such criteria, pharmaceutical companies may need to re-examine, and consider altering, a number of traditional functions relating to the selection, study, and management of drugs, whether currently marketed, under development, or being evaluated as candidates for research and/or development.

Future legislation, including the current versions being considered at the federal and state level in the United States and at the national level in EU Member States, or regulatory actions implementing recent or future legislation may have a significant effect on our business. If government and other healthcare payors do not provide adequate coverage and reimbursement levels for our product candidates, once approved, market acceptance of our products could be reduced. In addition, negotiating prices with government authorities under current and proposed legislation can delay the commercialization of our product candidates.

We may expend our limited resources to pursue a particular product candidate or indication and fail to capitalize on product candidates or indications that may be more profitable or for which there is a greater likelihood of success.

Because we have limited financial and managerial resources, we narrowly focus on research programs and product candidates that we identify for specific indications. As a result, we may forego or delay pursuit of opportunities with other product candidates or for other indications that later prove to have greater commercial potential. Our resource allocation decisions may cause us to fail to capitalize on viable commercial products or profitable market opportunities. Our spending on current and future research and development programs and product candidates for specific indications may not yield any commercially viable products. If we do not accurately evaluate the commercial potential or target market for a particular product candidate, we may relinquish valuable rights to that product candidate through collaboration, licensing or other royalty arrangements in cases in which it would have been more advantageous for us to retain sole development and commercialization rights to such product candidate.

If we experience delays in the enrollment of patients in our clinical trials, our receipt of necessary regulatory approvals could be delayed or prevented.

We may not be able to initiate or continue clinical trials for some of our product candidates if we are unable to locate and enroll a sufficient number of eligible patients to participate in these trials as required by the FDA or foreign regulatory authorities. In addition, many of our competitors have ongoing clinical trials for product candidates that could be competitive with our product candidates, and patients who would otherwise be eligible for our clinical trials may instead enroll in clinical trials of our competitors' product candidates.

Enrollment delays in our clinical trials may result in increased development costs for our product candidates, which would cause the value of the company to decline and limit our ability to obtain additional financing. Our inability to enroll a sufficient number of patients for any of our current or future clinical trials would result in significant delays or may require us to abandon one or more clinical trials altogether.

Risks Related to Our Dependence on Third Parties

Our drug development programs depend upon third-party researchers, investigators and collaborators who are outside our control.

We depend upon independent researchers, investigators and collaborators, to conduct our preclinical studies and clinical trials under agreements with us. These third parties are not our employees and we cannot control the amount or timing of resources that they devote to our programs. Nevertheless, we are responsible for ensuring that each of our studies is conducted in accordance with the applicable protocol, legal, regulatory and scientific standards and requirements, and our reliance on third parties does not relieve us of our regulatory responsibilities. We and our third-party researchers, investigators and collaborators are required to comply with good clinical practice, or GCP, requirements, which are regulations and guidelines enforced by the FDA, the Competent Authorities of the Member States of the European Economic Area, or EEA, and comparable foreign regulatory authorities for all of our products in clinical development. Regulatory authorities enforce these GCPs through periodic inspections of trial sponsors, principal investigators and trial sites. If we or any of our CROs fail to comply with applicable GCPs, the clinical data generated in our clinical trials may be deemed unreliable and the FDA, EMA or other comparable foreign regulatory authorities may require us to perform additional clinical trials before approving our marketing applications. We cannot assure you that upon inspection by a given regulatory authority, such regulatory authority will determine that any of our clinical trials complies with GCP regulations. In addition, our clinical trials must be conducted with product produced under cGMP regulations. Our failure to comply with these regulations may require us to repeat clinical trials, which would delay the regulatory approval process. In addition, these third parties may not assign as great a priority to our programs or pursue them as diligently as we would if we were undertaking such programs ourselves. If outside collaborators fail to devote sufficient time and resources to our drug-development programs, or if their performance is substandard, the approval of our FDA or foreign regulatory authority applications, if any, and our introduction of new drugs, if any, will be delayed. These collaborators may also have relationships with other commercial entities, some of whom may compete with us. If our collaborators assist competitors at our expense, our competitive position would be harmed.

If a regulatory or governmental authority determines that a financial interest in the outcome of the Phase 3 study of abaloparatide-SC by any of the entities who managed our Phase 3 clinical trial affected the reliability of the data from the Phase 3 clinical trial, our ability to use the data for our planned regulatory submissions could be compromised, which could harm our business and the value of our common stock.

The Phase 3 clinical trial for abaloparatide-SC, which we refer to as the ACTIVE clinical trial, and subsequent extension studies, which we refer to as the ACTIVExtend clinical trials, have been managed by Nordic Bioscience Clinical Development VII A/S, or Nordic, at certain clinical sites operated by the Center for Clinical and Basic Research, or CCBR, a leading global CRO with extensive experience in global osteoporosis registration studies. Nordic controls, and holds an ownership interest in,

the local CCBR clinical sites. The clinical trial investigators are employees of CCBR and may also hold an equity interest in the local CCBR clinical trials.

In consideration of Nordic's management of our Phase 3 clinical trial and subsequent extension studies, we agreed to make various cash payments to Nordic denominated in both euros and U.S. dollars over the course of the Phase 3 ACTIVE and ACTIVExtend clinical trials, or the ACTIVE Clinical Trials, equal to a total of up to approximately €53.0 million ($57.5 million) and a total of up to approximately $4.4 million plus up to an additional $5.0 million in aggregate performance incentive payments, payable in cash. We also agreed to sell shares of capital stock to Nordic that were exchanged in May 2011 for 6,443 shares of our series A-5 convertible preferred stock for proceeds of approximately $0.5 million. These shares of our series A-5 convertible preferred stock automatically converted into 28,258 shares of our common stock upon the listing of our common stock on the NASDAQ Global Market. Pursuant to the terms of our agreements with Nordic, we were required to issue to Nordic shares of stock with an aggregate value of up to approximately €44.3 million ($48.1 million) and $0.8 million in consideration of Nordic's management of the ACTIVE Clinical Trials. These shares of stock accrued at a quarterly rate based on the progress of the ACTIVE Clinical Trials and were issuable at a price per share equal to the greater of (1) the fair market value of our common stock as of the applicable accrual date or (2) $81.42 and rounding down the resulting quotient to the nearest whole number. On each of December 31, 2013 and March 31, 2014, our Board of Directors declared a stock dividend to pay all shares of stock that had accrued as of such dates and that were anticipated to accrue through December 31, 2014, representing an aggregate of 682,958 shares of our Series A-6 convertible preferred stock that automatically converted into 2,995,453 shares of our common stock upon the listing of our common stock on the NASDAQ Global Market. Following the completion of our initial public offering of shares of our common stock on June 11, 2014, or our initial public offering, all compensation remaining payable to Nordic in consideration of their management of the ACTIVE Clinical Trials became payable in cash.

The fair market value of our common stock may be subject to wide fluctuations in response to various factors, many of which are beyond our control. Accordingly, the shares of stock that we have issued to Nordic in consideration of Nordic's management of the ACTIVE Clinical Trials may be less than the full value originally anticipated under our agreements with Nordic, assuming Nordic did not expect the fair market value of our stock to fluctuate widely over the term of such agreements. As a result, the total consideration that Nordic received in stock and will receive in cash may be viewed to be below the market price paid by other companies for comparable clinical trial services.

Because of the potential decrease in the value of the common stock issued to Nordic if there was a negative outcome of the ACTIVE Clinical Trials, Nordic, CCBR and the clinical trial investigators may be viewed as having a financial interest in the outcome of the study. We have obtained written acknowledgments from the clinical trial investigators certifying that they have no financial interest in the outcome of the ACTIVE Clinical Trials. However, if the FDA, the EMA, or any other similar regulatory or governmental authority determines that Nordic, CCBR or the clinical trial investigators have a financial interest that affected the reliability of the data from the ACTIVE Clinical Trials, we could be subject to additional regulatory scrutiny and the utility of the ACTIVE Clinical Trials for purposes of our planned regulatory submissions could be compromised, which could have a material adverse effect on our business and the value of our common stock.

We will rely exclusively on third parties to formulate and manufacture our product candidates.

We have no experience in drug formulation or manufacturing and do not intend to establish our own manufacturing facilities. We lack the resources and expertise to formulate or manufacture our own product candidates. We have entered into agreements with contract manufacturers to manufacture our product candidates for use in clinical trial activities. These contract manufacturers are currently our only source for the production and formulation of our product candidates. We may not have sufficient clinical supplies of our product candidates but believe that our contract manufacturers will be able to produce sufficient supply of our product candidates to complete all of the planned clinical studies. If our contract manufacturers are unable to produce, in a timely manner, adequate clinical supplies to meet the needs of our clinical studies, we would be required to seek new contract manufacturers that may require us to modify our finished product formulation and modify or terminate our clinical studies. Any modification of our finished product or modification or termination of our clinical studies could adversely affect our ability to obtain necessary regulatory approvals and significantly delay or prevent the commercial launch of the product if it were to be approved, which would materially harm our business and impair our ability to raise capital. In addition, the facilities and processes and controls used by our contract manufacturers to manufacture our product candidates must be approved by the EMA, and by the FDA pursuant to inspections that will be conducted following our regulatory approval submissions. We do not control the facilities or manufacturing process, and are completely dependent on, our contract manufacturing partners for compliance with cGMPs for manufacture of both active drug substances and finished drug products. If our contract manufacturers cannot successfully manufacture material that conforms to our specifications and the strict regulatory requirements of the FDA or other regulatory authorities, they will not be able to secure and/or maintain regulatory approval for their manufacturing facilities. In addition, we have no control over the ability of our contract manufacturers to maintain adequate quality control, quality assurance and qualified personnel. If the FDA or a comparable

foreign regulatory authority does not approve our contract manufacturers for the manufacture of our product candidates or if they withdraw any such approval in the future, we may need to find alternative manufacturing facilities, which would significantly impact our ability to develop, obtain regulatory approval for or market our product candidates, if approved.

We depend on a number of single source contract manufacturers to supply key components of abaloparatide. For example, we depend on PPL, which has agreed to produce supplies of abaloparatide API to support the abaloparatide-SC and abaloparatide-TD clinical studies and any potential commercial launch. We also depend on Vetter and Ypsomed for the production of finished drug product clinical and commercial supplies of abaloparatide-SC and we depend on 3M for the production of abaloparatide-TD. If our relationship with any of these contract manufacturers is terminated, or if they are unable to produce abaloparatide or related components in required quantities, on a timely basis or at all, and/or in compliance with the terms of our agreements, our business and financial condition would be materially harmed. Because the manufacturing process for abaloparatide-TD requires the use of 3M's proprietary technology, 3M is our sole source for finished clinical trial supplies of abaloparatide-TD. To date, we have not entered into a commercial supply agreement with 3M. If we are not able to negotiate commercial supply terms with 3M, as we depend on 3M for production of abaloparatide-TD, we would be unable to commercialize this product if it were to be approved. Or, if we are forced to accept unfavorable terms for our future relationship with 3M, our business and financial condition would be materially harmed. If abaloparatide-SC or any of our other current product candidates or any product candidates we may develop or acquire in the future receive FDA or foreign regulatory authority approval, we will rely on one or more third-party contractors to manufacture our drugs or related components. Our anticipated future reliance on a limited number of third-party manufacturers exposes us to the following risks:

- We may be unable to identify manufacturers on acceptable terms, or at all, because the number of potential manufacturers is limited and the FDA must approve any replacement contractor. This approval would require new testing and compliance inspections. In addition, a new manufacturer would have to be educated in, or develop substantially equivalent processes for, production of our products after receipt of FDA approval, if any.

- Our third-party manufacturers might be unable to formulate and manufacture our drugs or related components in the volume and of the quality required to meet our clinical needs and commercial needs, if any.

- Our contract manufacturers may not perform as agreed or may not remain in the contract manufacturing business for the time required to supply our clinical trials or to successfully produce, store and distribute our products.

- Drug manufacturers are subject to ongoing periodic unannounced inspection by the FDA and corresponding state agencies to ensure strict compliance with cGMP, and other government regulations and corresponding foreign standards, and failure to comply with cGMP or corresponding foreign standards can result in compliance actions that may limit a manufacturer's production or prohibit a manufacturer from producing some or all products at a facility and/or importing it into the United States or a foreign country. We do not have control over third-party manufacturers' compliance with these regulations and standards.

- If any third-party manufacturer makes improvements in the manufacturing process for our products, any such improvement(s) could be subject to FDA review and prior approval, and we may not own, or may have to share, the intellectual property rights to the innovation.

Each of these risks could delay our clinical trials, the approval, if any, of our product candidates by the FDA or foreign regulatory authorities or the commercialization of our product candidates or result in higher costs or deprive us of potential product revenues.

If we fail to establish an effective distribution process utilizing cold chain logistics for abaloparatide-SC, our business may be adversely affected.

We do not currently have the infrastructure necessary for distributing pharmaceutical products to patients. We will be contracting with a third-party logistics company to warehouse abaloparatide-SC and distribute it to specialty pharmacies and wholesale distributors who will supply abaloparatide-SC to the market. We will require that abaloparatide-SC be maintained at a controlled refrigerated temperature throughout the distribution chain. This distribution chain will require significant coordination among our manufacturing, supply-chain and finance teams, as well as commercial departments, including market access, sales, and marketing. In addition, failure to secure contracts with appropriate pharmacy providers and/or wholesale distributors could negatively impact the distribution of abaloparatide-SC, and failure to coordinate financial systems could negatively impact our ability to accurately report product revenue. If we are unable to effectively establish and manage the distribution process, the commercial launch and sales of abaloparatide-SC will be delayed or severely compromised and our results of operations may be harmed.

Risks Related to Marketing and Sale of Our Products

We currently have limited commercial and medical affairs capabilities and have no experience selling, marketing or distributing products. If we are unable to build these capabilities on our own or through partnerships or collaborations, we may not be able to successfully commercialize abaloparatide-SC, if approved, or any future product candidates or generate product revenue.

We currently are building our commercial and medical affairs capabilities and we have no experience commercializing a pharmaceutical product. We intend to build an internal sales force to market and sell our products to specialists within the target indications, if approved, and also to pursue collaborative arrangements to market and sell our products more broadly within the target indications if approved. Therefore, our future success depends, in part, on our ability to enter into and maintain collaborative relationships for such capabilities, the collaborators' strategic interest in the products under development and such collaborators' ability to successfully market and sell any such products.

In addition, our ability to build effective commercial, medical affairs, marketing, sales, market access, managerial and other non-technical capabilities will depend on a number of factors, including our ability to:

- identify, recruit, hire, train, incentivize and retain a significant number of commercial and medical affairs personnel, including a specialty sales force with appropriate technical expertise;
- train our sales representatives, who will have no prior experience with our company or abaloparatide-SC, to deliver clear and compelling messages within the scope of the approved labeling and in accordance with other applicable FDA requirements regarding abaloparatide-SC and to be credible and persuasive in educating physicians on the appropriate situations to consider prescribing it as set forth in the approved labeling;
- ensure our commercial customer-facing team, including sales, market access, and field logistics professionals, effectively build relationships with their respective customers;
- manage a geographically dispersed national commercial customer-facing organization; and
- manage our significant projected growth and the integration of new personnel.

Building our commercial and medical affairs capabilities may be more expensive and time consuming than we anticipate, requiring us to divert resources from other intended purposes or preventing us from building these capabilities to the desired levels. Any failure or delay in building these capabilities on our own or through partnerships or collaborations will adversely impact the successful commercialization of abaloparatide-SC, or any future product candidate. If we establish a partnership or collaboration for purposes of commercializing abaloparatide-SC, or any future product candidate, the launch of that product candidate would need to be established in conjunction with our partner, which could result in a change in timing of the commercial launch.

In addition, given our existing resources and lack of prior experience in marketing, selling and distributing pharmaceutical products, our initial specialty sales force may be materially smaller than the actual number of sales representatives required to successfully commercialize abaloparatide-SC. As such, we may be required to hire substantially more sales representatives to adequately support the commercialization of abaloparatide-SC.

If we cannot compete successfully for market share against other drug companies, we may not achieve sufficient product revenues and our business will suffer.

The market for our product candidates is characterized by intense competition and rapid technological advances. If abaloparatide-SC or any of our product candidates receives FDA or foreign regulatory authority approval, it will compete with a number of existing and future drugs and therapies developed, manufactured and marketed by others. Existing or future competing products may provide greater therapeutic convenience or clinical or other benefits for a specific indication than our products, or may offer comparable performance at a lower cost. If our products fail to capture and maintain market share, we may not achieve sufficient product revenues and our business will suffer.

We are seeking regulatory approval of abaloparatide-SC for the treatment of women with postmenopausal osteoporosis. In March 2016, we submitted an NDA for the FDA for abaloparatide-SC, which has been accepted for filing by the FDA with a PDUFA date of March 30, 2017. We expect to compete against well-known treatment options, including teriparatide, marketed by Lilly as Forteo/Forsteo. We may also face competition from generic or biosimilar versions teriparatide. For example, a biosimilar version of teriparatide was recently approved in the European Union, although the product is not expected to be launched until the expiration or invalidation of applicable patents covering teriparatide. We are also aware of other companies pursuing development of biosimilar and/or generic versions of teriparatide in the U.S. and EU through various regulatory pathways. The availability of a generic or biosimilar teriparatide on the market would likely exert pricing pressure on the

anabolic class in which abaloparatide-SC would compete. In addition, there are other organizations working to develop new therapies to treat osteoporosis. For example, UCB and Amgen are co-developing an anti-sclerostin anabolic monoclonal antibody for the treatment of osteoporosis, which is currently under review by the FDA with a PDUFA date of July 19, 2017. In order to compete successfully in this market, we will have to demonstrate to physicians and payors that the treatment of osteoporosis with abaloparatide-SC is worthwhile and is a better alternative to existing or new therapies.

We face significant competition from many fully integrated pharmaceutical companies and smaller companies that are collaborating with larger pharmaceutical companies, academic institutions, government agencies and other public and private research organizations. Many of these competitors have compounds already approved or in development. In addition, many of these competitors, either alone or together with their collaborative partners, operate larger research and development programs or have substantially greater financial resources than we do, as well as significantly greater experience in:

- developing drugs;
- undertaking preclinical testing and human clinical trials;
- obtaining FDA and other regulatory approvals of drugs;
- formulating and manufacturing drugs; and
- launching, marketing and selling drugs.

Developments by competitors may render our products or technologies obsolete or non-competitive.

The biotechnology and pharmaceutical industries are intensely competitive and subject to rapid and significant technological change. Some of the drugs that we are attempting to develop, such as our investigational product candidates abaloparatide-SC, abaloparatide-TD, RAD1901 and RAD140, will have to compete against existing therapies if they are approved. In addition, a large number of companies are pursuing the development of pharmaceuticals that target the same diseases and conditions that we are targeting. We face competition from pharmaceutical and biotechnology companies in the United States and abroad. In addition, companies doing business in different but related fields represent substantial competition. Many of these organizations competing with us have substantially greater capital resources, larger research and development staffs and facilities, longer drug development history in obtaining regulatory approvals, and greater manufacturing and marketing capabilities than we do. These organizations also compete with us to attract qualified personnel and parties for acquisitions, joint ventures or other collaborations, and therefore, we may not be able to hire or retain qualified personnel to run all facets of our business. These risks could render our products or technologies obsolete or non-competitive.

We may incur substantial liabilities and may be required to limit commercialization of our products in response to product liability lawsuits.

The testing and marketing of medical products entail an inherent risk of product liability. Even if one of our investigational product candidates is approved by the FDA or foreign regulatory authorities, if we cannot successfully defend ourselves against product liability claims, we may incur substantial liabilities or be required to limit commercialization of our products. Our inability to obtain sufficient product liability insurance at an acceptable cost to protect against potential product liability claims could prevent or inhibit the commercialization of pharmaceutical products we develop, alone or with collaborators.

Risks Related to Our Intellectual Property

If we fail to comply with our obligations in our intellectual property licenses with third parties, we could lose license rights that are important to our business.

We are a party to a number of intellectual property license agreements with third parties and expect to enter into additional license agreements in the future. Our existing license agreements impose, and we expect that any future license agreements will impose, various diligence, milestone payment, royalty, insurance and other obligations on us. If we fail to comply with these obligations, our licensors may have the right to terminate these agreements, in which event we might not be able to develop and market any product that is covered by these agreements. Termination of these licenses or reduction or elimination of our licensed rights may result in our having to negotiate new or reinstated licenses with less favorable terms. The occurrence of such events could materially harm our business.

In November 2016, we received notice that in October 2016, Ipsen initiated arbitration proceedings against us in the International Chamber of Commerce’s International Court of Arbitration. Ipsen’s Request for Arbitration alleges that we breached various provisions of the License Agreement concerning abaloparatide, including with regard to Ipsen's right to co-

promote abaloparatide in France and a license from us with respect to Japan. Ipsen seeks declaratory relief, compliance with the License Agreement, damages, costs and fees as a result of the purported breaches, and alleges the monetary value of these claims is approximately €50 million. In January 2017, we submitted an Answer denying Ipsen's claims and alleging counterclaims against Ipsen for breach of the License Agreement and other declaratory judgment. We asserted, among other things, that Ipsen's claimed rights to co-promote abaloparatide in France and to a license from us with respect to Japan have permanently expired, and that Ipsen has breached the License Agreement by, among other things, allowing certain patents to expire and by purporting to license to a third party certain manufacturing and other rights that we contend Ipsen exclusively licensed to us. In February 2017, Ipsen submitted a Reply denying our counterclaims and alleging that we are precluded from asserting them. We are seeking dismissal of Ipsen's claims, as well as declaratory relief, compliance with the License Agreement, and other damages, costs and fees to be determined by the Arbitral Tribunal. Given that this matter is at a preliminary stage, we cannot predict or assess the likely outcome of these proceedings.

If our efforts to protect our intellectual property related to abaloparatide-SC, abaloparatide-TD, RAD1901 and/or RAD140 fail to adequately protect these assets or if we are unable to secure all necessary intellectual property, we may lose the ability to license or successfully commercialize one or more of these candidates.

Our commercial success is significantly dependent on intellectual property related to our portfolio of product candidates. We are either the licensee or assignee of numerous issued and pending patent applications that cover various aspects of our assets, including abaloparatide-SC, abaloparatide-TD, RAD1901 and RAD140.

Patents covering abaloparatide as a composition of matter have been issued in the United States (U.S. Patent No. 5,969,095) and several additional countries. Because the abaloparatide composition of matter patent was filed in 1996, it expired in 2016 in the United States, and additional countries where it had issued. Prior to its expiration, European Patent No. 0847278, which was included in the license from Ipsen and claimed the composition of matter of abaloparatide, lapsed due to Ipsen's failure to pay annuities. Prior to expiration, we pursued restoration of those patent rights in various countries. As a result of the lapse and expiration of patent rights, we believe that some of Ipsen's rights under our license agreement with Ipsen have terminated. We are currently involved in a pending arbitration proceeding with Ipsen regarding these Ipsen rights and related terms of our license agreement.

We and Ipsen are also co-assignees to U.S. Patent No. 7,803,770 that we believe provides exclusivity until October 3, 2027 and may be extended to March 26, 2028 in the United States (not including any Hatch-Waxman patent term extension) for the method of treating osteoporosis with the intended therapeutic dose for abaloparatide-SC. We have received an intent to grant notice for a closely-related case in the EPO. This patent will also have an expiration date of October 3, 2027, absent any issued SPCs.

We and Ipsen are also co-assignees to U.S. Patent No. 8,148,333 that we believe provides exclusivity until 2027 in the United States (not including any Hatch-Waxman patent term extension) for the intended therapeutic formulation for abaloparatide-SC.

We and 3M are co-assignees to several foreign and corresponding U.S. patent applications with the earliest priority date of April 22, 2011, which cover various aspects of abaloparatide for microneedle application. Any issued patents resulting from these applications will expire in 2032. However, pending patent applications in the United States and elsewhere may not issue since the interpretation of the legal requirements of patentability in view of claimed inventions are not always predictable. Additional intellectual property covering abaloparatide-TD technology exists in the form of proprietary information protected as trade secrets. These can be accidentally disclosed to, independently derived by or misappropriated by competitors, possibly reducing or eliminating the exclusivity advantages of this form of intellectual property, thereby allowing those competitors more rapid entry into the marketplace with a competitive product, which reduces our advantage with abaloparatide-TD. In addition, trade secrets may in some instances become publicly available through required disclosures in regulatory files. Alternatively, competitors may sometimes reverse engineer a product once it becomes available on the market. Even where a competitor does not use an identical technology for the delivery of abaloparatide, it is possible that they could achieve an equivalent or even superior result using another technology. Such occurrences could lead to either one or more alternative competitor products becoming available on the market and/or one or more generic competitor products on the market gaining market share and causing a corresponding decrease in market share and/or price for abaloparatide-TD even if it were to be successfully developed and approved by the FDA.

Patents covering RAD1901 as a composition of matter, as well as the use of RAD1901 for the treatment of estrogen-dependent breast cancer, have been issued in the United States, Canada, Australia, Japan and Europe, and are pending in India. The RAD1901 composition of matter patents in the United States expire in 2023 and may be extended to 2026 (not including any Hatch-Waxman patent term extension). One patent has been issued in the United States (U.S. Patent No. 8,933,130) for treating vasomotor disturbances or hot flashes on January 13, 2015 (statutory term expires on June 22, 2027, and may be extended to October 19, 2031 with 1,580 days of patent term adjustment due to delays in patent prosecution by the USPTO).

Another patent application relating to methods of treating vasomotor symptoms and clinical dosage strengths using RAD1901 has been allowed in the United States. When issued, this patent will have a normal expiry of May 12, 2031, not including any Hatch-Waxman patent term extension. Additional patent applications relating to methods of treating vasomotor symptoms and clinical dosage strengths using RAD1901 have been issued in Canada, Europe, and Mexico, and are pending in Canada and Europe. Pending patent applications in the United States and elsewhere may not issue since the interpretation of the legal requirements of patentability in view of any claimed invention before a patent office are not always predictable. As a result, we could encounter challenges or difficulties in building, maintaining and/or defending our intellectual property both in the United States and abroad.

Patent applications covering RAD140 and other selective androgen receptor modulator compounds have been granted in the United States, Europe, Canada, Mexico, Japan and Australia, and are pending in Brazil and India. The RAD140 composition of matter patents expire in 2029 in the United States (not including any Hatch-Waxman patent term extension) and additional countries if and when they issue.

Since patents are technical legal documents that are frequently subject to intense litigation pressure, there is risk that even if one or more patents related to our products does issue and is asserted that the patent(s) will be found invalid, unenforceable and/or not infringed when subject to said litigation. Finally, the intellectual property laws and practices can vary considerably from one country to another and also can change with time. As a result, we could encounter challenges or difficulties in building, maintaining and defending our intellectual property both in the United States and abroad.

We may become party to, or threatened with, future adversarial proceedings or litigation regarding intellectual property rights with respect to patents issued or licensed to us, including interference proceedings before the USPTO. Third parties also may assert infringement claims against us. If we are found to infringe a third party's intellectual property rights, we could be required to obtain a license from such third party to continue developing and marketing our products and technology. However, we may not be able to obtain any required license on commercially reasonable terms or at all. Even if we were able to obtain a license, it could be non-exclusive, thereby giving our competitors access to the same technologies licensed to us. We could be forced, including by court order, to cease commercializing the infringing technology or product. In addition, we could be found liable for monetary damages. A finding of infringement could prevent us from commercializing our product candidates or force us to cease some of our business operations, which could materially harm our business. Claims that we have misappropriated the confidential information or trade secrets of third parties could have a similar negative impact on our business. For example, we are aware of a patent issued in the United States claiming the use of RAD1901 for an indication we are not pursuing and a patent application filed with the USPTO that could be relevant to the use of RAD1901 to treat indications for which we are developing RAD1901. If a patent issues from this patent application with claims covering the use of RAD1901 to treat indications for which we are developing RAD1901, we may need to license the patent in order to commercialize RAD1901 specifically for the treatment of such indications even if RAD1901 were successfully developed and approved. We cannot assure you that we will be able to secure a license on reasonable terms, if at all. If we need a license of such patent in order to commercialize RAD1901 and are unable to secure one on reasonable terms, our business would be materially harmed.

If we are unable to obtain and maintain patent protection for our technology and products, or if our licensors are unable to obtain and maintain patent protection for the technology or products that we license from them, our competitors could develop and commercialize technology and products similar or identical to ours, and our ability to successfully commercialize our technology and products may be adversely affected.

Our success depends in large part on our and our licensors' ability to obtain and maintain patent protection in the United States and other countries with respect to our proprietary technology and products. In some circumstances, we may not have the right to control the preparation, filing and prosecution of patent applications, or to maintain the patents, covering technology or products that we license from third parties. Therefore, we cannot be certain that these patents and applications will be prosecuted and enforced in a manner consistent with the best interests of our business. In addition, if third parties who license patents to us fail to maintain these patents, or lose rights to those patents, the rights we have licensed may be reduced or eliminated.

The patent position of biotechnology and pharmaceutical companies generally is highly uncertain, involves complex legal and factual questions and has in recent years been the subject of much litigation. As a result, the issuance, scope, validity, enforceability and commercial value of our and our licensors' patent rights are highly uncertain. Our and our licensors' pending and future patent applications may not result in patents being issued that protect our technology or products or that effectively prevent others from commercializing competitive technologies and products. Changes in either the patent laws or interpretation of the patent laws in the United States and other countries may diminish the value of our patents or narrow the scope of our patent protection. The laws of foreign countries may not protect our rights to the same extent as the laws of the United States. Assuming the other requirements for patentability are met, in the United States, prior to March 16, 2013, the first to make the claimed invention was entitled to the patent, or a "first-to-invent" system, while outside the United States, the first to file a patent application is entitled to the patent, or a "first-to-file" system. With the implementation of the Leahy-Smith America

Invents Act, the United States now has a first-to-file system for patent applications filed on or after March 16, 2013. We may become involved in opposition, interference or derivation proceedings challenging our patent rights or the patent rights of others. Publications of discoveries in the scientific literature often lag behind the actual discoveries, and patent applications in the United States and other jurisdictions are typically not published until 18 months after filing, or in some cases not at all. Therefore, we cannot be certain that we or our licensors were the first to make the inventions claimed in our owned and licensed patents or pending patent applications, or that we or our licensors were the first to file for patent protection of such inventions. An adverse determination in any such proceeding could reduce the scope of, or invalidate our patent rights, allow third parties to commercialize our technology or products and compete directly with us, without payment to us, or result in our inability to manufacture or commercialize products without infringing third-party patent rights.

Even if our owned and licensed patent applications issue as patents, they may not issue in a form that will provide us with any meaningful protection, prevent competitors from competing with us or otherwise provide us with any competitive advantage. Our competitors may be able to circumvent our owned or licensed patents by developing similar or alternative technologies or products in a non-infringing manner. The issuance of a patent is not conclusive as to its scope, validity or enforceability, and our owned and licensed patents may be challenged in the courts or patent offices in the United States and abroad. Any challenges may result in patent claims being narrowed, invalidated or held unenforceable, which could limit our ability to stop or prevent us from stopping others from using or commercializing similar or identical technology and products, or limit the duration of the patent protection of our technology and products. Given the amount of time required for the development, testing and regulatory review of new product candidates, patents protecting such candidates might expire before or shortly after such candidates are approved or commercialized. As a result, our owned and licensed patents may not provide us with sufficient rights to exclude others from commercializing products similar or identical to ours.

Payments, fees, submissions and various additional requirements must be met in order for pending patent applications to advance in prosecution and issued patents to be maintained. Rigorous compliance with these requirements is essential to procurement and maintenance of patents integral to our product portfolio.

Periodic maintenance fees, renewal fees, annuity fees and various other governmental fees on patents and/or patent applications will come due for payment periodically throughout the lifecycle of patent applications and issued patents. In order to help ensure that we comply with any required fee payment, documentary and/or procedural requirements as they might relate to any patents for which we are an assignee or co-assignee, we employ competent legal help and related professionals as needed to comply with those requirements. Our outside patent counsel uses Computer Packages, Inc. for patent annuity payments. We depend on Eisai to comply with any required fee payment, documentary and/or procedural requirements as they might relate to any patents we have licensed from them. Failure to meet a required fee payment, document production or procedural requirement can result in the abandonment of a pending patent application or the lapse of an issued patent. In some instances, the defect can be cured through late compliance but there are situations where the failure to meet the required event cannot be cured. Any failures could compromise the intellectual property protection around our preclinical or clinical candidates and possibly weaken or eliminate our ability to protect our eventual market share for that product.

If we are unable to protect the confidentiality of our trade secrets, our business and competitive position would be harmed.

In addition to our patented technology and products, we rely on trade secrets, including unpatented know-how, technology and other proprietary information, to maintain our competitive position. We seek to protect these trade secrets, in part, by entering into non-disclosure and confidentiality agreements with parties that have access to our trade secrets, such as our corporate collaborators, outside scientific collaborators, sponsored researchers, contract manufacturers, consultants, advisors and other third parties. We also enter into confidentiality and invention or patent assignment agreements with our employees and consultants. However, any of these parties may breach the agreements and disclose our proprietary information, and we may not be able to obtain adequate remedies for any breaches. Enforcing a claim that a party illegally disclosed or misappropriated a trade secret is difficult, expensive and time-consuming, and the outcome is unpredictable. In addition, some courts inside and outside the United States are less willing or unwilling to protect trade secrets. If any of our trade secrets were to be lawfully obtained or independently developed by a competitor, we would have no right to prevent them from using that technology or information to compete with us. If any of our trade secrets were to be disclosed to, or independently developed by a competitor, our competitive position would be harmed.

If we infringe the rights of third parties, we could be prevented from selling products and could be forced to pay damages and defend against litigation.

If our products, methods, processes and other technologies infringe the proprietary rights of other parties, we could incur substantial costs and may have to:

- obtain licenses, which may not be available on commercially reasonable terms, if at all;

- abandon an infringing drug candidate;
- redesign our products or processes to avoid infringement;
- stop using the subject matter claimed in the patents held by others;
- pay damages; or
- defend litigation or administrative proceedings which may be costly whether we win or lose, which could result in a substantial diversion of our financial and management resources.

We may become involved in lawsuits to protect or enforce our patents, which could be expensive, time consuming and unsuccessful.

Competitors may infringe our patents. To counter infringement or unauthorized use, we may be required to file infringement claims, which can be expensive and time consuming. In addition, in an infringement proceeding, a court may decide that a patent of ours is invalid and/or unenforceable, or may refuse to stop the other party from using the technology at issue on the grounds that our patents do not cover the technology in question. An adverse result in any litigation proceeding could put one or more of our patents at risk of being invalidated and/or interpreted narrowly. Furthermore, because of the substantial amount of discovery required in connection with intellectual property litigation, there is a risk that some of our confidential information could be compromised by disclosure during this type of litigation. In addition, our licensors may have rights to file and prosecute these types of claims, and we may be reliant on them to do so.

We may be subject to claims that our employees have wrongfully used or disclosed alleged trade secrets of their former employers.

Some of our employees were previously employed at universities or other biotechnology or pharmaceutical companies, including our competitors or potential competitors. Although we try to ensure that our employees do not use the proprietary information or know-how of others in their work for us, we may be subject to claims that we or these employees have used or disclosed intellectual property, including trade secrets or other proprietary information, of any such employee's former employer. Litigation may be necessary to defend against these claims. If we fail in defending any such claims, in addition to paying monetary damages, we may lose valuable intellectual property rights or personnel. Even if we are successful in defending against such claims, litigation could result in substantial costs and be a distraction to management.

Intellectual property litigation could cause us to spend substantial resources and distract our personnel from their normal responsibilities.

Even if resolved in our favor, litigation or other legal proceedings relating to intellectual property claims may cause us to incur significant expenses, and could distract our technical and management personnel from their normal responsibilities, delaying the development of our product candidates. In addition, there could be public announcements of the results of hearings, motions or other interim proceedings or developments, and if securities analysts or investors perceive these results to be negative, it could have a substantial adverse effect on the price of our common stock. Litigation or other proceedings could substantially increase our operating losses and reduce our resources available for development activities. We may not have sufficient financial or other resources to adequately conduct any litigation or proceedings. Some of our competitors may be able to sustain the costs of any litigation or proceedings more effectively than we can because of their substantially greater financial resources. Uncertainties resulting from the initiation and continuation of patent litigation or other proceedings could have a material adverse effect on our ability to compete in the marketplace.

Risks Related to Legislation and Administrative Actions

Healthcare reform may have a material adverse effect on our industry and our results of operations.

From time to time, legislation is implemented to reign in rising healthcare expenditures. In March 2010, the Patient Protection and Affordable Care Act, as amended by the Health Care and Education Reconciliation Act, or ACA, was enacted. ACA includes a number of provisions affecting the pharmaceutical industry, including annual, non-deductible fees on any entity that manufactures or imports some types of branded prescription drugs and biologics and increases in Medicaid rebates owed by manufacturers under the Medicaid Drug Rebate Program. In addition, among other things, ACA also establishes a new Patient-Centered Outcomes Research Institute to oversee, identify priorities and conduct comparative clinical effectiveness research. In addition, other legislative changes have been proposed and adopted since ACA was enacted, which also may impact our business. On August 2, 2011, the President signed into law the Budget Control Act of 2011, or BCA, which, among other things, created the Joint Select Committee on Deficit Reduction to recommend proposals in spending reductions to Congress. The Joint Select Committee did not achieve its targeted deficit reduction of at least $1.2 trillion for the years 2013

through 2021, triggering the legislation's automatic reduction to several government programs. These reductions include aggregate reductions to Medicare payments to providers of 2% per fiscal year, which went into effect on April 1, 2013 and, due to subsequent legislative amendments, will remain in effect through 2025 unless additional Congressional action is taken. In January 2013, the American Taxpayer Relief Act of 2012, or ATRA, was enacted, which among other things, further reduced Medicare payments to several providers, including hospitals, imaging centers and cancer treatment centers. The full impact on our business of these laws is uncertain. We cannot predict whether other legislative changes will be adopted, if any, or how such changes would affect the pharmaceutical industry generally or our business in particular.

We expect that additional state and federal healthcare reform measures will be adopted in the future, any of which could limit the amounts that federal and state governments will pay for healthcare products and services, which could result in reduced demand for our product candidates once approved or additional pricing pressures, and may adversely affect our operating results. Such legislation may also reduce our flexibility in setting prices for our product candidates, or in taking price increases.

We are subject to healthcare laws, regulation and enforcement, and our failure to comply with those laws could have a material adverse effect on our results of operations and financial conditions.

We are subject to several healthcare regulations and enforcement by the federal government and the states and foreign governments in which we conduct our business. The laws that may affect our ability to operate include:

- the federal Health Insurance Portability and Accountability Act of 1996, as amended by the Health Information Technology for Economic and Clinical Health Act, which governs the conduct of various electronic healthcare transactions and protects the security and privacy of protected health information;

- the federal healthcare programs' Anti-Kickback Statute, which prohibits, among other things, persons from knowingly and willfully soliciting, receiving, offering or paying remuneration, directly or indirectly, in exchange for or to induce either the referral of an individual for, or the purchase, order or recommendation of, any good or service for which payment may be made under federal healthcare programs such as the Medicare and Medicaid programs. A person or entity does not need to have actual knowledge of the federal Anti-Kickback Statute or specific intent to violate it to have committed a violation; in addition, the government may assert that a claim including items or services resulting from a violation of the federal Anti-Kickback Statute constitutes a false or fraudulent claim for purposes of the False Claims Act;

- federal false claims laws, which prohibit, among other things, individuals or entities from knowingly presenting, or causing to be presented, claims for payment from Medicare, Medicaid, or other third-party payers that are false or fraudulent;

- federal criminal laws that prohibit executing a scheme to defraud any healthcare benefit program or making false statements relating to healthcare matters. Similar to the federal Anti-Kickback Statute, a person or entity does not need to have actual knowledge of the federal Anti-Kickback Statute or specific intent to violate it to have committed a violation;

- the federal Physician Payment Sunshine Act, or the Sunshine Act, requires applicable manufacturers of covered drugs to report payments and other transfers of value to physicians and teaching hospitals, and ownership and investment interests held by physicians and their immediate family members. Manufacturers are required to submit reports to the government by the 90th day of each calendar year; and

- state law equivalents of each of the above federal laws, such as anti-kickback and false claims laws which may apply to items or services reimbursed by any third-party payer, including commercial insurers; state laws that require pharmaceutical companies to comply with the industry's voluntary compliance guidelines and the applicable compliance guidance promulgated by the federal government or otherwise restrict payments that may be made to healthcare providers and other potential referral sources; state laws that require drug manufacturers to report information related to payments and other transfers of value to physicians and other healthcare providers or marketing expenditures; and state laws governing the privacy and security of health information in certain circumstances, many of which differ from each other in significant ways and may not have the same effect, thus complicating compliance efforts.

Our operations and future commercial activities in connection with any product candidate that is approved will be subject to comprehensive compliance obligations under state and federal fraud and abuse, false claims, physician payment transparency laws and government pricing regulations, as described above. If we are found to be in violation of these regulations, we may be

subject to penalties, including civil and criminal penalties, damages, fines, the curtailment or restructuring of our operations, the exclusion from participation in federal and state healthcare programs and imprisonment, any of which could adversely affect our ability to operate our business and our financial results.

We may be exposed to liability claims associated with the use of hazardous materials and chemicals.

Our research and development activities may involve the controlled use of hazardous materials and chemicals. Although we believe that our safety procedures for using, storing, handling and disposing of these materials comply with federal, state and local laws and regulations, we cannot completely eliminate the risk of accidental injury or contamination from these materials. In the event of such an accident, we could be held liable for any resulting damages and any liability could materially adversely affect our business, financial condition and results of operations. In addition, the federal, state and local laws and regulations governing the use, manufacture, storage, handling and disposal of hazardous or radioactive materials and waste products may require us to incur substantial compliance costs that could materially adversely affect our business, financial condition and results of operations.

The potential U.K. exit from the European Union as a result of the recent U.K. referendum could harm our business, financial condition or results of operations.

On June 23, 2016, the U.K. affirmatively voted in a non-binding referendum advising for the exit of the U.K. from the European Union, commonly referred to as the "Brexit". The referendum is non-binding; however, if passed into law, negotiations would commence to determine the future terms of the U.K.'s relationship with the European Union, including the terms of trade between the U.K. and the European Union. The effects of Brexit will depend on any agreements the U.K. makes to retain access to European Union markets either during a transitional period or more permanently. Brexit could lead to legal uncertainty and potentially divergent national laws and regulations as the U.K. determines which European Union laws to replace or replicate.

The announcement of Brexit caused significant volatility in global stock markets and currency exchange rate fluctuations that resulted in the strengthening of the U.S. dollar against foreign currencies in which we conduct business. The strengthening of the U.S. dollar relative to other currencies may adversely affect our operating results. The announcement of Brexit and the withdrawal of the U.K. from the European Union have had and may continue to have a material adverse effect on global economic conditions and the stability of global financial markets, and may significantly reduce global market liquidity. Any of these effects of Brexit, among others, could adversely affect our business, financial condition, operating results and cash flows.

Any delay to the PDUFA date for our abaloparatide-SC NDA could adversely affect our business, financial condition or results of operations.

While PDUFA dates are based on goals to which FDA agreed under the Prescription Drug User Fee Act, such dates are not binding on the agency. Any delay in the PDUFA date could, in addition to the delay of any potential sales revenue, cause us to incur financial loses, including related to the costs of hiring and maintaining a sales force for the anticipated commercial launch of abaloparatide-SC following a potential March 30, 2017 approval date. Depending on the length of any such potential delay, these financial losses could be significant.

Risks Related to Employee Matters and Managing Growth

We have recently increased the size of our organization, and will need to continue to increase the size of our organization. We may encounter difficulties with managing our growth, which could adversely affect our results of operations.

As of December 31, 2016, we employed approximately 240 employees. Although we have already added several capabilities, we will need to add additional qualified personnel and resources if the NDA for abaloparatide-SC is approved for marketing and we establish a commercial sales force. Our current infrastructure will be inadequate to support these future efforts and expected growth. In particular, we will have to develop internal sales, marketing, and distribution capabilities if we decide to market any drug that we may successfully develop, including abaloparatide-SC. Future growth will impose significant added responsibilities on members of management, including the need to identify, recruit, maintain and integrate additional employees, and may take time away from running other aspects of our business, including development and commercialization of our product candidates.

Our future financial performance and our ability to commercialize our product candidates and to compete effectively will depend, in part, on our ability to manage any future growth effectively. In particular, as our commercialization plans and strategies develop, we will need to recruit and train a substantial number of sales and marketing personnel and expect to need to expand the size of our employee base for managerial, operational, financial and other resources. To that end, we must be able to:

- manage our development efforts effectively;

- integrate additional management, administrative and manufacturing personnel;
- build a marketing and sales organization; and
- maintain sufficient administrative, accounting and management information systems and controls.

We may not be able to accomplish these tasks or successfully manage our operations and, accordingly, may not achieve our research, development, and commercialization goals. Our failure to accomplish any of these goals could harm our financial results and prospects.

As we evolve from a company primarily involved in drug discovery and development into one that is also involved in the commercialization of pharmaceutical products, we may have difficulty managing our growth and expanding our operations successfully.

Our success will depend upon the expansion of our operations and the effective management of our growth, and if we are unable to manage this growth effectively, our business will be harmed. We are expanding, and will continue to expand, our development, regulatory, manufacturing, quality, distribution, sales and marketing capabilities. As part of this expansion, we expect we will need to manage additional relationships with various collaborators, suppliers and other organizations. Our ability to manage our operations and growth requires us to continue to improve our operational, financial and management controls, reporting systems and procedures. For example, some jurisdictions, such as the District of Columbia, have imposed licensing requirements for sales representatives. In addition, the District of Columbia and the Commonwealth of Massachusetts, as well as the federal government by way of the Sunshine Act, have established reporting requirements that would require public reporting of compensation and other "transfers of value" paid to health care professionals and teaching hospitals, as well as ownership and investment interests held by such professionals and their immediate family members. Because the reporting requirements vary in each jurisdiction, compliance will be complex and expensive and may create barriers to entering the commercialization phase. The need to build new systems as part of our growth could place a strain on our administrative and operational infrastructure. We may not be able to make improvements to our management information and control systems in an efficient or timely manner and may discover deficiencies in existing systems and controls. Such requirements may also impact our opportunities to collaborate with physicians at academic research centers as new restrictions on academic-industry relationships are put in place. In the past, collaborations between academia and industry have led to important new innovations, but the new laws may have an effect on these activities. While we cannot predict whether any legislative or regulatory changes will have negative or positive effects, they could have a material adverse effect on our business, financial condition and potential profitability.

We may enter into or seek to enter into business combinations and acquisitions which may be difficult to integrate, disrupt our business, divert management attention or dilute stockholder value.

We may enter into business combinations and acquisitions. We have limited experience in making acquisitions, which are typically accompanied by a number of risks, including:

- the difficulty of integrating the operations and personnel of the acquired companies;
- the potential disruption of our ongoing business and distraction of management;
- the potential for unknown liabilities and expenses;
- the failure to achieve the expected benefits of the combination or acquisition;
- the maintenance of acceptable standards, controls, procedures and policies; and
- the impairment of relationships with employees as a result of any integration of new management and other personnel.

If we are not successful in completing acquisitions that we may pursue in the future, we would be required to reevaluate our business strategy and we may have incurred substantial expenses and devoted significant management time and resources in seeking to complete the acquisitions. In addition, we could use substantial portions of our available cash as all or a portion of the purchase price, or we could issue additional securities as consideration for these acquisitions, which could cause our stockholders to suffer significant dilution.

We rely on key executive officers and scientific and medical advisors, and their knowledge of our business and technical expertise would be difficult to replace.

We are highly dependent on our chief executive officer and our principal scientific, regulatory and medical advisors. We do not have "key person" life insurance policies for any of our officers. The loss of the technical knowledge and management and industry expertise of any of our key personnel could result in delays in product development, loss of customers and sales and diversion of management resources, which could adversely affect our operating results.

If we are unable to hire additional qualified personnel, our ability to grow our business may be harmed.

We will need to hire additional qualified personnel with expertise in preclinical testing, clinical research and testing, government regulation, formulation and manufacturing and sales and marketing. We compete for qualified individuals with numerous biopharmaceutical companies, universities and other research institutions. Competition for such individuals is intense, and we cannot be certain that our search for such personnel will be successful. Attracting and retaining qualified personnel will be critical to our success.

Significant disruptions of information technology systems or breaches of data security could adversely affect our business.

Our business is increasingly dependent on critical, complex and interdependent information technology systems to support business processes as well as internal and external communications. Our computer systems are vulnerable to breakdown, malicious intrusion and computer viruses. Any failure to protect against breakdowns, malicious intrusions and computer viruses may result in the impairment of production and key business processes. In addition, our systems are potentially vulnerable to data security breaches, whether by employees or others, which may expose sensitive data to unauthorized persons. Such data security breaches could lead to the loss of trade secrets or other intellectual property, or could lead to the public exposure of personal information of our employees, clinical trial patients, customers, and others. Such disruptions and breaches of security could expose us to liability and have a material adverse effect on the operating results and financial condition of our business.

Risks Relating to Our Securities

Our stock price may be volatile, and the value of an investment in our common stock may decline.

The trading price of our common stock may be subject to wide fluctuations in response to various factors, some of which are beyond our control, including:

- actions or delays by the FDA, EMA or other foreign regulatory authority in respect of our NDA, MAA or other application for abaloparatide-SC;
- results of clinical trials of our product candidates or those of our competitors;
- our operating performance and the operating performance of similar companies;
- the success of competitive products;
- the overall performance of the equity markets;
- the number of shares of our common stock publicly owned and available for trading;
- threatened or actual litigation;
- changes in laws or regulations relating to our products, including changes in the structure of healthcare payment systems;
- any major change in our board of directors or management;
- publication of research reports about us or our industry or positive or negative recommendations or withdrawal of research coverage by securities analysts;
- large volumes of sales of our shares of common stock by existing stockholders;
- general political, economic and market conditions; and
- the other factors described in this "Risk Factors" section.

In addition, the stock market in general has experienced extreme price and volume fluctuations that have often been unrelated or disproportionate to the operating performance of the companies whose shares trade in the stock market. Securities class action litigation has often been instituted against companies following periods of volatility in the overall market and in the market price of a company's securities. Such litigation, if instituted against us, could result in very substantial costs, divert our management's attention and resources and harm our business, operating results and financial condition.

Because we do not anticipate paying any cash dividends on our common stock in the foreseeable future, capital appreciation, if any, will be your sole source of gain.

We have never declared or paid cash dividends on our common stock. We currently intend to retain all of our future earnings, if any, to finance the growth and development of our business. As a result, capital appreciation, if any, of our common stock will be your sole source of gain for the foreseeable future.

We have incurred and will continue to incur increased costs as a result of operating as a public company, and our management is required to devote substantial time to compliance initiatives.

As a public company listed on the NASDAQ Global Market, or NASDAQ, we have incurred and will continue to incur significant legal, accounting and other expenses. In addition, the Sarbanes-Oxley Act of 2002 and rules subsequently implemented by the Securities and Exchange Commission, or the SEC, and NASDAQ have imposed various requirements on public companies, including establishment and maintenance of effective disclosure and financial controls and corporate governance practices. Our management and other personnel will need to devote a substantial amount of time to these compliance initiatives. Moreover, these rules and regulations have increased our legal and financial compliance costs and are making some activities more time-consuming and costly.

Pursuant to Section 404 of the Sarbanes-Oxley Act of 2002, or Section 404, we are required to furnish a report by our management on our internal control over financial reporting, and are required to include an attestation report on internal control over financial reporting issued by our independent registered public accounting firm. If we are unable to maintain effective internal controls, we may not have adequate, accurate or timely financial information, and we may be unable to meet our reporting obligations as a publicly traded company or comply with the requirements of the SEC or Section 404. This could result in a restatement of our consolidated financial statements, the imposition of sanctions, including the inability of registered broker dealers to make a market in our common shares, or investigation by regulatory authorities. Any such action or other negative results caused by our inability to meet our reporting requirements or comply with legal and regulatory requirements or by disclosure of an accounting, reporting or control issue could adversely affect the trading price of our securities and our business. Material weaknesses in our internal control over financial reporting could also reduce our ability to obtain financing or could increase the cost of any financing we obtain.

Our directors and executive officers, together with their affiliates, have substantial influence over us and could delay or prevent a change in corporate control.

Our directors and executive officers, together with their affiliates, beneficially owned approximately 6.2 million shares of our common stock as of December 31, 2016 . These stockholders, acting together, have the ability to significantly influence the outcome of matters submitted to our stockholders for approval, including the election of directors and any merger, consolidation or sale of all or substantially all of our assets. In addition, these stockholders, acting together, have the ability to significantly influence the management and affairs of our company. Accordingly, this concentration of ownership might harm the market price of our common stock by:

- delaying, deferring or preventing a change in corporate control;
- impeding a merger, consolidation, takeover or other business combination involving us; or
- discouraging a potential acquirer from making a tender offer or otherwise attempting to obtain control of us.

Future sales and issuances of our common stock or rights to purchase common stock, including pursuant to our equity incentive plans, could result in additional dilution of the percentage ownership of our stockholders and could cause our stock price to fall.

Additional capital will be needed in the future to continue our planned operations. To the extent we raise additional capital by issuing equity securities, our stockholders may experience substantial dilution. We may sell common stock, convertible securities or other equity securities in one or more transactions at prices and in a manner we determine from time to time. If we sell common stock, convertible securities or other equity securities in more than one transaction, investors may be materially diluted by subsequent sales. These sales may also result in material dilution to our existing stockholders, and new investors could gain rights superior to our existing stockholders.

Pursuant to our equity incentive plans, our management is authorized to grant stock options and other equity-based awards to our employees, directors and consultants. We have reserved 9,860,000 shares of our common stock for issuance under our equity incentive plans as of December 31, 2016 , which includes 2,960,000 shares of common stock issuable upon the exercise of options outstanding as of December 31, 2016 , 25,000 shares of common stock issuable upon the vesting of performance stock units, and approximately 57,000 restricted stock units, each of which will become eligible for sale in the public market in the future, subject to certain legal and contractual limitations. In addition, as of December 31, 2016 , warrants to purchase 0 shares of our common stock were outstanding. Pursuant to our employee stock purchase plan, eligible employees may participate in an employee stock purchase plan sponsored by us. The current plan allows for the issuance of 1,290,954 shares of common stock to eligible employees. As of December 31, 2016, there were 1,290,594 shares available for future sale to employees under this plan. Shares of our common stock issued upon exercise of these warrants may be sold in the public market, subject to prior registration or under an exemption from registration.

If securities or industry analysts cease to publish research or publish inaccurate or unfavorable research about our business, our stock price and trading volume could decline.

The trading market for our common stock depends in part on the research and reports that securities or industry analysts publish about us or our business. If one or more of the analysts who cover us downgrade our stock or publish inaccurate or unfavorable research about our business, our stock price would likely decline. If one or more of these analysts cease coverage of our company or fail to publish reports on us regularly, demand for our stock could decrease, which might cause our stock price and trading volume to decline.

We may be required to pay severance benefits to our employees who are terminated in connection with a change in control, which could harm our financial condition or results.

Each of our executive officers is party to an employment agreement, and each of our other employees is party to an agreement or participates in a plan that provides change in control severance benefits including cash payments for severance and other benefits and acceleration of vesting of stock options and other equity awards in the event of a termination of employment in connection with a change in control of us. The payment of these severance benefits could harm our financial condition and results. The accelerated vesting of options and equity awards could result in dilution to our existing stockholders and harm the market price of our common stock.

Anti-takeover provisions contained in our restated certificate of incorporation and amended and restated bylaws, as well as provisions of Delaware law, could impair a takeover attempt.

Our restated certificate of incorporation and our amended and restated bylaws contain provisions that could delay or prevent a change in control of our company. These provisions could also make it more difficult for stockholders to elect directors and take other corporate actions. These provisions include:

- a staggered board of directors;
- authorizing the board to issue, without stockholder approval, preferred stock with rights senior to those of our common stock;
- authorizing the board to amend our bylaws and to fill board vacancies until the next annual meeting of the stockholders;
- prohibiting stockholder action by written consent;
- limiting the liability of, and providing indemnification to, our directors and officers;
- eliminating the ability of our stockholders to call special meetings; and
- requiring advance notification of stockholder nominations and proposals.

Section 203 of the Delaware General Corporation Law prohibits, subject to some exceptions, "business combinations" between a Delaware corporation and an "interested stockholder," which is generally defined as a stockholder who becomes a beneficial owner of 15% or more of a Delaware corporation's voting stock, for a three-year period following the date that the stockholder became an interested stockholder.

These and other provisions in our restated certificate of incorporation and our amended and restated bylaws under Delaware law could discourage potential takeover attempts, reduce the price that investors might be willing to pay in the future

for shares of our common stock and result in the market price of our common stock being lower than it would be without these provisions.

Our ability to utilize our net operating loss carryforwards and certain other tax attributes may be limited.

As of December 31, 2016 , we had $526.7 million of federal and $385.3 million of state net operating loss carryforwards available to offset future taxable income. Under Section 382 of the Internal Revenue Code of 1986, as amended, or the Code, if a corporation undergoes an "ownership change" (generally defined as a greater than 50% change (by value) in its equity ownership over a three year period), the corporation's ability to use its pre-change net operating loss carryforwards and other pre-change tax attributes to offset its post-change income may be limited. We have completed studies through December 31, 2015, to determine whether any ownership change has occurred since our formation and have determined that transactions have resulted in two ownership changes, as defined under Section 382. There could be additional ownership changes in the future that could further limit the amount of net operating loss and tax credit carryforwards that we can utilize.

ITEM 1B. UNRESOLVED STAFF COMMENTS.

None.

ITEM 2. PROPERTIES.

Details of each of our principal properties as of December 31, 2016 , are provided below:

Location	Function	Size (approximate square feet)	Property Interest
Waltham, MA, USA	Corporate Headquarters	27,640	Leased
Parsippany, NJ, USA	Office space	10,530	Leased
Cambridge, MA, USA	Laboratory and office space	4,600	Subleased
Wayne, PA, USA	Office space	14,000	Subleased

ITEM 3. LEGAL PROCEEDINGS.

In November 2016, we received notice that in October 2016, Ipsen Pharma SAS, or Ipsen, initiated arbitration proceedings against us in the International Chamber of Commerce's International Court of Arbitration. Ipsen's Request for Arbitration alleges that we breached various provisions of an agreement, or the License Agreement, between Ipsen (formerly, SCRAS S.A.S.) and us, concerning abaloparatide, including with regard to Ipsen's right to co-promote abaloparatide in France and a license from us with respect to Japan. Ipsen seeks declaratory relief, compliance with the License Agreement, damages, costs and fees as a result of the purported breaches, and alleges the monetary value of these claims is approximately €50 million.

In January 2017, we submitted an Answer denying Ipsen's claims and alleging counterclaims against Ipsen for breach of the License Agreement and other declaratory judgment. We asserted, among other things, that Ipsen's claimed rights to co-promote abaloparatide in France and to a license from us with respect to Japan have permanently expired, and that Ipsen has breached the License Agreement by, among other things, allowing certain patents to expire and by purporting to license to a third party certain manufacturing and other rights that we contend Ipsen exclusively licensed to us. We are seeking dismissal of Ipsen's claims, as well as declaratory relief, compliance with the License Agreement, and other damages, costs and fees to be determined by the Arbitral Tribunal.

In February 2017, Ipsen submitted a Reply denying our counterclaims and alleging that we are precluded from asserting them. Given that this matter is at a preliminary stage, we cannot predict or assess the likely outcome of these proceedings.

ITEM 4. MINE SAFETY DISCLOSURES.

Not applicable.

PART II

ITEM 5. MARKET FOR REGISTRANT'S COMMON EQUITY, RELATED STOCKHOLDER MATTERS AND ISSUER PURCHASES OF EQUITY SECURITIES

The information required to be disclosed by Item 201(d) of Regulation S-K, "Securities Authorized for Issuance Under Equity Compensation Plans," is incorporated herein by reference. Refer to Item 12 of Part III of this Annual Report on Form 10-K for additional information.

Market Information

Our common stock has been traded on The NASDAQ Global Market under the symbol "RDUS" since the initial public offering of our common stock on June 6, 2014. Prior to that time there was no public market for our common stock. The following table presents reported quarterly high and low per share sale prices of our common stock on The NASDAQ Global Market for the periods presented.

2016	High	Low
Quarter Ended March 31, 2016	$ 62.61	$ 24.75
Quarter Ended June 30, 2016	40.91	29.27
Quarter Ended September 30, 2016	59.88	36.45
Quarter Ended December 31, 2016	55.97	24.75

2015	High	Low
Quarter Ended March 31, 2015	$ 51.22	$ 35.02
Quarter Ended June 30, 2015	69.16	34.76
Quarter Ended September 30, 2015	84.64	52.50
Quarter Ended December 31, 2015	77.10	45.89

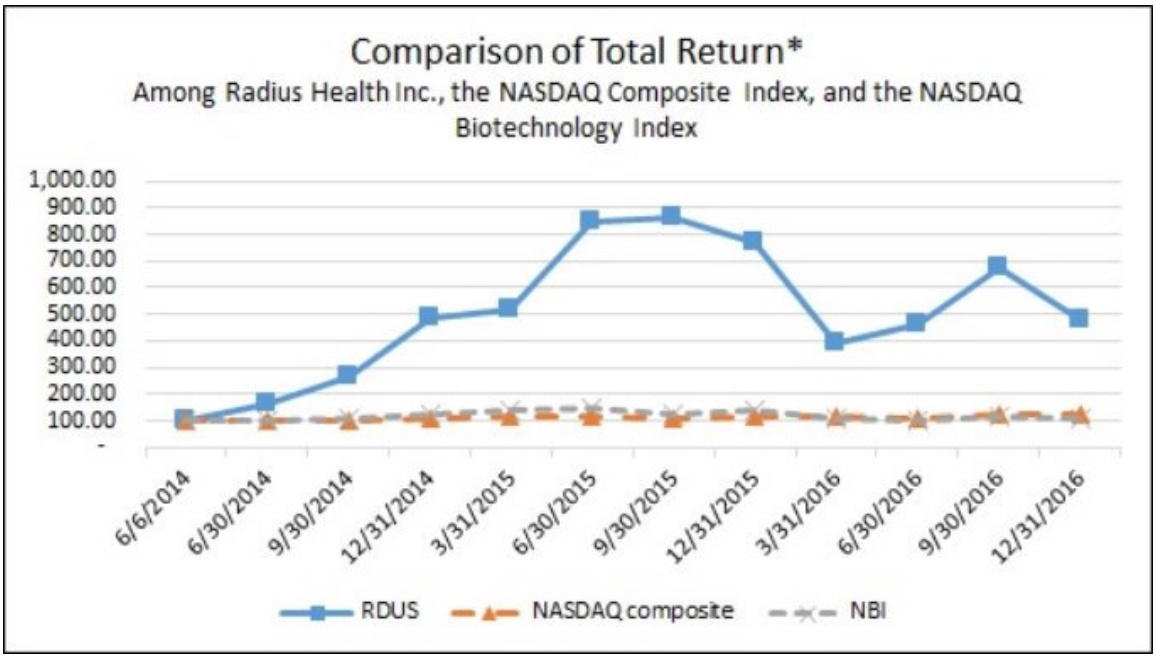
On February 17, 2017 , the closing price of our common stock was $45.65 per share as reported on The NASDAQ Global Market.

Stock Performance Graph

This performance graph is furnished and shall not be deemed "filed" with the SEC or subject to Section 18 of the Exchange Act, nor shall it be deemed incorporated by reference in any filings under the Securities Act of 1933, as amended.

The graph set forth below compares the cumulative total stockholder return on our common stock between June 6, 2014 (the date of the initial public offering of our common stock) and December 31, 2016 , with the cumulative total return of (a) the Nasdaq Biotechnology Index and (b) the Nasdaq Composite Index, over the same period. This graph assumes the investment of $100 on June 6, 2014 in our common stock, the Nasdaq Biotechnology Index and the Nasdaq Composite Index and assumes the reinvestment of dividends, if any. The graph assumes our closing sales price on June 6, 2014 of $8.01 per share as the initial value of our common stock and not the initial offering price to the public of $8.00 per share.

The comparisons shown in the graph below are based upon historical data. We caution that the stock price performance shown in the graph below is not necessarily indicative of, nor is it intended to forecast, the potential future performance of our common stock. Information used in the graph was obtained from the Nasdaq Stock Market LLC, a financial data provider and a source believed to be reliable. The Nasdaq Stock Market LLC is not responsible for any errors or omissions in such information.



* $100 invested on June 6, 2014 in stock or index

Holders

As of February 17, 2017 , there were 34 holders of record of our common stock. The actual number of stockholders is greater than this number of record holders, and includes stockholders who are beneficial owners, but whose shares are held in street name by brokers and other nominees. This number of holders of record also does not include stockholders whose shares may be held in trust by other entities.

Dividends

We have not paid any cash dividends on our common stock since inception and do not anticipate paying cash dividends in the foreseeable future.

Recent Sales of Unregistered Securities

We did not make any sales of unregistered securities during the fourth quarter ended December 31, 2016 .

Purchases of Equity Securities by the Issuer or Affiliated Purchasers

There were no such repurchases of shares of common stock made during the fourth quarter of the fiscal year ended December 31, 2016 .

ITEM 6. SELECTED FINANCIAL DATA.

You should read the following selected financial data together with our consolidated financial statements and the related notes contained in Item 8 of Part II of this Annual Report on Form 10-K. We have derived the statements of operations data for each of the three years ended December 31, 2014 , 2015 and 2016 and the balance sheet data as of December 31, 2015 and 2016 from the audited consolidated financial statements contained in Item 8 of Part II of this Form 10-K. The selected balance sheet data as of December 31, 2012 , 2013 and 2014 and the statement of operations data for the years ended December 31, 2012 and 2013 has been derived from the audited financial statements for such years not included in this Form 10-K.

The financial information set forth below for the year ended December 31, 2012 has been recast to reflect the adoption of Accounting Standards Update No. 2011-05, *Presentation of Comprehensive Income* .

The historical financial information set forth below may not be indicative of our future performance and should be read together with "Management's Discussion and Analysis of Financial Condition and Results of Operations" and our historical consolidated financial statements and notes to those statements included in Item 7 of Part II and Item 8 of Part II, respectively, of this Annual Report on Form 10-K.

Statement of Operations and Comprehensive Loss Data	**Year Ended December 31,**				
	2016	**2015**	**2014**	**2013**	**2012**
			(in thousands)		
Operating expenses:					
Research and development	$ 107,406	$ 68,280	$ 45,719	$ 60,536	$ 54,961
General and administrative	77,542	30,797	13,674	6,829	9,469
Loss from operations	(184,948)	(99,077)	(59,393)	(67,365)	(64,430)
Other (expense) income:					
Other (expense) income, net	(293)	(1,607)	(713)	9,085	(2,095)
Interest (expense) income, net	2,437	(842)	(2,373)	(2,410)	(2,603)
Net loss	(182,804)	(101,526)	(62,479)	(60,690)	(69,128)
Other comprehensive loss, net of tax:					
Unrealized gain (loss) from available-for-sale securities	66	26	(21)	—	(5)
Comprehensive loss	$ (182,738)	$ (101,500)	$ (62,500)	$ (60,690)	$ (69,133)
Net (loss) earnings attributable to common stockholders	$ (182,804)	$ (101,526)	$ (71,479)	$ (78,161)	$ (83,120)
Net (loss) earnings per share applicable to common stockholders—basic	$ (4.24)	$ (2.56)	$ (4.04)	$ (203.91)	$ (225.71)
Net (loss) earnings per share applicable to common stockholders—diluted	$ (4.24)	$ (2.56)	$ (4.04)	$ (203.91)	$ (225.71)
Weighted-average number of common shares used in net (loss) earnings per share applicable to common stockholders—basic	43,067,952	39,643,099	17,699,487	383,310	368,261
Weighted-average number of common shares used in net (loss) earnings per share applicable to common stockholders—diluted	43,067,952	39,643,099	17,699,487	383,310	368,261

Balance Sheet Data	As of December 31, 2016	2015	2014	2013	2012
			(in thousands)		
Cash and cash equivalents	$ 258,567	$ 159,678	$ 28,518	$ 12,303	$ 18,653
Marketable securities	73,880	313,661	76,758	—	4,000
Working capital	302,084	459,128	86,774	(22,675)	8,026
Total assets	340,282	482,465	108,417	12,758	25,300
Long-term liabilities	379	—	24,394	1,945	38,222
Total liabilities	33,104	21,180	44,953	37,257	55,312
Total convertible preferred stock and redeemable convertible preferred stock	—	—	—	252,802	170,649
Total liabilities, convertible preferred stock, redeemable convertible preferred stock and stockholders' equity (deficit)	340,282	482,465	108,417	12,758	25,300

ITEM 7. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS.

You should read the following discussions in conjunction with our consolidated financial statements and related notes included in this report. This discussion includes forward-looking statements that involve risk and uncertainties. As a result of many factors, such as those set forth under "Risk Factors," actual results may differ materially from those anticipated in these forward-looking statements.

Executive Overview

We are a science-driven biopharmaceutical company that is committed to developing innovative therapeutics in the areas of osteoporosis, oncology and endocrine diseases. Our lead investigational product candidate, abaloparatide for subcutaneous injection, or abaloparatide-SC, has completed Phase 3 development for potential use in the treatment of women with postmenopausal osteoporosis. Our New Drug Application, or NDA, for abaloparatide-SC is under regulatory review by the U.S. Food and Drug Administration, or FDA, with a Prescription Drug User Fee Act, or PDUFA, date of March 30, 2017. Our European Marketing Authorisation Application for abaloparatide-SC is under review by the Committee for Medicinal Products for Human Use, or CHMP, of the European Medicines Agency, or EMA. We intend to commercialize abaloparatide-SC in the United States and our experienced commercial leaders are rapidly expanding the breadth of our capabilities and sales organization with highly skilled and tenured individuals.

Our clinical pipeline also includes an abaloparatide transdermal patch, or abaloparatide-TD, for potential use in the treatment of women with postmenopausal osteoporosis. We are focused on completing the manufacturing scale-up, production, and other activities required for the initiation of a pivotal bioequivalence study for abaloparatide-TD. In addition, we are evaluating our investigational product candidate, RAD1901, a selective estrogen receptor down-regulator/degrader, for potential use in the treatment of hormone-driven and/or hormone-resistant breast cancer, as well as for potential use in the treatment of vasomotor symptoms in postmenopausal women. We plan to complete our ongoing Phase 1 studies of RAD1901 in advanced metastatic breast cancer and our ongoing Phase 2b study of RAD1901 in postmenopausal vasomotor symptoms. In the first half of 2017, we intend to engage with regulatory agencies to gain alignment on defining the next steps for our RAD1901 breast cancer program, which would include the design of a Phase 2 trial. In the first half of 2017, we also expect to complete and report results from our RAD1901 Phase 2b vasomotor trial.

Our clinical pipeline also includes our internally developed investigational product candidate, RAD140, a non-steroidal selective androgen receptor modulator, or SARM, for potential use in the treatment of breast cancer. In December 2016, we submitted an investigational new drug application, or IND, to the FDA and expect to initiate a first-in-human Phase 1 study of RAD140 in women with hormone receptor positive breast cancer in 2017.

Abaloparatide

Abaloparatide is an investigational therapy for the potential treatment of women with postmenopausal osteoporosis who are at an increased risk for a fracture. Abaloparatide is a novel synthetic peptide analog that engages the parathyroid hormone receptor, or PTH1 receptor, and was selected for clinical development based on its potential for favorable bone building activity. Abaloparatide was designed to have a unique mechanism of action with the goal of stimulating enhanced bone building activity including bone formation, increasing bone mineral density, restoring bone microarchitecture and augmenting bone strength. We are developing two formulations of abaloparatide:

- *Abaloparatide-SC*— Abaloparatide-SC has completed Phase 3 development for potential use as a daily self-administered injection. We hold worldwide commercialization rights to abaloparatide-SC, except for Japan. In December 2014, we announced positive 18-month top-line data from our Phase 3 ACTIVE clinical trial of abaloparatide-SC. These results were published in the Journal of the American Medical Association, or JAMA, in August 2016. In June 2015, we announced the positive top-line data from the first six months of our 24-month ACTIVExtend clinical trial of abaloparatide-SC and the 25-month combined fracture data from the ACTIVE and ACTIVExtend clinical trials. These data were published in the Mayo Clinic Proceedings in February 2017. The combined 25-month fracture data from our Phase 3 clinical trial program for abaloparatide-SC formed the basis of our regulatory submissions in the United States and Europe. In November 2015, we submitted an MAA to the European Medicines Agency, or EMA, which was validated and is currently undergoing active regulatory assessment by the CHMP. We anticipate that the CHMP may adopt an opinion regarding the MAA in 2017. In March 2016, we submitted an NDA to the FDA, which has been accepted for filing by the FDA with a PDUFA date of March 30, 2017. We intend to enter into one or more collaborations for the potential commercialization of abaloparatide-SC prior to a commercial launch. Subject to regulatory review and a favorable regulatory outcome, we anticipate the first commercial sales of abaloparatide-SC will take place in 2017. We intend to commercialize abaloparatide-SC in the United States ourselves and our experienced commercial leaders are rapidly expanding the breadth of our capabilities and sales organization with highly skilled and tenured individuals. We expect to report the top-line results from our recently completed 24-month ACTIVExtend trial in the second quarter of 2017.

- *Abaloparatide-TD*— We are also developing abaloparatide-transdermal, which we refer to as abaloparatide-TD, based on 3M's patented Microstructured Transdermal System technology for potential use as a short wear-time transdermal patch. We hold worldwide commercialization rights to the abaloparatide-TD technology. We are developing abaloparatide-TD toward future global regulatory submissions to build upon the potential success of our investigational product candidate, abaloparatide-SC, if approved. We commenced a human replicative clinical evaluation of the optimized abaloparatide-TD patch in December 2015, with the goal of achieving comparability to abaloparatide-SC. In September 2016, we presented results from this evaluation, which showed that the pharmacokinetic profile of an optimized abaloparatide-TD patch with respect to Tmax, T1/2, and AUC was successfully modified so as to improve comparability to abaloparatide-SC. The results of this clinical evaluation will inform the design of a pivotal bioequivalence study that will be initiated following completion of activities related to manufacturing scale-up, production, and other activities required for the initiation of that study.

Our Capabilities-Organization and Experience

In our evolution towards becoming a fully integrated biopharmaceutical company, we are completing the build out of our sales and medical organizations. We are also continuing to strengthen our compliance program as part of our commitment to a strong culture of compliance and good corporate governance.

Our accomplished senior commercial leadership is currently completing the build out of our commercial organization, with capabilities across sales, marketing, reimbursement, and distribution, to support the potential commercialization of abaloparatide-SC in the United States. In 2016, we established our commercial organization with core teams organized around marketing, sales, market access and commercial operations functions.

Our market access and sales teams will engage and support external customers. Our market access organization has hired an account team comprised of individuals with significant account experience with the large third-party payers and trade accounts that represent a substantial majority of all potential target patients. We also assembled a marketing team of seasoned professionals with substantial specialty pharmaceutical marketing, communications, professional education, patient education and advocacy expertise. Our sales organization has hired over 20 capable sales leaders with prior osteoporosis, managerial, specialty launch and injectable therapy experience. These sales leaders will manage a sales organization that will be comprised of more than 200 clinical sales and integrated delivery network specialists. We intend to complete the hiring of our U.S. sales force in the first quarter of 2017. Finally, we forged a comprehensive commercial operations team to support launch requirements. Our commercial operations leaders have substantial specialty launch experience in establishing hub and specialty pharmacy distribution networks, analytics and forecasting, market research, sales and market operations, and sales training.

If approved, we intend to distribute abaloparatide-SC in the United States through a network of distributors and specialty pharmacies. Under this distribution model, both the distributors and specialty pharmacies would take physical delivery of product and the specialty pharmacies would dispense the product directly to patients.

Our experienced senior medical leadership is completing the build out of our medical organization to provide cross-functional support to both internal partners and external stakeholders by providing expert scientific knowledge, educational material and scientific training programs. This dedicated and skilled organization is comprised of 40 professionals with

extensive clinical and scientific experience within academic medical centers, clinical medical practice, research institutions, and other pharmaceutical organizations.

Our medical team was organized with key functions, including medical affairs, pharmacovigilance, medical information, publications, and health economics outcomes research. Our medical affairs team includes physicians with relevant clinical and pharmaceutical experience in endocrinology and women's health. The medical affairs team also includes scientists with extensive research experience in bone health who will provide clinical development support for current and future scientific research. Our team of medical sciences liaisons, or MSLs, will provide medical educational support to external stakeholders. The director and regional managers of our MSL team have comprehensive experience in the field of osteoporosis.

Under the leadership of our Chief Compliance Officer, we are continuing to strengthen our compliance program as part of our commitment to a strong culture of compliance and good corporate governance. We recently revised our Code of Conduct and Business Ethics, or Code of Conduct, which applies to all of our directors, officers and employees and have incorporated elements of the updated Code of Conduct into formal compliance trainings which are required to be completed by all employees. In addition, our management and other personnel have devoted a substantial amount of time to compliance initiatives, including establishing and maintaining effective disclosure and financial controls and corporate governance practices, as required by the Sarbanes-Oxley Act of 2002, as amended, and rules subsequently implemented by the Securities and Exchange Commission, or the SEC, and NASDAQ.

RAD1901

RAD1901 is a selective estrogen receptor down-regulator/degrader, or SERD, that at high doses is being evaluated for potential use as an oral non-steroidal treatment for hormone-driven and/or hormone-resistant, breast cancer. We hold worldwide commercialization rights to RAD1901. RAD1901 is currently being investigated in postmenopausal women with advanced estrogen receptor positive, or ER-positive, HER2-negative breast cancer, the most common form of the disease. Studies completed to date indicate that the compound has the potential for use as a single agent or in combination with other therapies for the treatment of breast cancer.

Phase 1 - Dose-Escalation Study

In December 2014, we commenced a Phase 1, multicenter, open-label, multiple-part, dose-escalation study of RAD1901 in postmenopausal women with ER-positive and HER2-negative advanced breast cancer in the United States to determine the recommended dose for a Phase 2 clinical trial and to make a preliminary evaluation of the potential anti-tumor effect of RAD1901. Part A of this Phase 1 study was designed to evaluate escalating doses of RAD1901. The Part B expansion cohort was initiated at 400-mg daily dosing in March 2016 to allow for an evaluation of additional safety, tolerability and preliminary efficacy. The patients enrolled in this study are heavily pretreated ER-positive, HER2-negative advanced breast cancer patients who have received a median of 3 prior lines of therapy including fulvestrant and CDK4/6 inhibitors, and more than 50% of the patients had ESR1 mutations.

In December 2016, we reported positive results from this ongoing Phase 1 dose-escalation and expansion study. These results reflected that RAD1901 was well-tolerated with the most commonly reported adverse events being low grade nausea and dyspepsia. The Part C tablet dosage form cohort was initiated thereafter and enrollment was completed in November 2016.

Phase 1 - FES-PET Study

In December 2015, we commenced a Phase 1 18-F fluoroestradiol positron emission tomography, or FES-PET, study in patients with metastatic breast cancer in the European Union which includes the use of FES-PET imaging to assess estrogen receptor occupancy in tumor lesions following RAD1901 treatment. We continue to enroll patients in the EU Phase I FES-PET study.

In December 2016, we reported positive results from the ongoing Phase 1 FES-PET study. The first three enrolled patients dosed at the 400-mg cohort had a tumor FES-PET signal intensity reduction ranging from 79% to 91% at day 14 compared to baseline. The most commonly reported adverse events reported to date have been grade 1 and 2 nausea and dyspepsia. This study will enroll 5 additional patients in the 400-mg daily oral cohort, followed by 8 patients in the 200-mg daily oral cohort.

Phase 1 - Recent Progress

To date, no dose limiting toxicities have been reported in the RAD1901 program.

We plan to complete both of our ongoing RAD1901 Phase 1 breast cancer trials. In the first half of 2017, we intend to engage with regulatory agencies to gain alignment on defining the next steps for the program, which would include the design of a Phase 2 trial.

Collaborations

In July 2015, we announced that early but promising preclinical data showed that our investigational drug RAD1901, in combination with Pfizer's palbociclib, a cyclin-dependent kinase, or CDK 4/6 inhibitor, or Novartis' everolimus, an mTOR inhibitor, was effective in shrinking tumors. In preclinical patient-derived xenograft breast cancer models with either wild type or mutant ESR1, treatment with RAD1901 resulted in marked tumor growth inhibition, and the combination of RAD1901 with either agent, palbociclib or everolimus, showed anti-tumor activity that was significantly greater than either agent alone. We believe that this preclinical data suggest that RAD1901 has the potential to overcome endocrine resistance, is well-tolerated, and has a profile that is well suited for use in combination therapy.

In July 2016, we entered into a pre-clinical collaboration with Takeda Pharmaceutical Company Limited to evaluate the combination of RAD1901 with Takeda's investigational drug TAK-228, an oral mTORC 1/2 inhibitor in Phase 2b development for the treatment of breast, endometrial and renal cancer, with the goal of potentially exploring such combination in a clinical study. We and Takeda have each agreed to contribute resources and supply compound material necessary for studies to be conducted under the collaboration and will share third party out-of-pocket research and development expenses. Activities under this collaboration are ongoing. Upon completion, both parties will agree upon the appropriate communication of the results.

In January 2016, we entered into a worldwide clinical collaboration with Novartis Pharmaceuticals to evaluate the safety and efficacy of combining RAD1901 with Novartis' investigational agent LEE011 (ribociclib), a CDK 4/6 inhibitor, and BYL719 (alpelisib), an investigational phosphoinositide 3-kinase inhibitor.

Phase 2b - Vasomotor Symptoms Study

RAD1901 is also being evaluated at low doses as an estrogen receptor ligand for the potential relief of the frequency and severity of moderate to severe hot flashes in postmenopausal women with vasomotor symptoms. We expect to report results from our Phase 2b clinical study of RAD1901 for the potential treatment of postmenopausal vasomotor symptoms in the first half of 2017.

RAD140

RAD140 is a nonsteroidal selective androgen receptor modulator, or SARM. The androgen receptor, or AR, is highly expressed in many ER-positive, ER-negative, and triple-negative receptor breast cancers. Due to its receptor and tissue selectivity, potent activity, oral bioavailability, and long half-life, we believe RAD140 could have clinical potential in the treatment of breast cancer. We hold worldwide commercialization rights to RAD140, which resulted from an internal discovery program.

In July 2016, we reported that RAD140 in preclinical xenograft models of breast cancer demonstrated potent tumor growth inhibition when administered alone or in combinations with CDK4/6 inhibitors. It is estimated that 77% of breast cancers show expression of the androgen receptor. Our data suggest that RAD140 activity at the androgen receptor stimulates up-regulation of a tumor suppression pathway. We submitted an IND to the FDA for RAD140 in December 2016 and plan to initiate a first-in-human Phase 1 study of RAD140 in women with hormone receptor positive breast cancer in 2017.

Financial Overview

Research and Development Expenses

Research and development expenses consist primarily of clinical testing costs, including payments made to contract research organizations, or CROs, salaries and related personnel costs, fees paid to consultants and outside service providers for regulatory and quality assurance support, licensing of drug compounds and other expenses relating to the manufacture, development, testing, and enhancement of our investigational product candidates. We expense our research and development costs as they are incurred.

None of the research and development expenses, in relation to our investigational product candidates, are currently borne by third parties. Our lead investigational product candidate is abaloparatide and it currently represents the largest portion of our research and development expenses for our investigational product candidates. We began tracking program expenses for abaloparatide-SC in 2005, and program expenses from inception to December 31, 2016 were approximately $212.9 million . We began tracking program expenses for abaloparatide-TD in 2007, and program expenses from inception to December 31, 2016 were approximately $39.1 million . We began tracking program expenses for RAD1901 in 2006, and program expenses from inception to December 31, 2016 were approximately $55.5 million . We began tracking program expenses for RAD140 in 2008, and program expenses from inception to December 31, 2016 were approximately $8.9 million . These expenses relate primarily to external costs associated with manufacturing, preclinical studies, and clinical trial costs.

Costs related to facilities, depreciation, stock-based compensation and research and development support services are not directly charged to programs as they benefit multiple research programs that share resources.

The following table sets forth our research and development expenses related to abaloparatide-SC, abaloparatide-TD, RAD1901 and RAD140 for the years ended December 31, 2016 , 2015 and 2014 (in thousands):

	Year Ended December 31,		
	2016	2015	2014
Abaloparatide-SC	$ 17,016	$ 19,870	$ 32,044
Abaloparatide-TD	5,394	2,585	1,493
RAD1901	27,751	9,926	2,250
RAD140	3,181	495	—

General and Administrative Expenses

General and administrative expenses consist primarily of salaries and related expenses for executive, finance and other administrative personnel, professional fees, business insurance, rent, general legal activities, including the cost of maintaining our intellectual property portfolio, and other corporate expenses.

Our financial results also include stock-based compensation expense related to the issuance of stock option grants, restricted stock units, and performance unit grants to employees, directors, and consultants. The stock-based compensation expense is included in the respective categories of expense in the statement of operations (i.e., research and development or general and administrative expenses). We expect to record additional non-cash compensation expense in the future, which may be significant.

Interest Income and Interest Expense

Interest income reflects interest earned on our cash, cash equivalents and marketable securities.

Interest expense reflects interest due under our loan and security agreements In May 2014, we entered into a loan and security agreement, or the 2014 Credit Facility, with Solar Capital Ltd., or Solar, as agent and lender, and Oxford Finance, as lender. In May 2014, we drew $21.0 million under an initial term loan under this facility, of which we used approximately $9.3 million to repay all the amounts owed under a previous credit facility we had entered into with other financial institutions.

In July 2014, we entered into a first amendment to the 2014 Credit Facility, or the First Amendment, pursuant to which we drew a second term loan of $4.0 million. In August 2015, we prepaid all amounts owed under the 2014 Credit Facility, as amended. After consideration of relevant fees required under the Credit Facility and the First Amendment, the total payment amounted to $26.5 million.

Other Income (Expense)

For the year ended December 31, 2016 , other expense, net reflects foreign exchange gain/loss and tax expense. For the years ended December 31, 2015 and 2014 , other income (expense) primarily reflects changes in the fair value of our warrant liability and the series A-6 convertible preferred stock liability and stock asset outstanding prior to our initial public offering from the date of the initial accrual to the reporting date.

Critical Accounting Policies and Estimates

Our management's discussion and analysis of our financial condition and results of operations are based on our consolidated financial statements, which we have prepared in accordance with the rules and regulations of the Securities and Exchange Commission, or the SEC, and generally accepted accounting principles in the United States, or GAAP. The preparation of these consolidated financial statements requires us to make estimates and assumptions that affect the reported amounts of assets and liabilities and the disclosure of contingent assets and liabilities at the date of the financial statements, as well as the reported revenues and expenses during the reporting periods. We evaluate our estimates and judgments on an ongoing basis. Estimates include useful lives with respect to long-lived assets and intangible assets, accounting for stock-based compensation, contingencies, intangible assets, tax valuation reserves, and accrued expenses. We base our estimates on historical experience and on various other factors that we believe are reasonable under the circumstances, the results of which form the basis for making judgments about the carrying value of assets and liabilities that are not readily apparent from other sources. Our actual results may differ from these estimates under different assumptions or conditions.

While our significant accounting policies are more fully described in Note 2 to our consolidated financial statements appearing at the end of this Annual Report on Form 10-K, we believe that the following accounting policies are the most critical to aid you in fully understanding and evaluating our financial condition and results of operations.

Accrued Clinical Expenses

When preparing our consolidated financial statements, we are required to estimate our accrued clinical expenses. This process involves reviewing open contracts and purchase orders, communicating with our personnel to identify services that have been performed on our behalf and estimating the level of service performed and the associated cost incurred for the service when we have not yet been invoiced or otherwise notified of actual cost. Payments under some of the contracts we have with parties depend on factors such as successful enrollment of certain numbers of patients, site initiation and the completion of clinical trial milestones. Examples of estimated accrued clinical expenses include:

- fees paid to investigative sites and laboratories in connection with clinical studies;
- fees paid to CROs in connection with clinical studies, if CROs are used; and
- fees paid to contract manufacturers in connection with the production of clinical study materials.

When accruing clinical expenses, we estimate the time period over which services will be performed and the level of effort to be expended in each period. If possible, we obtain information regarding unbilled services directly from our service providers. However, we may be required to estimate the cost of these services based only on information available to us. If we underestimate or overestimate the cost associated with a trial or service at a given point in time, adjustments to research and development expenses may be necessary in future periods. Historically, our estimated accrued clinical expenses have approximated actual expense incurred. Subsequent changes in estimates may result in a material change in our accruals.

Research and Development Expenses

We account for research and development costs by expensing such costs to operations as incurred. Research and development costs primarily consist of personnel costs, outsourced research activities, pre-commercial manufacturing activities, laboratory supplies and consulting fees.

Nonrefundable advance payments for goods or services to be received in the future for use in research and development activities are deferred and capitalized. The capitalized amounts are expensed as the related goods are delivered or the services are performed. If expectations change such that we do not expect we will need the goods to be delivered or the services to be rendered, capitalized nonrefundable advance payments would be charged to expense.

Stock-based Compensation

Options

We measure stock-based compensation cost at the accounting measurement date based on the fair value of the option, and recognize the expense on a straight-line basis over the requisite service period of the option, which is typically the vesting period.

We estimate the fair value of each option using the Black-Scholes option pricing model that takes into account the fair value of our common stock, the exercise price, the expected life of the option, the expected volatility of our common stock, expected dividends on our common stock, and the risk-free interest rate over the expected life of the option. Due to the limited trading history of our common stock since our June 2014 initial public offering, we use the simplified method described in the SEC's Staff Accounting Bulletin No. 107, *Share-Based Payment,* to determine the expected life of the option grants. The estimate of expected volatility is based on a review of the historical volatility of similar publicly held companies in the biotechnology field over a period commensurate with the option's expected term. We have never declared or paid any cash dividends on our common stock and we do not expect to do so in the foreseeable future. Accordingly, we use an expected dividend yield of zero. The risk-free rate is based on the U.S. Treasury yield curve in effect at the time of grant valuation for a period commensurate with the option's expected term. These assumptions are highly subjective and changes in them could significantly impact the value of the option and hence the related compensation expense.

We apply an estimated forfeiture rate to current period expense to recognize compensation expense only for those awards expected to vest. We estimate forfeitures based upon historical data, adjusted for known trends, and will adjust the estimate of forfeitures if actual forfeitures differ or are expected to differ from such estimates. Subsequent changes in estimated forfeitures are recognized through a cumulative adjustment in the period of change and also will impact the amount of stock-based compensation expense in future periods.

Stock-based compensation expense recognized for options granted to consultants is also based upon the fair value of the options issued, as determined by the Black-Scholes option pricing model. However, the unvested portion of such option grants is re-measured at each reporting period, until such time as the option is fully vested.

Performance Units

We measure stock-based compensation cost at the accounting measurement date based on the fair value of the performance unit grant, and recognize the expense over the derived service period of the performance units.

We estimate the fair value of each grant using a Monte Carlo simulation analysis that takes into account the forecasted price of our common stock, historical volatility of our common stock, risk-free rate as of valuation date, price of our common stock as of the grant date and the trigger for the performance condition to be met.

The derived service period for each grant is calculated using a Monte Carlo simulation analysis.

Fair Value Measurements

We define fair value as the price that would be received to sell an asset or be paid to transfer a liability in an orderly transaction between market participants at the measurement date. We determine fair value based on the assumptions market participants use when pricing the asset or liability. We also use the fair value hierarchy that prioritizes the information used to develop these assumptions.

The fair value hierarchy gives the highest priority to unadjusted quoted prices in active markets for identical assets (Level 1) and the lowest priority to unobservable inputs (Level 3). Our financial assets and liabilities are classified within the fair value hierarchy based on the lowest level of input that is significant to the fair value measurement. The three levels of the fair value hierarchy, and its applicability to our financial assets, are described below:

Level 1 —Unadjusted quoted prices in active markets that are accessible at the measurement date of identical, unrestricted assets.

Level 2 —Quoted prices for similar assets, or inputs that are observable, either directly or indirectly, for substantially the full term through corroboration with observable market data. Level 2 includes investments valued at quoted prices adjusted for legal or contractual restrictions specific to the security.

Level 3 —Pricing inputs are unobservable for the asset, that is, inputs that reflect the reporting entity's own assumptions about the assumptions market participants would use in pricing the asset. Level 3 includes private investments that are supported by little or no market activity.

As of December 31, 2016 and 2015 , we held financial assets that were measured using Level 1 and Level 2 inputs. Assets measured using Level 1 inputs include money market funds, which are valued using quoted market prices with no valuation adjustments applied. Assets measured using Level 2 inputs include marketable securities that consist primarily of domestic corporate debt securities (direct issuance bonds, corporate bonds, etc.) and are valued using third-party pricing resources, which generally use interest rates and yield curves observable at commonly quoted intervals of similar assets as observable inputs for pricing.

As of December 31, 2016 and 2015 , we held no Level 3 assets or liabilities.

Results of Operations

The following discussion summarizes the key factors our management team believes are necessary for an understanding of our consolidated financial statements.

Years Ended December 31, 2016 and December 31, 2015

	Years Ended December 31,		Change	
	2016	2015	$	%
	(in thousands)			
Operating expenses:				
Research and development	$ 107,406	$ 68,280	$ 39,126	57 %
General and administrative	77,542	30,797	46,745	152 %
Loss from operations	(184,948)	(99,077)	(85,871)	87 %
Other (expense) income:				
Other (expense), net	(293)	(35)	(258)	737 %
Loss on retirement of note payable	—	(1,572)	1,572	(100)%
Interest income (expense), net	2,437	(842)	3,279	(389)%
Net loss	$ (182,804)	$ (101,526)	(81,278)	80 %

Research and development expenses —For the year ended December 31, 2016 , research and development expense was $107.4 million , as compared to $68.3 million for the year ended December 31, 2015 , an increase of $39.1 million , or 57% . This increase was primarily a result of increased compensation expense, including an increase of $3.3 million of non-cash stock-based compensation expense, due to growth in headcount from 48 research and development employees as of December 31, 2015 , to 107 research and development employees as of December 31, 2016 . This increase in spend was also driven by higher contract service costs associated with the development of our investigational product candidate RAD1901 as a result of the increased clinical and manufacturing activities in 2016, as compared to 2015. These amounts were partially offset by a decrease in the total professional contract service costs associated with the development of abaloparatide-SC as more patients completed study protocol activities associated with the 24-month ACTIVExtend clinical trial in 2016, as compared to 2015.

General and administrative expenses —For the year ended December 31, 2016 , general and administrative expense was $77.5 million , as compared to $30.8 million for the year ended December 31, 2015 , an increase of $46.7 million , or 152% . This increase was primarily due to increased professional support costs of approximately $19.4 million, including costs associated with preparing for the potential commercialization of abaloparatide-SC (subject to a favorable regulatory review), as compared to 2015. This increase in spend was also driven by increased compensation expense, including an increase of $8.0 million of non-cash stock-based compensation expense, due to growth in headcount from 27 general and administrative employees as of December 31, 2015 , to 130 general and administrative employees as of December 31, 2016 . We expect our general and administrative costs to continue to increase as we build out our commercial organization.

Other (expense), net —For the year ended December 31, 2016 , other expense, net of other income, was $0.3 million , as compared to $35 thousand during the year ended December 31, 2015 . Other expense, net of other income, for the year ended December 31, 2016 consisted primarily of other taxes and foreign currency revaluation losses. The $35 thousand of other expense, net of income, for the year ended December 31, 2015 was primarily due to other taxes.

Loss on retirement of note payable —For the year ended December 31, 2015 , loss on retirement of note payable was approximately $1.6 million . This loss was a result of the prepayment of our 2014 Credit Facility in August 2015. We had no outstanding debt during the year ended December 31, 2016.

Interest income (expense), net —For the year ended December 31, 2016 , interest income was $2.4 million , as compared to net interest expense of $0.8 million during the year ended December 31, 2015 , a total change of $3.3 million , or 389% . This change was a result of the elimination of interest expense during the year ended December 31, 2016, as compared to the same period ended 2015, due to the prepayment of all outstanding long-term debt on August 4, 2015, combined with a $1.4 million increase in interest income earned on cash, cash equivalents, and marketable securities during the year ended December 31, 2016 , as compared to the same period ended 2015.

Years Ended December 31, 2015 and December 31, 2014

	Years Ended December 31,		Change	
	2015	2014	$	%
	(in thousands)			
Operating expenses:				
Research and development	$ 68,280	$ 45,719	$ 22,561	49 %
General and administrative	30,797	13,674	17,123	125 %
Loss from operations	(99,077)	(59,393)	(39,684)	67 %
Other (expense) income:				
Other (expense) income, net	(35)	(510)	475	(93)%
Loss on retirement of note payable	(1,572)	(203)	(1,369)	674 %
Interest (expense) income, net	(842)	(2,373)	1,531	(65)%
Net loss	$ (101,526)	$ (62,479)	(39,047)	62 %

Research and development expenses —For the year ended December 31, 2015 , research and development expense was $68.3 million compared to $45.7 million for the year ended December 31, 2014 , an increase of $22.6 million , or 49% . This increase was primarily a result of an increase in compensation expense, including an increase of $5.9 million of non-cash stock-based compensation expense, due to an increase in headcount from 16 research and development employees as of December 31, 2014 to 48 research and development employees as of December 31, 2015. This increase was also driven by higher consulting costs incurred to support our MAA and NDA submissions for our investigational product candidate abaloparatide-SC, and an increase in contract service costs associated with the development of our investigational product candidate RAD1901 as a result of the initiation of various preclinical and manufacturing activities in late 2014. These amounts were partially offset by a decrease in the total professional contract service costs associated with the development of abaloparatide-SC resulting from the completion of our Phase 3 18-month fracture study in October 2014 and the first six months of our ACTIVExtend clinical trial.

General and administrative expenses —For the year ended December 31, 2015 , general and administrative expense was $30.8 million compared to $13.7 million for the year ended December 31, 2014 , an increase of $17.1 million , or 125% . This increase was primarily the result of an increase during the year ended December 31, 2015, of approximately $10.3 million in legal fees and professional support costs, including the costs associated with growing Radius' headcount and preparing for the potential commercialization of abaloparatide-SC, subject to a favorable regulatory review. This increase was also driven by an increase in compensation expense, including an increase of $1.8 million of non-cash stock-based compensation expense, due to an increase in headcount from 10 general and administrative employees as of December 31, 2014 to 27 general and administrative employees as of December 31, 2015.

Other (expense) income, net —For the year ended December 31, 2015 , other expense, net of other income, was $35 thousand , as compared to other income, net of expense during the year ended December 31, 2014 of $0.5 million . Other expense, net of other income, for the year ended December 31, 2015 consisted primarily of state taxes. The $0.5 million of other expense, net of income, for the year ended December 31, 2014 was primarily due to an increase in the fair value of our warrant liability as a result of an overall increase in the fair value of the underlying common stock from December 31, 2013 to June 6, 2014. Following our initial public offering on June 6, 2014, the carrying value of our warrant liability was reclassified to equity.

Loss on retirement of note payable —For the year ended December 31, 2015 , loss on retirement of note payable was $1.6 million . This loss was a result of the prepayment of our 2014 Credit Facility, as amended, on August 4, 2015. For the year ended December 31, 2014, loss on retirement of a previous credit facility $0.2 million due to prepayment in May 2014.

Interest (expense) income —For the year ended December 31, 2015 , interest expense, net of interest income, was $0.8 million , as compared to $2.4 million during the year ended December 31, 2014, a decrease of $1.5 million , or 65% . This decrease was primarily a result of the prepayment of all outstanding long-term debt on August 4, 2015, and an increase in interest income as a result of an increase in our cash, cash equivalents and marketable securities outstanding during the year ended December 31, 2015.

Liquidity and Capital Resources

From inception to December 31, 2016 , we have incurred an accumulated deficit of $ 628.6 million , primarily as a result of expenses incurred through a combination of research and development activities related to our various investigational product

candidates and expenses supporting those activities. Our total cash, cash equivalents and marketable securities balance as of December 31, 2016 was $332.4 million . We have financed our operations since inception primarily through the public offerings of our common stock, private sale of preferred stock, borrowing under credit facilities and the receipt of $5.0 million in fees associated with an option agreement.

Based upon our cash, cash equivalents and marketable securities balance, we believe that, prior to the consideration of revenue from the potential future sales of any of our investigational products that may receive regulatory approval or proceeds from partnering and/or collaboration activities, we have sufficient capital to fund our development plans, U.S. commercial scale-up and other operational activities, for not less than twelve months from the date of this filing and into 2018. We expect to finance the future development costs of our clinical product portfolio with our existing cash, cash equivalents and marketable securities, or through strategic financing opportunities, that could include, but are not limited to, partnering or other collaboration agreements, future offerings of equity, royalty-based financing arrangements, or the incurrence of debt. However, there is no guarantee that any of these strategic financing opportunities will be available to us on favorable terms, and some could be dilutive to existing stockholders. Our future capital requirements will depend on many factors, including the scope and progress made in our research and development and commercialization activities, the results of our clinical trials, and the review and potential approval of our products by the FDA and foreign regulatory authorities. The successful development of our investigational product candidates is subject to numerous risks and uncertainties associated with developing drugs, which could have a significant impact on the cost and timing associated with the development of our product candidates. If we fail to obtain additional future capital, we may be unable to complete our planned preclinical and clinical trials and obtain approval of any investigational product candidates from the FDA and foreign regulatory authorities.

The following table sets forth the major sources and uses of cash for each of the periods set forth below (in thousands):

	Years ended December 31,		
	2016	2015	2014
Net cash (used in) provided by:			
Operating activities	$ (139,804)	$ (87,103)	$ (48,345)
Investing activities	236,120	(239,822)	(78,065)
Financing activities	2,573	458,085	142,625
Net increase in cash and cash equivalents	$ 98,889	$ 131,160	$ 16,215

Cash Flows from Operating Activities

Net cash used in operating activities during the year ended December 31, 2016 was $139.8 million , which was primarily the result of a net loss of $182.8 million , partially offset by net changes in working capital of $15.6 million and $27.4 million of net non-cash adjustments to reconcile net loss to net cash used in operations. The $182.8 million net loss was primarily due to RAD1901 and RAD140 program development expenses along with compensation costs, professional support costs, and consulting fees incurred in preparation for the potential commercial launch of abaloparatide-SC. The $27.4 million net non-cash adjustments to reconcile net loss to net cash used in operations included stock-based compensation expense of $26.1 million , and amortization of premiums (discounts) on marketable securities of $0.8 million .

Net cash used in operating activities during the year ended December 31, 2015 was $87.1 million, which was primarily the result of a net loss of $101.5 million and net changes in working capital of $4.0 million, partially offset by $18.4 million of net non-cash adjustments to reconcile net loss to net cash used in operations. The $101.5 million net loss was primarily due to abaloparatide-SC and pipeline program development expenses, along with employee compensation and consulting costs incurred to support future regulatory submissions, and preparation for the potential commercial launch of abaloparatide-SC. The $18.4 million net non-cash adjustments to reconcile net loss to net cash used in operations included stock-based compensation expense of $14.7 million, loss on retirement of note payable of $1.6 million and amortization of premiums (discounts) on marketable securities of $1.7 million.

Net cash used in operating activities during the year ended December 31, 2014 was $48.3 million, which was primarily the result of a net loss of $62.5 million, partially offset by $11.2 million of net non-cash adjustments to reconcile net loss to net cash used in operations and net changes in working capital of $3.0 million. The $62.5 million net loss was primarily due to expenses incurred in connection with our Phase 3 clinical trial of abaloparatide-SC. The $11.2 million net non-cash adjustments to reconcile net loss to net cash used in operations included stock-based compensation expense of $7.1 million, $2.7 million of research and development expenses settled in stock, and a $0.5 million increase in the fair value of our warrant liability and stock liability as a result of an increase in the fair value of the underlying convertible preferred stock and common stock from December 31, 2013 to June 6, 2014.

Cash Flows from Investing Activities

Net cash provided by investing activities for the year ended December 31, 2016 was $236.1 million , as compared to net cash used in investing activities of $239.8 million for the year ended December 31, 2015 .

The net cash provided by investing activities during the year ended December 31, 2016 was primarily a result of $499.6 million of net proceeds received from the sale or maturity of marketable securities, partially offset by $260.5 million in purchases of marketable securities and $2.9 million of purchases of property and equipment. The net cash used in investing activities during the year ended December 31, 2015 was primarily a result of $579.1 million in purchases of marketable securities and $1.2 million of purchases of property and equipment, partially offset by $340.5 million of net proceeds received from the sale or maturity of marketable securities.

Our investing cash flows will be impacted by the timing of purchases and sales of marketable securities. All of our marketable securities have contractual maturities of less than one year. Due to the short-term nature of our marketable securities, we would not expect our operational results or cash flows to be significantly affected by a change in market interest rates due to the short-term duration of our investments.

Cash Flows from Financing Activities

Net cash provided by financing activities for the year ended December 31, 2016 was $2.6 million , as compared to $458.1 million of net cash provided by financing activities for the year ended December 31, 2015 .

Net cash provided by financing activities during the year ended December 31, 2016 consisted of $2.6 million of proceeds as the result of stock option exercises.

Net cash provided by financing activities during the year ended December 31, 2015 consisted of $482.3 million of net proceeds received from public offerings of our common stock in January and July of 2015, partially offset by the repayment of our 2014 Credit Facility.

Net cash provided by financing activities during the year ended December 31, 2014 consisted of $50.4 million of net proceeds from our initial public offering, $53.4 million of net proceeds from our additional public offering that closed October 7, 2014, $27.4 million of net proceeds from the issuance of our series B-2 convertible preferred stock in February and March of 2014, and $24.6 million of net proceeds from our 2014 Credit Facility, partially offset by payments under a previous credit facility arrangement of $13.2 million.

Sales of Common Stock

On July 28, 2015, we completed a public offering of 4,054,054 shares of our common stock at a price of $74.00 per share, for aggregate proceeds, net of underwriting discounts, commissions and offering costs, of approximately $281.5 million. Also, on July 28, 2015, the underwriters purchased an additional 608,108 shares by exercising an option to purchase additional shares that was granted to them in connection with the offering. As a result of the public offering and subsequent exercise of the underwriters' option, we received aggregate proceeds, net of underwriting discounts, commissions and estimated offering costs of approximately $323.8 million.

On January 28, 2015, we completed a public offering of 4,000,000 shares of our common stock at a price of $36.75 per share, for aggregate estimated proceeds, net of underwriting discounts, commissions and offering costs, of approximately $137.8 million. On January 28, 2015, the underwriters purchased an additional 600,000 shares in the aggregate by exercising an option to purchase additional shares that was granted to them in connection with the offering. As a result of the public offering and subsequent exercise of the underwriters' option, we received aggregate proceeds, net of underwriting discounts, commissions and offering costs of approximately $158.4 million.

On October 7, 2014, we completed a public offering whereby we sold 2,750,000 shares of common stock at a price of $18.25 per share, for aggregate proceeds, net of underwriting discounts, commissions and offering costs, of approximately $46.9 million. On October 7, 2014, the underwriters purchased an additional 378,524 shares in the aggregate by exercising a portion of the over-allotment option granted to them in connection with the offering. As a result of the public offering and subsequent exercise of the over-allotment option, we received aggregate proceeds, net of underwriting discounts, commissions and offering costs of approximately $53.4 million.

On June 11, 2014, we completed our initial public offering whereby we sold 6,500,000 shares of our common stock at a price of $8.00 per share. The shares began trading on the NASDAQ Global Market on June 6, 2014. In connection with the completion of the offering, all outstanding shares of our convertible preferred stock converted into 19,465,132 shares of common stock, and 2,862,654 shares of common stock were issued in satisfaction of accumulated dividends accrued on the preferred stock. In addition, all outstanding warrants to purchase shares of series A-1 convertible preferred stock and warrants

to purchase shares of series B-2 convertible preferred stock were converted into the right to purchase 149,452 shares of common stock and our warrant liability was reclassified to equity. On June 18, 2014 and June 25, 2014, the underwriters purchased an additional 512,744 shares in the aggregate by exercising a portion of the over-allotment option granted to them in connection with the initial public offering. As a result of the closing of the initial public offering and subsequent exercise of the over-allotment option, we received aggregate proceeds, net of underwriting discounts, commissions and offering costs, of approximately $50.4 million.

Sales of Preferred Stock

We had no sales of preferred stock during the year ended December 31, 2016 and 2015. Through December 31, 2016 , we had received aggregate net cash proceeds of $238.2 million from the sale of shares of our preferred stock as follows:

Issue	Year	No. Shares	Net Proceeds (in thousands)
Series B redeemable convertible preferred stock (1)	2003, 2004, 2005	1,599,997	$ 23,775
Series C redeemable convertible preferred stock (1)	2006, 2007, 2008	10,146,629	82,096
Series A-1 convertible preferred stock (1)	2011	9,223,041	61,591
Series A-5 convertible preferred stock (1)	2011	64,430	525
Series B convertible preferred stock	2013	701,235	42,870
Series B-2 convertible preferred stock	2014	448,060	27,368
Total		22,183,392	$ 238,225

(1) Share amounts stated in pre-Merger shares, which converted into the rights to one-tenth of one share pursuant to the Merger.

On February 14, 2014, we entered into a Series B-2 Convertible Preferred Stock and Warrant Purchase Agreement, or Purchase Agreement, pursuant to which we were able to raise up to approximately $40.2 million through the issuance of (1) up to 655,000 series B-2 Shares convertible preferred stock, or Series B-2, par value $.0001 per share, and (2) warrants to acquire up to 718,201 shares of our common stock, at an exercise price of $14.004 per share. On February 14, 2014, February 19, 2014, February 24, 2014, March 14, 2014 and March 28, 2014, we consummated closings under the Series B-2 Purchase Agreement, whereby, in exchange for aggregate proceeds to us of approximately $27.5 million, we issued an aggregate of 448,060 Series B-2 Shares and warrants to purchase up to a total of 491,293 shares of our common stock. The warrants issuable pursuant to the Purchase Agreement are exercisable for a period of five years from issuance.

Upon completion of our initial public offering, all shares of preferred stock were converted into shares of our common stock.

Debt Borrowings

In May 2014, we entered into our 2014 Credit Facility with Solar and Oxford Finance, pursuant to which Solar and Oxford agreed to make available to us $30.0 million in the aggregate subject to certain conditions to funding. An initial term loan was made in May 2014 in an aggregate principal amount equal to $21.0 million, or the Initial Term Loan.

The Initial Term Loan bore interest per annum at 9.85% plus one-month LIBOR (customarily defined). All principal and accrued interest on the initial term loan had been due on June 1, 2018.

In July 2014, we entered into a first amendment to the 2014 Credit Facility, or the First Amendment. Pursuant to the terms of the First Amendment, a second term loan of $4.0 million was drawn in July 2014.

In August 2015, the Company prepaid all amounts owed under the 2014 Credit Facility and the First Amendment. After consideration of relevant fees required under the 2014 Credit Facility and the First Amendment, the total payment amounted to $26.5 million.

Future Financing Needs

We expect to finance the future development costs of our clinical product portfolio with our existing cash and cash equivalents and marketable securities, or through strategic financing opportunities that could include, but are not limited to, collaboration agreements, future offerings of our equity, royalty-based financing arrangements, or the incurrence of debt. We anticipate that we will make determinations as to which additional programs to pursue and how much funding to direct to each

program on an ongoing basis in response to the scientific and clinical data of each investigational product candidate, progress on securing third-party collaborators, as well as ongoing assessments of such investigational product candidate's commercial potential and our ability to fund this product development.

The successful development of our investigational product candidates is subject to numerous risks and uncertainties associated with developing drugs, including, but not limited to, the variables listed below. A change in the outcome of any of these variables with respect to the development of any of our investigational product candidates could mean a significant change in the cost and timing associated with the development of that investigational product candidate.

Abaloparatide-SC is our only investigational product candidate in late stage development and our business currently depends heavily on its successful regulatory approval and potential commercialization. We submitted an MAA to the EMA in November 2015 and submitted an NDA to the FDA in March 2016 with a PDUFA date of March 30, 2017. Obtaining approval of an investigational product candidate is an extensive, lengthy, expensive, and uncertain process, and any approval of abaloparatide-SC may be delayed, limited or denied for many reasons, including:

- we may not be able to demonstrate that abaloparatide is safe and effective as a treatment for reduction of fracture risk in women with postmenopausal osteoporosis to the satisfaction of the FDA or other foreign regulatory authorities;
- the results of our clinical studies may not meet the level of statistical or clinical significance required for marketing approval;
- the FDA or other foreign regulatory authorities may disagree with the number, design, size, conduct or implementation of our clinical studies;
- the CRO or other study personnel that we retain to conduct clinical studies may take actions outside of our control that materially adversely impact our clinical studies;
- the FDA or other foreign regulatory authorities may not find the data from preclinical studies and clinical studies sufficient to demonstrate that abaloparatide's clinical and other potential benefits outweigh its safety risks;
- the FDA or other foreign regulatory authorities may disagree with our interpretation of data from our preclinical studies and clinical studies or may require that we conduct additional studies;
- the FDA or other foreign regulatory authorities may not agree with our proposed labeling and may require labeling that undermines or otherwise significantly impairs the commercial value of the product if it were to be approved with such labeling;
- the FDA or other foreign regulatory authorities may not accept data generated at our clinical study sites;
- the FDA may require development of a Risk Evaluation and Mitigation Strategy, or REMS, as a condition of approval;
- if our NDA is reviewed by an advisory committee, the FDA may have difficulties scheduling an advisory committee meeting in a timely manner or the advisory committee may recommend against approval of our application or may recommend that the FDA require, as a condition of approval, additional preclinical studies or clinical studies, limitations on approved labeling or distribution and use restrictions; or
- the FDA or other foreign regulatory authorities may identify deficiencies in the manufacturing processes or facilities of our third-party manufacturers.

In addition, the FDA or other foreign regulatory authorities may change their approval policies or adopt new regulations.

Contractual Obligations and Commitments

Contractual obligations represent future cash commitments and liabilities under agreements with third parties, and exclude contingent liabilities for which we cannot reasonably predict future payment. We enter into contracts in the normal course of business with CROs for preclinical and clinical research studies, research supplies and other services and products for operating purposes. These contracts generally provide for termination on notice, and therefore are cancelable contracts and not included in the table of contractual obligations and commitments. In addition, we have certain obligations to make future payments to third parties that become due and payable on the achievement of certain development, regulatory and commercial milestones, such as the start of a clinical trial, filing of an NDA, approval by the FDA, or product launch. The table below excludes these potential payments we may be required to make under our agreements because the timing of payments and actual amounts paid under those agreements may be different depending on the timing of receipt of goods or services or changes to agreed-upon terms or amounts for some obligations, and those agreements are cancelable upon written notice by us and therefore, not long-term liabilities. Additionally, the expected timing of payment of the obligations presented below is estimated based on current information.

Our contractual obligations result from property leases for office space. However, more information regarding significant contracts with CROs and our obligations to make future payments to third parties that become due and payable upon achievement of certain development, regulatory and commercial milestones can be found below under "Research and Development Agreements" and "License Agreement Obligations".

The following table summarizes our contractual obligations at December 31, 2016 :

	Total	Less than 1 Year	1 to 3 Years	3 to 5 Years	More than 5 Years
			(in thousands)		
Operating lease obligations	$ 7,914	$ 3,020	$ 3,702	$ 1,192	$ —

In June 2016, the Massachusetts Life Sciences Center awarded us approximately $0.5 million of tax incentives under its Life Science Tax Incentive Program, which allows us a cash refund equivalent to $473 thousand of state research and development tax credits. We expect to receive this payment in the first quarter of 2017. In exchange for these incentives, we pledged to hire an incremental 35 employees in Massachusetts and to maintain the additional headcount through at least December 31, 2020. Failure to do so could result in us being required to repay some or all of these incentives. This contingent obligation has not been included in the above table as we cannot estimate if, or when, it will become payable.

Research and Development Agreements

Abaloparatide-SC Phase 3 Clinical Trial —We entered into agreements with Nordic Bioscience Clinical Development VII A/S, or Nordic, to conduct our Phase 3 clinical trial of abaloparatide-SC, or the Phase 3 Clinical Trial. In February 2013, we contracted with Nordic for it to perform an extension study to evaluate six months of standard-of-care osteoporosis management following the completion of the Phase 3 Clinical Trial (the "Extension Study"), and, upon completion of this initial six months, an additional period of 18 months of standard-of-care osteoporosis management (the "Second Extension").

In April 2015, we contracted with Nordic to perform additional services, including additional monitoring of patients enrolled in the Second Extension. Payments in cash to be made to Nordic for these additional services are denominated in euro and total up to approximately €4.1 million ($4.3 million).

Payments in cash to be made to Nordic for the services related to the Extension Study and the Second Extension are denominated in both euros and U.S. dollars and total up to €11.9 million ($12.5 million) and $1.1 million, respectively. As of December 31, 2016, the last patient last visit in the Second Extension had occurred and all obligations due to Nordic in relation to the Extension Study have been paid.

We recognize research and development expense for the amounts due to Nordic under the Extension Study and the Second Extension ratably over the estimated per patient treatment periods beginning upon enrollment, or over a nine-month and nineteen-month period, respectively. The Company recorded $2.5 million, $5.4 million, and $9.6 million, for the years ended December 31, 2016, 2015, and 2014 respectively, for per patient costs incurred.

As of December 31, 2016 , we had a liability of $1.2 million reflected in accrued expenses and other current liabilities on the balance sheet resulting from services provided by Nordic under the Second Extension, which are payable in cash.

We are also responsible for certain pass-through costs in connection with the clinical trials noted above. Pass-through costs are expensed as incurred or upon delivery. We recognized research and development expense of $1.1 million, $1.1 million, and $1.3 million for pass through costs during years ended December 31, 2016 , 2015 , and 2014 , respectively.

We estimate that our future cash obligations to Nordic for services in connection with the Second Extension will approximate $1.3 million , excluding pass through costs, payable within 1 year.

License Agreement Obligations

Abaloparatide

In September 2005, we entered into a license agreement with Ipsen Pharma SAS, or Ipsen, as amended, or the License Agreement, under which we exclusively licensed certain Ipsen compound technology and related patents covering abaloparatide to research, develop, manufacture and commercialize certain compounds and related products in all countries, except Japan (where we do not hold abaloparatide-SC development and commercialization rights) and France (where our commercialization rights were subject to certain co-marketing and co-promotion rights exercisable by Ipsen, provided that certain conditions included in the License Agreement were met). We believe that Ipsen's co-marketing and co-promotion rights in France have permanently expired. Ipsen also granted us an exclusive right and license under the Ipsen compound technology and related patents to make and have made compounds or product in Japan. Ipsen further granted us an exclusive right and license under certain Ipsen formulation technology and related patents solely for purposes of enabling us to develop, manufacture and commercialize compounds and products covered by the compound technology license in all countries, except Japan and France (as discussed above).

In consideration for the rights to abaloparatide and in recognition of certain milestones having been met to date, we have paid to Ipsen an aggregate amount of $4.3 million. The license agreement further requires us to make payments upon the achievement of certain future regulatory and commercial milestones. Total additional milestone payments that could be payable under the agreement are €32.0 million ($33.6 million). Should abaloparatide be approved and subsequently commercialized, the agreement provides that we would pay to Ipsen a fixed five percent royalty based on net sales of the product by us or our sublicensees on a country-by-country basis until the later of the last to expire of the licensed patents or for a period of 10 years after the first commercial sale in such country. The date of the last to expire of the abaloparatide patents licensed from or co-owned with Ipsen, barring any extension thereof, is expected to be March 26, 2028. In the event that we sublicense abaloparatide to a third party, the agreement provides that we would pay a percentage of certain payments received from such sublicensee (in lieu of milestone payments not achieved at the time of such sublicense). The applicable percentage is in the low double digit range. In addition, if we or our sublicensees commercialize a product that includes a compound discovered by us based on or derived from confidential Ipsen know-how, the agreement provides that we would pay to Ipsen a fixed low single digit royalty on net sales of such product on a country-by-country basis until the later of the last to expire of licensed patents that cover such product or for a period of 10 years after the first commercial sale of such product in such country. The agreement contains other customary clauses and terms as are common in similar agreements in the industry.

Prior to executing the license agreement for abaloparatide with us, Ipsen licensed the Japanese rights for abaloparatide to Teijin Limited, or Teijin, a Japanese pharmaceutical company. Teijin has completed a Phase 2 clinical study of abaloparatide in Japan for the treatment of postmenopausal osteoporosis.

We are currently in arbitration proceedings with Ipsen in connection with the License Agreement. See “Legal Proceedings” for more information.

RAD1901

We exclusively licensed the worldwide rights to RAD1901 from Eisai Co. Ltd., or Eisai. Our license with Eisai did not originally include rights for Japan, however, in March 2015, we entered into an amendment to the Eisai Agreement under which Eisai granted us an exclusive right and license to research, develop, manufacture and commercialize RAD1901 in Japan. In consideration for the rights to RAD1901 in Japan, we paid Eisai an initial license fee of $0.4 million upon execution of the amendment, which was expensed during the three months ended March 31, 2015.

In consideration for the worldwide rights to RAD1901 and in recognition of certain milestones having been met to date, we have paid to Eisai an aggregate amount of $1.9 million. Total additional milestone payments that could be payable under the Eisai agreement, as amended, are $22.3 million, payable upon the achievement of certain future clinical and regulatory milestones. Should RAD1901 be approved and subsequently become commercialized, we will be obligated to pay to Eisai a royalty in a variable mid-single digit range based on net sales of the product on a country-by-country basis for a period that expires on the later of (1) the date the last remaining valid claim in the licensed patents expires, lapses or is invalidated in that country, the product is not covered by data protection clauses, and the sales of lawful generic version of the product account for more than a specified percentage of the total sales of all pharmaceutical products containing the licensed compound in that

country; or (2) a period of 10 years after the first commercial sale of the licensed products in such country, unless it is sooner terminated. The latest licensed patent is expected to expire, barring any extension thereof, on August 18, 2026. The royalty rate shall then be subject to reduction and the royalty obligation will expire at such time as sales of lawful generic versions of such product account for more than a specified minimum percentage of the total sales of all products that contain the licensed compound. We were also granted the right to grant sublicenses with prior written approval from Eisai. If we sublicense RAD1901 to a third party, we will be obligated to pay Eisai, in addition to the milestones referenced above, a fixed low double digit percentage of certain fees we receive from such sublicensee and royalties in a variable mid-single digit range based on net sales of the sublicensee. The license agreement contains other customary clauses and terms as are common in similar agreements in the industry.

Net Operating Loss Carryforwards

As of December 31, 2016 , we had federal and state net operating loss carryforwards of approximately $526.7 million and $385.3 million , respectively, the use of which may be limited, as described below. If not utilized, the net operating loss carryforwards will expire at various dates through 2036.

Under Section 382 of the Code, substantial changes in our ownership may limit the amount of net operating loss carryforwards that could be used annually in the future to offset taxable income. Specifically, this limitation may arise in the event of a cumulative change in ownership of our company of more than 50% within a three-year period. Any such annual limitation may significantly reduce the utilization of the net operating loss carryforwards before they expire. The private placements and other transactions that have occurred since our inception, may have triggered an ownership change pursuant to Section 382, which could limit the amount of net operating loss carryforwards that could be utilized annually in the future to offset taxable income, if any. Any such limitation, whether as the result of prior private placements, sales of common stock by our existing stockholders or additional sales of common stock by us, could have a material adverse effect on our results of operations in future years. We have completed studies through December 31, 2015, to determine whether any ownership change has occurred since our formation and have determined that transactions have resulted in two ownership changes, as defined under Section 382. There could be additional ownership changes in the future that could further limit the amount of net operating loss and tax credit carryforwards that we can utilize.

In each period since our inception, we have recorded a valuation allowance for the full amount of our deferred tax asset, as the realization of the deferred tax asset is uncertain. As a result, we have not recorded any federal or state income tax benefit in our statement of operations.

Off-Balance Sheet Arrangements

We do not have any off-balance sheet arrangements or any relationships with unconsolidated entities of financial partnerships, such as entities often referred to as structured finance or special purpose entities.

Accounting Standards Updates

For a discussion of recent accounting standards updates, see Note 2 to our consolidated financial statements included in this Annual Report.

ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK.

We are exposed to market risk related to changes in the dollar/euro exchange rate because a portion of our development costs are denominated in euros. We do not hedge our foreign currency exchange rate risk. However, an immediate 10 percent adverse change in the dollar/euro exchange rate would not have a material effect on financial results.

We are exposed to market risk related to changes in interest rates. As of December 31, 2016 , we had cash, cash equivalents and short-term marketable securities of $332.4 million , consisting of cash, money market funds, domestic corporate debt securities, domestic corporate commercial paper, and asset-backed securities. This exposure to market risk is interest rate sensitivity, which is affected by changes in the general level of U.S. interest rates, particularly because our investments are in marketable securities. Due to the short-term duration of our investment portfolio and the low risk profile of our investments, an immediate 10% change in interest rates would not have a material effect on the fair market value of our portfolio. We generally have the ability to hold our investments until maturity, and therefore we would not expect our operating results or cash flows to be affected to any significant degree by the effect of a change in market interest rates on our investments. We carry our investments based on publicly available information. As of December 31, 2016 , we do not have any hard to value investment securities or securities for which a market is not readily available or active.

We are not subject to significant credit risk as this risk does not have the potential to materially impact the value of assets and liabilities.

ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA.

FINANCIAL STATEMENTS
Radius Health, Inc.
Index to Consolidated Financial Statements

Report of Independent Registered Public Accounting Firm

The Board of Directors and Shareholders of Radius Health, Inc.

We have audited the accompanying consolidated balance sheets of Radius Health, Inc. as of December 31, 2016 and 2015 , and the related consolidated statements of operations and comprehensive loss, convertible preferred stock, redeemable convertible preferred stock and stockholders' equity (deficit), and cash flows for each of the three years in the period ended December 31, 2016 . These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these financial statements based on our audits.

We conducted our audits in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, the financial statements referred to above present fairly, in all material respects, the consolidated financial position of Radius Health, Inc. at December 31, 2016 and 2015 , and the consolidated results of its operations and its cash flows for each of the three years in the period ended December 31, 2016 , in conformity with U.S. generally accepted accounting principles.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), Radius Health, Inc.'s internal control over financial reporting as of December 31, 2016 , based on criteria established in Internal Control—Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework) and our report dated February 24, 2017 expressed an unqualified opinion thereon.

/s/ Ernst & Young LLP

Boston, Massachusetts
February 24, 2017

Radius Health, Inc.
Consolidated Balance Sheets
(In thousands, except share and per share amounts)

	December 31, 2016	December 31, 2015
ASSETS		
Current assets:		
Cash and cash equivalents	$ 258,567	$ 159,678
Restricted cash	47	—
Marketable securities	73,880	313,661
Prepaid expenses and other current assets	2,315	6,969
Total current assets	334,809	480,308
Property and equipment, net	4,922	1,897
Other assets	551	260
Total assets	$ 340,282	$ 482,465
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Accounts payable	$ 6,128	$ 6,228
Accrued expenses and other current liabilities	26,597	14,952
Total current liabilities	32,725	21,180
Other non-current liabilities	379	—
Total liabilities	$ 33,104	$ 21,180
Commitments and contingencies		
Stockholders' equity:		
Common stock, $.0001 par value; 200,000,000 shares authorized, 43,141,134 shares and 42,984,243 shares issued and outstanding at December 31, 2016 and 2015, respectively	4	4
Additional paid-in-capital	935,671	907,040
Accumulated other comprehensive income	71	5
Accumulated deficit	(628,568)	(445,764)
Total stockholders' equity	307,178	461,285
Total liabilities and stockholders' equity	$ 340,282	$ 482,465

See accompanying notes to consolidated financial statements.

Radius Health, Inc.
Consolidated Statements of Operations and Comprehensive Loss
(In thousands, except share and per share amounts)

	December 31,		
	2016	**2015**	**2014**
OPERATING EXPENSES:			
Research and development	$ 107,406	$ 68,280	$ 45,719
General and administrative	77,542	30,797	13,674
Loss from operations	(184,948)	(99,077)	(59,393)
OTHER (EXPENSE) INCOME:			
Other (expense), net	(293)	(35)	(510)
Loss on retirement of note payable	—	(1,572)	(203)
Interest income	2,437	1,043	94
Interest expense	—	(1,885)	(2,467)
NET LOSS	$ (182,804)	$ (101,526)	$ (62,479)
OTHER COMPREHENSIVE LOSS, NET OF TAX:			
Unrealized gain (loss) from available-for-sale securities	66	26	(21)
COMPREHENSIVE LOSS	$ (182,738)	$ (101,500)	$ (62,500)
LOSS ATTRIBUTABLE TO COMMON STOCKHOLDERS—BASIC AND DILUTED (Note 12)	$ (182,804)	$ (101,526)	$ (71,479)
LOSS PER SHARE:			
Basic and diluted	$ (4.24)	$ (2.56)	$ (4.04)
WEIGHTED AVERAGE SHARES:			
Basic and diluted	43,067,952	39,643,099	17,699,487

See accompanying notes to consolidated financial statements.

Radius Health, Inc.
Consolidated Statements of Convertible Preferred Stock, Redeemable Convertible Preferred Stock and Stockholders' Equity (Deficit)

(In thousands, except share and per share amounts)

	Convertible Preferred Stock															
	Series B-2		Series B		Series A-1		Series A-2		Series A-3		Series A-4		Series A-5		Series A-6	
	Shares	Amount	Shares	Amount	Shares	Amount	Shares	Amount	Shares	Amount	Shares	Amount	Shares	Amount	Shares	Amount
Balance at December 31, 2013	—	$ —	701,235	$43,892	939,612	$78,737	983,208	$93,977	142,227	$12,232	3,998	$ 271	6,443	$ 525	496,111	$23,168
Net loss																
Unrealized loss from available-for-sale securities																
Issuance of preferred stock	448,060	26,152													186,847	10,109
Accretion of dividends on preferred stock		685		1,515		3,084		3,246		470						
Issuance of warrants																
Exercise of warrants																
Stock options exercised																
Stock-based compensation expense																
Issuance of common stock, net																
Conversion of convertible preferred stock into common stock	(448,060)	(26,837)	(701,235)	(45,407)	(939,612)	(81,821)	(983,208)	(97,223)	(142,227)	(12,702)	(3,998)	(271)	(6,443)	(525)	(682,958)	(33,277)
Reclassification of warrant liability to additional paid in capital																

	Convertible Preferred Stock															
	Series B-2		Series B		Series A-1		Series A-2		Series A-3		Series A-4		Series A-5		Series A-6	
	Shares	Amount	Shares	Amount	Shares	Amount	Shares	Amount	Shares	Amount	Shares	Amount	Shares	Amount	Shares	Amount
Balance at December 31, 2014	—	$ —	—	$ —	—	$ —	—	$ —	—	$ —	—	$ —	—	$ —	—	$ —
Net loss																
Unrealized gain from available-for-sale securities																
Exercise of warrants																
Exercise of options																
Stock-based compensation expense																
Issuance of common stock, net																
Balance at December 31, 2015	—	$ —	—	$ —	—	$ —	—	$ —	—	$ —	—	$ —	—	$ —	—	$ —
Net loss																
Unrealized gain from available-for-sale securities																
Exercise of warrants																
Exercise of options																
Stock-based compensation expense																
Issuance of common stock, net																
Balance at December 31, 2016	—	$ —	—	$ —	—	$ —	—	$ —	—	$ —	—	$ —	—	$ —	—	$ —

See accompanying notes to consolidated financial statements.

Radius Health, Inc.
Consolidated Statements of Convertible Preferred Stock, Redeemable Convertible Preferred Stock and Stockholders' Equity (Deficit) (Continued)

(In thousands, except share and per share amounts)

	Stockholders' Equity (Deficit)					
	Common Stock		Additional Paid-In Capital Amount	Accumulated Other Comprehensive Income (Loss)	Accumulated Deficit	Total Stockholders' (Deficit) Equity
	Shares	Amount	Amount	Amount	Amount	Amount
Balance at December 31, 2013	385,664	$ —	$ —	$ —	$ (277,301)	$ (277,301)
Net loss					(62,479)	(62,479)
Unrealized loss from available-for-sale securities				(21)		(21)
Issuance of preferred stock						—
Accretion of dividends on preferred stock			(4,542)		(4,458)	(9,000)
Issuance of warrants			41			41
Exercise of warrants	20,435					—
Stock options exercised	49,382		170			170
Share-based compensation expense			7,070			7,070
Issuance of common stock, net	10,141,268	1	103,803			103,804
Conversion of convertible preferred stock into common stock	22,327,786	2	298,061			298,063
Reclassification of warrant liability to additional paid in capital			3,117			3,117
December 31, 2014	32,924,535	$ 3	$ 407,720	$ (21)	$ (344,238)	$ 63,464
Net loss					(101,526)	(101,526)
Unrealized gain from available-for-sale securities				26		26
Exercise of warrants	529,862					—
Exercise of options	267,684		2,337			2,337
Share-based compensation expense			14,734			14,734
Balance at Issuance of common stock, net	9,262,162	1	482,249			482,250
December 31, 2015	42,984,243	$ 4	$ 907,040	$ 5	$ (445,764)	$ 461,285
Net loss					(182,804)	(182,804)
Unrealized gain from available-for-sale securities				66		66
Exercise of warrants	19,172					—
Exercise of options	137,719		2,573			2,573
Share-based compensation expense			26,058			26,058
Balance at Issuance of common stock, net						—
Balance at December 31, 2016	43,141,134	$ 4	$ 935,671	$ 71	$ (628,568)	$ 307,178

See accompanying notes to consolidated financial statements.

Radius Health, Inc.
Consolidated Statements of Cash Flows
(In thousands)

	Year Ended December 31,		
	2016	2015	2014
CASH FLOWS USED IN OPERATING ACTIVITIES:			
Net loss	$ (182,804)	$ (101,526)	$ (62,479)
Adjustments to reconcile net loss to net cash used in operating activities:			
Depreciation and amortization	586	176	77
Amortization of premium (accretion of discount) marketable securities, net	791	1,714	429
Stock-based compensation expense	26,058	14,734	7,070
Research and development expense settled in stock	—	—	2,717
Change in fair value of other current assets, warrant liability and other liability	—	—	505
Non-cash interest	—	183	295
Loss on retirement of note payable	—	1,572	57
Changes in operating assets and liabilities:			
Prepaid expenses and other current assets	4,607	(4,914)	(1,639)
Other long-term assets	(291)	(108)	(105)
Accounts payable	(100)	3,936	1,991
Accrued expenses and other current liabilities	11,349	(2,870)	2,737
Net cash used in operating activities	(139,804)	(87,103)	(48,345)
CASH FLOWS (USED IN) PROVIDED BY INVESTING ACTIVITIES:			
Purchases of property and equipment	(2,936)	(1,231)	(857)
Purchases of marketable securities	(260,547)	(579,088)	(97,678)
Sales and maturities of marketable securities	499,603	340,497	20,470
Net cash (used in) provided by investing activities	236,120	(239,822)	(78,065)
CASH FLOWS PROVIDED BY FINANCING ACTIVITIES:			
Proceeds from exercise of stock options	2,573	2,337	170
Net proceeds from the issuance of preferred stock, net	—	—	27,368
Proceeds from note payable, net	—	—	24,555
Proceeds from issuance of common stock, net	—	482,250	103,804
Deferred financing costs	—	—	(116)
Payments on note payable	—	(25,000)	(13,156)
Fee for early prepayment of note payable	—	(1,502)	—
Net cash provided by financing activities	2,573	458,085	142,625
NET INCREASE IN CASH AND CASH EQUIVALENTS	98,889	131,160	16,215
CASH AND CASH EQUIVALENTS AT BEGINNING OF YEAR	159,678	28,518	12,303
CASH AND CASH EQUIVALENTS AT END OF YEAR	$ 258,567	$ 159,678	$ 28,518
SUPPLEMENTAL DISCLOSURES:			
Cash paid for interest	$ —	$ 1,490	$ 1,971
Property and equipment purchases in accrued expense at period end	$ 675	$ —	$ —
NON-CASH FINANCING ACTIVITIES:			
Accretion of dividends on preferred stock	$ —	$ —	$ 9,000
Reclassification of preferred stock to common stock	$ —	$ —	$ 298,063
Fair value of series A-6 convertible preferred stock issued as settlement of liability	$ —	$ —	$ 10,109
Fair value of warrants issued	$ —	$ —	$ 1,552

See accompanying notes to consolidated financial statements.

Radius Health, Inc.

Notes to Consolidated Financial Statements

1. N ature of Business

Radius Health, Inc. ("Radius" or the "Company") is a science-driven biopharmaceutical company that is committed to developing innovative therapeutics in the areas of osteoporosis, oncology and endocrine diseases. The Company's lead product candidate, the investigational drug abaloparatide for subcutaneous injection ("abaloparatide-SC"), has completed Phase 3 development for potential use in the reduction of fracture risk in women with postmenopausal osteoporosis. Radius' New Drug Application ("NDA"), for abaloparatide-SC is under regulatory review by the U.S. Food and Drug Administration ("FDA"), with a Prescription Drug User Fee Act ("PDUFA") date of March 30, 2017. Radius' European Marketing Authorisation Application ("MAA") for abaloparatide-SC is under review by the Committee for Medicinal Products for Human Use of the EMA ("CHMP"). The Radius clinical pipeline also includes an investigational abaloparatide transdermal patch ("abaloparatide-TD") for potential use in the treatment of women with postmenopausal osteoporosis and the investigational drug RAD1901 for potential use in the treatment of hormone-driven and/or hormone-resistant breast cancer, as well as for potential use in the treatment of vasomotor symptoms in postmenopausal women. Radius' clinical pipeline includes RAD140, a non-steroidal selective androgen receptor modulator, under investigation for potential use in the treatment of breast cancer.

The Company is subject to the risks associated with emerging companies with a limited operating history, including dependence on key individuals, a developing business model, the necessity of securing regulatory approvals to market its investigational product candidates, market acceptance of the Company's investigational product candidates following receipt of regulatory approval, competition for its investigational product candidates following receipt of regulatory approval, and the continued ability to obtain adequate financing to fund the Company's future operations. The Company has incurred losses and expects to continue to incur additional losses for the foreseeable future. As of December 31, 2016 , the Company had an accumulated deficit of $ 628.6 million , and total cash, cash equivalents and marketable securities of $ 332.4 million .

Based upon its cash, cash equivalents and marketable securities balance as of December 31, 2016 , the Company believes that, prior to the consideration of revenue from the potential future sales of any of its investigational products that may receive regulatory approval or proceeds from partnering and/or collaboration activities, it has sufficient capital to fund its development plans, U.S. commercial scale-up and other operational activities, for not less than twelve months from the date of this filing and into 2018. The Company expects to finance the future development costs of its clinical product portfolio with its existing cash and cash equivalents and marketable securities, or through strategic financing opportunities that could include, but are not limited to collaboration agreements, future offerings of its equity, or the incurrence of debt. However, there is no guarantee that any of these strategic or financing opportunities will be executed or executed on favorable terms, and some could be dilutive to existing stockholders. If the Company fails to obtain additional future capital, it may be unable to complete its planned preclinical studies and clinical trials and obtain approval of certain investigational product candidates from the FDA or foreign regulatory authorities.

2. Summary of Significant Accounting Policies

Basis of Presentation —The consolidated financial statements include the accounts of the Company and its wholly-owned subsidiaries. All material intercompany balances and transactions have been eliminated in consolidation.

Reverse Stock Split —On April 24, 2014, the Company effected a reverse stock split of the Company's common stock. The number of authorized shares of the Company's common stock and the par value did not change. Pursuant to the stock split, every 2.28 shares of the Company's issued and outstanding common stock were automatically combined into one issued and outstanding share of the Company's common stock. All shares and per share amounts in the financial statements and accompanying notes have been retroactively adjusted to give effect to the reverse stock split.

Use of Estimates —The preparation of consolidated financial statements in conformity with accounting principles generally accepted in the United States ("GAAP") requires the Company's management to make estimates and assumptions that affect the amounts reported in the consolidated financial statements and accompanying notes. Actual results could differ from those estimates. The Company considers events or transactions that occur after the balance sheet date but before the consolidated financial statements are issued as additional evidence for certain estimates or to identify matters that require additional disclosure. Subsequent events have been evaluated up to the date of issuance of these consolidated financial statements.

Cash Equivalents —The Company considers all highly liquid investment instruments with an original maturity when purchased of three months or less to be cash equivalents. Money market funds represents a majority of the cash equivalents balance at December 31, 2016 and 2015 .

Marketable Securities —All investment instruments with an original maturity date, when purchased, in excess of three months have been classified as current marketable securities. The Company classifies securities that are available to fund current operations as current assets. These marketable securities are classified as available-for-sale and are carried at fair value. Unrealized gains and losses, if any, are included within other comprehensive (loss) income within stockholders' equity (deficit). The amortized cost of debt securities in this category is adjusted for amortization of premiums and accretion of discounts to maturity. Such amortization is included in interest income. Realized gains and losses on available-for-sale securities are included in interest income. The cost of securities sold is based on the specific identification method. The Company periodically reviews the portfolio of securities to determine whether an other-than-temporary impairment has occurred. No such losses have occurred to date. There were no realized gains or losses on the sale of securities for the years ended December 31, 2016 and 2015 .

Fair Value Measurements —The Company determines the fair market values of its financial instruments based on the fair value hierarchy, which requires an entity to maximize the use of observable inputs and minimize the use of unobservable inputs when measuring fair value. The following are three levels of inputs that may be used to measure fair value:

Level 1 Quoted prices in active markets for identical assets or liabilities that the Company has the ability to access at the measurement date.

Level 2 Observable inputs other than Level 1 prices such as quoted prices for similar assets or liabilities; quoted prices in markets that are not active; or other inputs that are observable or can be corroborated by observable market data for substantially the full term of the assets or liabilities.

Level 3 Unobservable inputs that are supported by little or no market activity and that are significant to the fair value of the assets or liabilities.

Concentrations of Credit Risk and Off-Balance-Sheet Risk —Financial instruments that potentially subject the Company to credit risk primarily consist of cash and cash equivalents and available-for-sale marketable securities. The Company mitigates its risk with respect to cash and cash equivalents and marketable securities by maintaining its deposits and investments at high-quality financial institutions. The Company invests any excess cash in money market funds and other securities, and the management of these investments is not discretionary on the part of the financial institution. The Company has no significant off-balance-sheet risks such as foreign exchange contracts, option contracts, or other hedging arrangements.

Inventory —The Company capitalizes inventories produced in preparation for initiating sales of a drug candidate when the related drug candidate is approved or considered to have a high likelihood of regulatory approval and the related costs are expected to be recoverable through sales of the inventories. Inventory capitalization begins after receiving approval for the New Drug Application filed with the U.S. Food and Drug Administration, or an international equivalent. Determining whether or not to continue to record the commercial supply costs related to a product candidate as research and development expenses, or to capitalize these costs as inventory, involves significant judgment. There were no capitalized inventories as of December 31, 2016 and 2015 .

Property and Equipment —Property and equipment are recorded at cost and depreciated using the straight-line method over the estimated useful lives of the respective assets.

Research and Development Costs —The Company accounts for research and development costs by expensing such costs to operations as incurred. Research and development costs primarily consist of clinical testing costs, including payments made to contract research organizations, personnel costs, outsourced research activities, laboratory supplies, and license fees.

Nonrefundable advance payments for goods or services to be received in the future for use in research and development activities are deferred and capitalized. The capitalized amounts are expensed as the related goods are delivered or the services are performed.

Licensing Agreements —Costs associated with licensing early stage technology are expensed as incurred, and are included in research and development expenses.

Impairment of Long-Lived Assets —The Company evaluates long-lived assets for potential impairment when there is evidence that events or changes in circumstances have occurred that indicate that the carrying amount of a long-lived asset may not be recovered. Recoverability of these assets is assessed based on the undiscounted expected future cash flows from the assets, considering a number of factors, including past operating results, budgets and economic projections, market trends, and product development cycles. Impairment in the carrying value of each asset is assessed when the undiscounted expected future cash flows derived from the asset are less than its carrying value.

An impairment loss would be recognized in an amount equal to the excess of the carrying amount over the undiscounted expected future cash flows. No impairment charges have been recognized since the Company's inception.

Segment Information —Operating segments are defined as components of an enterprise engaged in business activities for which discrete financial information is available and regularly reviewed by the chief decision maker in determining how to allocate resources and in assessing performance. The Company views its operations and manages its business as one operating segment and operates in one geographic area.

Income Taxes —The Company recognizes deferred tax assets and liabilities for the future tax consequences attributable to differences between the financial statement carrying amounts of existing assets and liabilities and their respective tax basis, as well as operating loss and tax credit carryforwards. The Company measures deferred tax assets and liabilities using enacted tax rates expected to apply to taxable income in the years in which those temporary differences and carryforwards are expected to be recovered or settled. Deferred tax assets are reduced by a valuation allowance to reflect the uncertainty associated with their ultimate realization. The effect on deferred tax assets and liabilities as a result of a change in tax rates is recognized as income in the period that includes the enactment date.

The Company uses judgment to determine the recognition threshold and measurement attribute for financial statement recognition and measurement of a tax position taken or expected to be taken in a tax return. Any material interest and penalties related to unrecognized tax benefits are recognized in income tax expense.

Due to uncertainty surrounding the realization of the favorable tax attributes in future tax returns the Company has recorded a full valuation allowance against otherwise realizable net deferred tax assets as of December 31, 2016 and 2015 .

Financial Instruments Indexed to, and Potentially Settled in, the Company's Common Stock —The Company evaluates all financial instruments issued in connection with its debt borrowings and equity offerings when determining the proper accounting treatment for such instruments in the Company's consolidated financial statements. The Company considers a number of generally accepted accounting principles to determine such treatment and evaluates the features of the instrument to determine the appropriate accounting treatment. The Company utilizes the Black-Scholes method or other appropriate methods to determine the fair value of its derivative financial instruments. Key valuation factors in determining the fair value include, but are not limited to, the current stock price as of the date of measurement, the exercise price, the remaining contractual life, expected volatility for the instrument and the risk-free interest rate. For financial instruments that are determined to be classified as liabilities on the balance sheet, changes in fair value are recorded as a gain or loss in the Company's statement of operations, with the corresponding amount recorded as an adjustment to the liability on its balance sheet.

Stock-Based Compensation-Options —The Company measures stock-based compensation cost at the accounting measurement date based on the fair value of the option, and recognizes the expense related to awards to employees on a straight-line basis over the requisite service period of the option, which is typically the vesting period.

The Company estimates the fair value of each option using the Black-Scholes option pricing model that takes into account the fair value of its common stock, the exercise price, the expected life of the option, the expected volatility of its common stock, expected dividends on its common stock, and the risk-free interest rate over the expected life of the option. Due to the limited trading history of the Company's common stock since its initial public offering in June 2014, the Company uses the simplified method described in the SEC's Staff Accounting Bulletin No. 107, *Share-Based Payment,* to determine the expected life of the option grants. The estimate of expected volatility is based on a review of the historical volatility of similar publicly held companies in the biotechnology field over a period commensurate with the option's expected term. The Company has never declared or paid any cash dividends on its common stock and does not expect to do so in the foreseeable future. Accordingly, it uses an expected dividend yield of zero . The risk-free rate is based on the U.S. Treasury yield curve in effect at the time of grant valuation for a period commensurate with the option's expected term. These assumptions are highly subjective and changes in them could significantly impact the value of the option and hence the related compensation expense.

The Company applies an estimated forfeiture rate to current period expense to recognize compensation expense only for those awards expected to vest. Forfeitures are estimated based upon historical data, adjusted for known trends, and the Company will adjust the estimate of forfeitures if actual forfeitures differ or are expected to differ from such estimates. Subsequent changes in estimated forfeitures are recognized through a cumulative adjustment in the period of change and also will impact the amount of stock-based compensation expense in future periods.

Stock-based compensation expense recognized for options granted to consultants is also based upon the fair value of the options issued, as determined by the Black-Scholes option pricing model and recognized on an accelerated basis. However, the unvested portion of such option grants is re-measured at each reporting period, until such time as the option is fully vested.

Stock-Based Compensation-Performance Units —The Company measures stock-based compensation cost at the accounting measurement date based on the fair value of the performance unit grant, and recognizes the expense over the derived service period of the performance units.

The Company estimates the fair value of each grant using a Monte Carlo simulation analysis that takes into account the forecasted price of its common stock, historical volatility of its common stock, risk-free rate as of valuation date, price of its common stock as of the grant date and the trigger for the performance condition to be met.

The derived service period for each grant is calculated using a Monte Carlo simulation analysis.

Net Loss Per Common Share —Net loss per common share is calculated using an earnings allocation formula that determines net loss per share for the holders of the Company's common shares and participating securities. Prior to the initial public offering, all of the Company's series of preferred stock contained participation rights in any dividend paid by the Company and were deemed to be participating securities. Net income available to common shareholders and participating preferred shares was allocated to each share on an as-converted basis as if all of the earnings for the period had been distributed. The participating securities do not include a contractual obligation to share in losses of the Company and are not included in the calculation of net loss per share in the periods that have a net loss.

Diluted net income per share is computed using the more dilutive of (a) the two-class method, or (b) the if-converted method. Prior to the initial public offering, the Company allocated net income first to preferred stockholders based on dividend rights and then to common and preferred stockholders based on ownership interests. The weighted-average number of common shares outstanding gives effect to all potentially dilutive common equivalent shares, including outstanding stock options, warrants, and, prior to the Company's initial public offering, potential issuance of stock upon the issuance of the Company's series A-6 convertible preferred stock ("Series A-6") as settlement of the liability to Nordic Bioscience ("Nordic"). Common equivalent shares are excluded from the computation of diluted net income per share if their effect is anti-dilutive.

Comprehensive Income (Loss) —Comprehensive income (loss) refers to revenues, expenses, gains and losses that are excluded from net income (loss), as these amounts are recorded directly as an adjustment to stockholders' equity (deficit), net of tax. The Company's other comprehensive (loss) income is comprised of unrealized gains (losses) on its available-for-sale marketable securities.

Accounting Standards Updates —In May 2014, the Financial Accounting Standards Board ("FASB") issued Accounting Standards Update (ASU) No. 2014-09, *Revenue from Contracts with Customers (Topic 606)* , which supersedes all existing revenue recognition requirements, including most industry-specific guidance. The new standard requires a company to recognize revenue when it transfers goods or services to customers in an amount that reflects the consideration that the company expects to receive for those goods or services. The standard will be effective for the year ending December 31, 2018. To date, we have no contracts with customers. We expect to have FDA approval in 2017 and will evaluate our accounting policy at the time.

In August 2014, the FASB issued ASU No. 2014-15, *Disclosures of Uncertainties about an Entity's Ability to Continue as a Going Concern* ("ASU 2014-15"). ASU 2014-15 provides guidance in GAAP about management's responsibility to evaluate whether there is substantial doubt about an entity's ability to continue as a going concern and to provide related footnote disclosures. The amendments under ASU 2014-15 are effective for annual fiscal period ending after December 15, 2016 and interim periods thereafter, with early adoption permitted. The adoption of ASU 2014-15 did not have a material impact on the Company's results of operations, financial position or cash flows.

In January 2016, the FASB issued ASU No. 2016-01, *Financial Statements—Overall (Subtopics 825-10)* ("ASU 2016-01"). ASU 2016-01 provides updated guidance on the recognition and measurement of financial assets and financial liabilities that will supersede most current guidance. ASU 2016-01 primarily affects the accounting for equity investments, financial liabilities under the fair value option, and the presentation and disclosure requirements for financial instruments. The amendments in ASU 2016-01 supersede the guidance to classify equity securities with readily determinable fair values into different categories and require equity securities to be measured at fair value with changes in the fair value recognized through earnings. The amendments under ASU 2016-01 are effective, for public business entities, for periods beginning after December 15, 2017, including interim periods within those fiscal years, and with early adoption permitted. The Company does not expect the adoption of ASU 2016-01 to have a material impact on its results of operations, financial position or cash flows.

In February 2016, the FASB issued ASU No. 2016-02, *Leases* (“ASU 2016-02”). ASU 2016-02 supersedes the lease guidance under FASB Accounting Standards Codification (“ASC”) Topic 840, Leases, resulting in the creation of FASB ASC Topic 842, Leases. ASU 2016-02 requires a lessee to recognize in the statement of financial position a liability to make lease payments and a right-of-use asset representing its right to use the underlying asset for the lease term for both finance and operating leases. ASU 2016-02 is effective for fiscal years, and interim periods within those years, beginning after

December 15, 2018. Early adoption is permitted. The Company is currently assessing the potential impact of adopting ASU 2016-02 on its financial statements and related disclosures.

In March 2016, the FASB issued ASU No. 2016-09, *Improvements to Employee Share-Based Payment Accounting* ("ASU 2016-09"). ASU 2016-09 simplifies several aspects of the accounting for share-based payment transactions, including the income tax consequences, classification of awards as either equity or liabilities and classification on the statement of cash flows. ASU 2016-09 is effective for fiscal years, and interim periods within those years, beginning after December 15, 2016. Early adoption is permitted. The Company is currently assessing the potential impact of adopting ASU 2016-09 on its financial statements and related disclosures.

In June 2016, the FASB issued ASU No. 2016-13, *Measurement of Credit Losses on Financial Statements* ("ASU 2016-13"). ASU 2016-13 affects entities holding financial assets and net investment in leases that are not accounted for at fair value through net income. ASU 2016-13 affects loans, debt securities, trade receivables, net investments in leases, off-balance sheet credit exposures, reinsurance receivables, and any other financial assets not excluded from the scope that have contractual right to receive cash. ASU 2016-13 requires that a financial asset (or a group of financial assets) measured at amortized cost basis be presented at the net amount expected to be collected using an allowance for credit losses valuation account. ASU 2016-13 requires that credit losses relating to available-for-sale debt securities should be limited by the amount which the fair value is below amortized cost. ASU 2016-13 is effective for fiscal years, and interim periods within those years, beginning after December 15, 2019. Early adoption is permitted as of the fiscal years beginning after December 15, 2018, including interim periods within those fiscal years. The Company is currently assessing the potential impact of adopting ASU 2016-13 on its financial statements and related disclosures.

In August 2016, the FASB issued ASU No. 2016-15, *Classification of Certain Cash Receipts and Cash Payments* ("ASU 2016-15"). ASU 2016-15 addresses eight specific cash flow issues with the objective of reducing the existing diversity in practice. ASU 2016-15 is effective for fiscal years, and interim periods within those years, beginning after December 15, 2017. Early adoption is permitted. The Company does not expect the adoption of ASU 2016-05 to have a material impact on its results of operations, financial position or cash flows.

3. Marketable Securities

Available-for-sale marketable securities and cash and cash equivalents consist of the following (in thousands):

	December 31, 2016			
	Amortized Cost Value	Gross Unrealized Gains	Gross Unrealized Losses	Fair Value
Cash and cash equivalents:				
Cash	$ 77,443	$ —	$ —	$ 77,443
Money market	173,631	—	—	173,631
Domestic corporate commercial paper	5,487	—	—	5,487
Domestic corporate debt securities	2,006	—	—	2,006
Total	$ 258,567	$ —	$ —	$ 258,567
Marketable securities:				
Domestic corporate debt securities	$ 19,317	$ —	$ (2)	$ 19,315
Domestic corporate commercial paper	31,852	78	—	31,930
Asset-backed securities	22,639	—	(4)	22,635
Total	$ 73,808	$ 78	$ (6)	$ 73,880

	December 31, 2015			
	Amortized Cost Value	Gross Unrealized Gains	Gross Unrealized Losses	Fair Value
Cash and cash equivalents:				
Cash	$ 2,934	$ —	$ —	$ 2,934
Money market funds	83,257	—	—	83,257
Domestic corporate commercial paper	39,984	—	—	39,984
Government-sponsored enterprise debt securities	15,996	$ —	$ —	15,996
Domestic corporate debt securities	10,007	$ —	$ —	10,007
Asset-backed securities	7,500	$ —	$ —	7,500
Total	$ 159,678	$ —	$ —	$ 159,678
Marketable securities:				
Domestic corporate debt securities	$ 173,142	—	$ (107)	$ 173,035
Domestic corporate commercial paper	84,004	154	—	84,158
Asset-backed securities	56,510	$ 1	$ (43)	56,468
Total	$ 313,656	$ 155	$ (150)	$ 313,661

There were no debt securities that had been in an unrealized loss position for more than 12 months as of December 31, 2016 or December 31, 2015 . There were 13 debt securities in an unrealized loss position for less than 12 months at December 31, 2016 and there were 57 debt securities that had been in an unrealized loss position for less than 12 months at December 31, 2015 . The aggregate unrealized loss on these securities as of December 31, 2016 and 2015 was approximately $ 6 thousand and $ 150 thousand, respectively, and the fair value was $ 35.7 million and $ 225.7 million, respectively. The Company considered the decline in market value for these securities to be primarily attributable to current economic conditions. As it was not more likely than not that the Company would be required to sell these securities before the recovery of their amortized cost basis, which may be maturity, the Company did not consider these investments to be other-than-temporarily impaired as of December 31, 2016 and 2015 .

As of December 31, 2016 and 2015 , marketable securities solely consisted of investments that mature within one year.

4. Property and Equipment

Property and equipment consists of the following (in thousands):

	Estimated Useful Life (In Years)	December 31, 2016	December 31, 2015
Furniture and fixtures, lab and office equipment	5	$ 901	$ 314
Computer equipment and software	3	1,412	479
Manufacturing equipment	10	1,209	1,127
Leasehold improvements	Shorter of useful life or remaining lease term	1,253	322
Construction in progress	-	1,078	—
		5,853	2,242
Less accumulated depreciation and amortization		(931)	(345)
Property and equipment, net		$ 4,922	$ 1,897

The Company performed a qualitative impairment analysis to determine if any of the assets displayed indicators of impairment that would trigger the need for further analysis. As a result of the qualitative assessment, the Company concluded that there were no indicators of impairment for any property and equipment assets as of December 31, 2016.

5. Accrued Expenses and Other Current Liabilities

Accrued expenses consist of the following (in thousands):

	December 31,	
	2016	2015
Research costs—Nordic (1)	$ 1,228	$ 2,898
Research costs—other	8,404	5,178
Payroll and employee benefits	9,338	3,330
Professional fees	7,532	3,546
Other current liabilities	95	—
Total accrued expenses and other current liabilities	$ 26,597	$ 14,952

(1) Includes amounts accrued ratably over the estimated per patient treatment period for the services provided by Nordic under the Second Extension. Amounts do not include pass-through costs which are expensed as incurred or upon delivery. See Note 10 for additional information.

6. Loan and Security Agreement

In May 2014, the Company entered into a loan and security agreement (the "2014 Credit Facility"), with Solar Capital Ltd. ("Solar"), as collateral agent and a lender, and Oxford, as a lender (the "Lenders"), pursuant to which Solar and Oxford agreed to make available to the Company $30.0 million in the aggregate subject to certain conditions to funding. An initial term loan was made in May 2014 in an aggregate principal amount equal to $21.0 million (the "Initial Term Loan"). The Company used approximately $9.3 million of the Initial Term Loan to repay all amounts owed under a previous loan and security agreement with other financial institutions.

In July 2014, the Company entered into a first amendment to the 2014 Credit Facility (the "First Amendment"). The terms of the First Amendment, among other things, provided the Company with, subject to certain customary funding conditions, additional term loans in an aggregate principal amount of $4.0 million upon the closing of the First Amendment. The Company borrowed the additional $4.0 million in July 2014.

The Company had been required to make interest-only payments through December 1, 2015, and beginning on January 1, 2016, it would have been required to make payments of principal and accrued interest in equal monthly installments over a term of 30 months. The Initial Term Loan bore interest per annum at 9.85% plus one-month LIBOR (customarily defined). All principal and accrued interest on the Initial Term Loan had been due on June 1, 2018.

On August 4, 2015, the Company prepaid all amounts owed under the 2014 Credit Facility and the First Amendment. After consideration of relevant fees required under the 2014 Credit Facility and the First Amendment, the total payment amounted to $26.5 million , which resulted in a loss on retirement of $1.6 million during the third quarter of 2015.

7. Stockholders' Equity and Convertible Preferred Stock

Common Stock

On June 11, 2014, the Company completed its initial public offering whereby the Company sold 6,500,000 shares of common stock at a price of $8.00 per share. The shares began trading on the NASDAQ Global Market on June 6, 2014. In connection with the offering, all outstanding shares of our convertible preferred stock converted into 19,465,132 shares of common stock and 2,862,654 shares of common stock were issued in satisfaction of accumulated dividends accrued on the preferred stock. In addition, all outstanding warrants to purchase shares of series A-1 convertible preferred stock and warrants to purchase shares of series B-2 convertible preferred stock were converted into the right to purchase 149,452 shares of common stock and the Company's warrant liability was reclassified to equity.

On June 18, 2014 and June 25, 2014, the underwriters purchased an additional 512,744 shares in the aggregate by exercising a portion of the over-allotment option granted to them in connection with the initial public offering. As a result of the closing of the initial public offering and subsequent exercise of the over-allotment option, the Company received aggregate proceeds, net of underwriting discounts, commissions and offering costs, of approximately $50.4 million .

On October 7, 2014, the Company completed an additional public offering of 2,750,000 shares of common stock at a price of $18.25 per share, for aggregate proceeds, net of underwriting discounts, commissions, and offering costs, of approximately $46.9 million . On October 7, 2014, the underwriters purchased an additional 378,524 shares, in the aggregate, by exercising a portion of the over-allotment option granted to them in connection with the offering. As a result of the public

offering and subsequent exercise of the over-allotment option, the Company received aggregate proceeds, net of underwriting discounts, commissions, and offering costs of approximately $53.4 million .

On January 28, 2015, the Company completed an additional public offering of 4,000,000 shares of its common stock at a price of $36.75 per share, for aggregate estimated proceeds, net of underwriting discounts, commissions and offering costs, of approximately $137.8 million . Also, on January 28, 2015, the underwriters purchased an additional 600,000 shares in the aggregate by exercising an option to purchase additional shares that was granted to them in connection with the offering. As a result of the public offering and subsequent exercise of the underwriters' option, the Company received aggregate proceeds, net of underwriting discounts, commissions and offering costs of approximately $158.4 million .

On July 28, 2015, the Company completed an additional public offering of 4,054,054 shares of its common stock at a price of $74.00 per share, for aggregate proceeds, net of underwriting discounts, commissions and offering costs, of approximately $281.5 million . Also, on July 28, 2015, the underwriters purchased an additional 608,108 shares by exercising an option to purchase additional shares that was granted to them in connection with the offering. As a result of the public offering and subsequent exercise of the underwriters' option, the Company received aggregate proceeds, net of underwriting discounts, commissions and estimated offering costs of approximately $323.8 million .

Preferred Stock

On February 14, 2014, the Company entered into a Series B-2 Convertible Preferred Stock and Warrant Purchase Agreement (the "Series B-2 Purchase Agreement"), pursuant to which the Company was able to raise up to approximately $40.2 million through the issuance of (1) up to 655,000 shares of its preferred stock (the "Series B-2"), and (2) warrants to acquire up to 718,201 shares of its common stock with an exercise price of $14.004 per share. In February and March 2014, the Company consummated closings under the Series B-2 Purchase Agreement, whereby, in exchange for aggregate gross proceeds to the Company of approximately $27.5 million , the Company issued an aggregate of 448,060 shares of Series B-2 and warrants to purchase up to a total of 491,293 shares of its common stock. The warrants can be exercised at any time prior to the fifth anniversary of their issuance. Upon completion of the Company's initial public offering, all outstanding warrants to purchase shares of series B-2 convertible preferred stock were converted into the right to purchase shares of common stock.

8. Fair Value Measurements

The following table summarizes the financial instruments measured at fair value on a recurring basis in the accompanying consolidated balance sheets as of December 31, 2016 and December 31, 2015 (in thousands):

	As of December 31, 2016			
	Level 1	Level 2	Level 3	Total
Assets				
Cash and cash equivalents:				
Cash	$ 77,443	$ —	$ —	$ 77,443
Money market funds (1)	173,631	—	—	173,631
Domestic corporate commercial paper (2)	—	5,487	—	5,487
Domestic corporate debt securities (2)	—	2,006	—	2,006
Total	$ 251,074	$ 7,493	$ —	$ 258,567
Marketable Securities				
Domestic corporate debt securities (2)	$ —	$ 19,315	$ —	$ 19,315
Domestic corporate commercial paper (2)	—	31,930	—	31,930
Asset-backed securities (2)	—	22,635	—	22,635
Total	$ —	$ 73,880	$ —	$ 73,880

	As of December 31, 2015			
	Level 1	Level 2	Level 3	Total
Assets				
Cash and cash equivalents:				
Cash	$ 2,934	$ —	$ —	$ 2,934
Money market funds (1)	83,257	—	—	83,257
Domestic corporate commercial paper (2)	—	39,984	—	39,984
Government-sponsored enterprise debt securities (2)	—	15,996	—	15,996
Domestic corporate debt securities (2)	—	10,007	—	10,007
Asset-backed securities (2)	—	7,500	—	7,500
Total	$ 86,191	$ 73,487	$ —	$ 159,678
Marketable securities:				
Domestic corporate debt securities (2)	$ —	$ 173,035	$ —	$ 173,035
Domestic corporate commercial paper (2)	—	84,158	—	84,158
Asset-backed securities (2)	—	56,468	—	56,468
Total	$ —	$ 313,661	$ —	$ 313,661

(1) Fair value is based upon quoted market prices.
(2) Fair value is based upon quoted prices for similar instruments in active markets, quoted prices for identical or similar instruments in markets that are not active and model-based valuation techniques for which all significant assumptions are observable in the market or can be corroborated by observable market data for substantially the full term of the assets. Inputs are obtained from various sources, including market participants, dealers and brokers.

9. License Agreements

In September 2005, the Company entered into a license agreement (the "License Agreement"), as amended, with an affiliate of Ipsen Pharma SAS ("Ipsen") under which the Company exclusively licensed certain Ipsen compound technology and related patents covering abaloparatide to research, develop, manufacture and commercialize certain compounds and related products in all countries, except Japan (where the Company does not hold abaloparatide-SC development and commercialization rights) and France (where the Company's commercialization rights were subject to certain co-marketing and co-promotion rights exercisable by Ipsen, provided that certain conditions included in the License Agreement were met). We believe that Ipsen's co-marketing and co-promotion rights in France have permanently expired. Ipsen also granted the Company an exclusive right and license under the Ipsen compound technology and related patents to make and have made compounds or product in Japan. Ipsen further granted the Company an exclusive right and license under certain Ipsen formulation technology and related patents solely for purposes of enabling us to develop, manufacture and commercialize compounds and products covered by the compound technology license in all countries, except Japan and France (as discussed above).

In consideration for these rights, the Company made nonrefundable, non-creditable payments in aggregate of $4.3 million to Ipsen. The License Agreement provides for further payments upon the achievement of certain future regulatory and commercial milestones. Total additional milestone payments that could be payable under the agreement is €32.0 million (approximately $33.6 million). Should abaloparatide be approved and subsequently commercialized, the agreement provides that the Company would pay to Ipsen a fixed five percent royalty based on net sales of the product by the Company or its sublicensees on a country-by-country basis until the later of the last to expire of the licensed patents or for a period of 10 years after the first commercial sale in such country. The date of the last to expire of the abaloparatide patents licensed from or co-owned with Ipsen, barring any extension thereof, is expected to be March 26, 2028.

If the Company sublicenses abaloparatide to a third party, then the agreement provides that the Company would pay Ipsen a percentage of certain payments received from such sublicensee (in lieu of milestone payments not achieved at the time of such sublicense). The applicable percentage is in the low double digit range. In addition, if the Company or its sublicensees commercialize a product that includes a compound discovered by it based on or derived from confidential Ipsen know-how, then the agreement provides that the Company would pay to Ipsen a fixed low single digit royalty on net sales of such product on a country-by-country basis until the later of the last to expire of licensed patents that cover such product or for a period of 10 years after the first commercial sale of such product in such country.

The License Agreement expires on a country-by-country basis on the later of (1) the date the last remaining valid claim in the licensed patents expires in that country, or (2) a period of 10 years after the first commercial sale of the licensed products in such country, unless it is sooner terminated in accordance with its terms.

In June 2006, the Company entered into a license agreement (the "Eisai Agreement"), with Eisai Co. Ltd., ("Eisai"). Under the Eisai Agreement, Eisai granted to the Company an exclusive right and license to research, develop, manufacture and commercialize RAD1901 and related products from Eisai in all countries, except Japan. In consideration for the rights to RAD1901, the Company paid Eisai an initial license fee of $0.5 million , which was expensed during 2006. In March 2015, the Company entered into an amendment to the Eisai Agreement (the "Eisai Amendment") in which Eisai granted to the Company the exclusive right and license to research, develop, manufacture and commercialize RAD1901 in Japan. In consideration for the rights to RAD1901 in Japan, the Company paid Eisai a license fee of $0.4 million upon execution of the Eisai Amendment, which was recognized as research and development expense in 2015. The Eisai Amendment, as amended, also provides for additional payments of up to $22.3 million , payable upon the achievement of certain clinical and regulatory milestones.

Under the Eisai Agreement, as amended, should a product covered by the licensed technology be commercialized, the Company will be obligated to pay to Eisai royalties in a variable mid-single digit range based on net sales of the product on a country-by-country basis. The royalty rate will be reduced, on a country-by-country basis, at such time as the last remaining valid claim in the licensed patents expires, lapses or is invalidated and the product is not covered by data protection clauses. In addition, the royalty rate will be reduced, on a country-by-country basis, if, in addition to the conditions specified in the previous sentence, sales of lawful generic versions of such product account for more than a specified minimum percentage of the total sales of all products that contain the licensed compound during a calendar quarter. The latest licensed patent is expected to expire, barring any extension thereof, on August 18, 2026.

The Eisai Agreement, as amended, also grants the Company the right to grant sublicenses with prior written approval from Eisai. If the Company sublicenses the licensed technology to a third party, the Company will be obligated to pay Eisai, in addition to the milestones referenced above, a fixed low double digit percentage of certain fees received from such sublicensee and royalties in the low single digit range based on net sales of the sublicensee. The license agreement expires on a country-by-country basis on the later of (1) the date the last remaining valid claim in the licensed patents expires, lapses or is invalidated in that country, the product is not covered by data protection clauses, and the sales of lawful generic versions of the product account for more than a specified percentage of the total sales of all pharmaceutical products containing the licensed compound in that country; or (2) a period of 10 years after the first commercial sale of the licensed products in such country, unless it is sooner terminated.

10. Research Agreements

Abaloparatide-SC Phase 3 Clinical Trial — The Company contracted with Nordic Bioscience Clinical Development VII A/S ("Nordic") to conduct the Company's Phase 3 clinical trial of abaloparatide-SC (the "Phase 3 Clinical Trial"). The Company also contracted with Nordic for Nordic to perform an extension study to evaluate six months of standard-of-care osteoporosis management following the completion of the Phase 3 Clinical Trial (the "Extension Study"), and, upon completion of this initial six months, an additional period of 18 months of standard-of-care osteoporosis management (the "Second Extension").

In April 2015, the Company contracted with Nordic to perform additional services, including additional monitoring of patients enrolled in the Second Extension. Payments in cash to be made to Nordic for these additional services are denominated in euros and total up to approximately €4.1 million (approximately $4.3 million).

Payments in cash to be made to Nordic for the services related to the Extension Study and Second Extension are denominated in both euros and U.S. dollars and total up to €11.9 million (approximately $12.5 million) and $1.1 million , respectively. As of December 31, 2016 , the last patient's final visit in the Second Extension had occurred and all obligations due to Nordic in relation to the Extension Study have been paid.

The Company recognizes research and development expense for the amounts due to Nordic under the Extension Study and the Second Extension ratably over the estimated per patient treatment periods beginning upon enrollment, or over a nine -month and nineteen -month period, respectively. The Company recorded $2.5 million , $5.4 million , and $9.6 million , for the years ended December 31, 2016 , 2015 , and 2014 respectively, for per patient costs incurred.

As of December 31, 2016 , the Company had a liability of $1.2 million reflected in accrued expenses and other current liabilities on the consolidated balance sheet resulting from services provided by Nordic under the Second Extension, which are payable in cash.

11. Employee Stock Benefit Plans

Summary of Stock-based Compensation Plans

The Company has the following stock-based compensation plans as of December 31, 2016 , under which equity awards have been granted to employees, directors and consultants:

- 2003 Long-Term Incentive Plan; and
- 2011 Equity Incentive Plan.

The Company's 2011 Equity Incentive Plan replaced the Company's 2003 Long-Term Incentive Plan when the Company's board of directors approved the new plan on November 7, 2011. As of December 31, 2016 , an aggregate of approximately 9,860,000 shares have been authorized for issuance under the Company's stock-based compensation plans, with approximately 6,374,000 options outstanding. The number of common shares available for granting of future awards under these plans was approximately 2,960,000 at December 31, 2016 .

2003 Long-Term Incentive Plan —The Company's 2003 Long-Term Incentive Plan (the "2003 Plan") provides for the granting of incentive stock options and nonqualified options to key employees, directors and consultants of the Company. The exercise price of the incentive stock options, as determined by the Company's board of directors, must be at least 100% (110% in the case of incentive stock options granted to a stockholder owning in excess of 10% of the Company's common stock) of the common stock fair value as of the date of the grant. The provisions of the 2003 Plan limit the exercise of incentive stock options, but in no case may the exercise period extend beyond ten years from the date of grant (five years in the case of incentive stock options granted to a stockholder owning in excess of 10% of the Company's common stock). Stock options generally vest over a four -year period. Certain options contain explicit performance conditions. The Company authorized approximately 884,000 shares of common stock for issuance under the 2003 Plan.

2011 Equity Incentive Plan —The Company's 2011 Equity Incentive Plan (the "2011 Plan") provides for the granting of incentive stock options and nonqualified options to key employees, directors and consultants of the Company. The exercise price of the incentive stock options, as determined by the Company's board of directors, must be at least 100% (110% in the case of incentive stock options granted to a stockholder owning in excess of 10% of the Company's common stock) of the common stock fair value as of the date of the grant. The provisions of the 2011 Plan limit the exercise of incentive stock options, but in no case may the exercise period extend beyond ten years from the date of grant (five years in the case of incentive stock options granted to a stockholder owning in excess of 10% of the Company's common stock). Stock options generally vest over a four -year period, subject to continued employment with, or services to, the Company. During 2015, the Company also issued stock options to certain members of its board of directors which vested immediately. Certain options contain explicit performance conditions. The Company has authorized approximately 8,976,000 shares of common stock for issuance under the 2011 Plan. In addition, the shares remaining available for issuance under the 2003 Plan were assumed as shares authorized under the 2011 Plan.

The Company granted inducement stock option awards to purchase the Company's common stock to certain new non-executive employees on March 7, 2016, March 28, 2016 and May 8, 2016. The total inducement stock options issued were 341,450 with exercise prices ranging between $30.25 to $33.49 per option. Each inducement option award vests 25% on the first anniversary of the employee's hire date, with the remaining 75% to vest in monthly installments over the three years thereafter, and has a 10 -year term. These inducement stock options were granted pursuant to Rule 5635(c)(4) of the NASDAQ Listing Rules for equity grants to induce the new employees to enter into employment with the Company.

2016 Employee Stock Purchase Plan

Eligible employees may participate in the Company's 2016 Employee Stock Purchase Plan. Under this plan, participants may purchase common stock of the Company at the end of a pre-determined six -month offering period at 85% of the lower of the fair market value at the beginning or end of the offering period. Shares are purchased through payroll deductions of up to 25% of each participating employee's annual compensation over the course of the six -month offering period, subject to certain limitations. The current plan allows for the issuance of 1,290,594 shares of common stock to eligible employees. At December 31, 2016, there were 1,290,594 shares available for future sale to employees under this plan.

In September 2016, the Company initiated the first offering period under the plan, which runs from September 1, 2016 through February 28, 2017. As of December 31, 2016 , the Company recorded a liability of $0.9 million related to employee withholdings under this plan.

Options —The Company has historically granted stock options at exercise prices no less than the fair value of its common stock as determined by its board of directors, with input from management. Prior to the Company's initial public offering, the Company's board of directors had historically determined, with input from management, the estimated fair value of the Company's common stock on the date of grant based on a number of objective and subjective factors, including:

- the prices at which the Company sold shares of convertible preferred stock;
- the superior rights and preferences of securities senior to the Company's common stock at the time of each grant;
- the likelihood of achieving a liquidity event such as a public offering or sale of the Company;
- the Company's historical operating and financial performance and the status of its research and product development efforts; and
- achievement of enterprise milestones, including entering into collaboration and license agreements.

After the Company's initial public offering, exercise prices in the case of non-qualified and incentive stock options are not less than the fair value of the underlying common stock on the date of grant, as determined under the 2011 Plan.

The Company uses the Black-Scholes option-pricing model to estimate the grant date fair value of its employee stock options. The weighted-average grant-date fair value per share of options granted during 2016 , 2015 , and 2014 was $19.79 , $30.52 , and $8.26 respectively. The weighted-average assumptions used in the Black-Scholes option-pricing model were as follows:

	Years Ended December 31,		
	2016	2015	2014
Expected term (years)	5.95	6.08	6.06
Volatility	55%	55%	59%
Expected dividend yield	0%	0%	0%
Risk-free interest rates	1.91%	1.72%	2.06%

A summary of stock option activity for the year ended December 31, 2016 is as follows (in thousands, except for per share and weighted-average contractual life amounts):

	Shares	Weighted-Average Exercise Price (in dollars per share)	Weighted-Average Contractual Life (In Years)	Aggregate Intrinsic Value
Options outstanding at December 31, 2015	4,408	$ 28.75		
Granted	2,259	37.08		
Exercised	(138)	18.69		
Cancelled	(155)	41.41		
Expired	—	—		
Options outstanding at December 31, 2016	6,374	$ 31.60	7.89	$ 76,364
Options exercisable at December 31, 2016	2,687	$ 21.28	6.59	$ 54,659
Options vested or expected to vest at December 31, 2016	6,269	$ 31.43	7.87	$ 75,884

The aggregate intrinsic value of options exercised (i.e., the difference between the market price at exercise and the price paid by employees to exercise the option) during the years ended December 31, 2016 and 2015 was $3.7 million and $14.7 million , respectively.

As of December 31, 2016 , there was approximately $65.4 million of total unrecognized compensation expense related to unvested option-based compensation arrangements, which is expected to be recognized over a weighted-average period of approximately 3 years.

Restricted Stock Units —In April 2016, the Company awarded 58,500 restricted stock units ("RSUs") to employees at an average grant date fair value of $ 33.03 per RSU. Each RSU entitles the holder to receive one share of the Company's common stock if and when the RSU vests. The RSUs vest in four substantially equal installments on each of the first four anniversaries of the vesting commencement date, subject to the employee's continued employment with, or services to, the Company on such vesting date. Compensation expense is recognized on a straight line basis.

A summary of RSU activity during the nine months ended December 31, 2016 is as follows (in thousands, except for per share amounts):

	RSUs	Weighted-Average Grant Date Fair Value (in dollars per share)
RSUs Outstanding at December 31, 2015	—	$ —
Granted	59	33.03
Vested	—	—
Forfeited	(2)	33.03
RSUs Outstanding at December 31, 2016	57	$ 33.03

As of December 31, 2016 , there was approximately $1.5 million of total unrecognized compensation expense related to unvested RSUs, which is expected to be recognized over a weighted-average period of approximately 3 years.

The following table summarizes stock-based compensation expense by financial statement line (in thousands):

	Years Ended December 31,		
	2016	2015	2014
Research and development	$ 11,190	$ 7,864	$ 1,953
General and administrative	14,868	6,870	5,117
Share-based compensation expense included in operating expenses	$ 26,058	$ 14,734	$ 7,070

Performance Units —In September 2015, the Company awarded 25,000 performance units ("PUs") to an employee. Each PU which is earned entitles the holder to receive one share of the Company's common stock if and when the PU vests. The PUs can be earned in the three years subsequent to the grant date if the Company's average closing stock price over 45 consecutive trading days that begin and end during such three -year period reaches certain thresholds that were set at the time of issuance. The vesting of any earned units is subject to the employee's continued employment one year from the last day of the measurement period for which the PUs are earned. Compensation expense is recognized over the derived service period, calculated using a Monte Carlo simulation analysis.

There were no PU's granted during the year ended December 31, 2016 . The weighted-average grant-date fair value per unit of PUs granted during the year ended December 31, 2015 was $49.59 , which was calculated using a Monte Carlo simulation analysis performed by an independent valuation firm. This valuation methodology utilizes several key assumptions including the forecasted stock price, stock price volatility, risk-free rate as of valuation date, stock price as of grant date, and the trigger for the performance condition to be met.

As of December 31, 2016 , there was approximately $ 0.4 million of total unrecognized compensation expense related to unvested PUs, which is expected to be recognized over a weighted-average period of approximately 2 years.

12. Net Loss Per Share

Basic and diluted net loss per share is calculated as follows (in thousands, except share and per share amounts):

	Year Ended December 31,		
	2016	2015	2014
Numerator:			
Net loss	$ (182,804)	$ (101,526)	$ (62,479)
Accretion of preferred stock	—	—	(9,000)
Loss attributable to common stockholders—basic	(182,804)	(101,526)	(71,479)
Effect of dilutive convertible preferred stock	—	—	—
Loss attributable to common stockholders—diluted	$ (182,804)	$ (101,526)	$ (71,479)
Denominator:			
Weighted-average number of common shares used in loss per share— basic and diluted	43,067,952	39,643,099	17,699,487
Loss per share—basic and diluted	$ (4.24)	$ (2.56)	$ (4.04)

The following potentially dilutive securities, prior to the use of the treasury stock method, have been excluded from the computation of diluted weighted-average shares outstanding, as they would be anti-dilutive. For the years ended December 31, 2016 , 2015 , and 2014 all of the Company's classes of convertible preferred stock, options to purchase common stock, warrants and performance units outstanding were assumed to be anti-dilutive as earnings attributable to common stockholders was in a loss position.

	Year Ended December 31		
	2016	2015	2014
Convertible preferred stock	—	—	3,857,664
Options to purchase common stock	5,815,168	3,903,051	2,466,492
Warrants	630,444	822,726	1,271,520
Restricted Stock Units	42,363	—	—

13. Income Taxes

For the year ended December 31, 2016 , 2015 , and 2014 no income tax expense was recorded due to the Company’s net operating losses (NOLs) and full valuation allowance.

A reconciliation of income taxes computed using the U.S. federal statutory rate to that reflected in operations follows (in thousands):

	Year Ended December 31,		
	2016	2015	2014
Income tax benefit using U.S. federal statutory rate	$ (62,141)	$ (34,391)	$ (21,243)
State income taxes, net of federal benefit	(5,236)	(4,434)	(2,494)
Stock-based compensation	1,585	752	149
Research and development tax credits	(2,794)	(1,469)	(499)
Change in the valuation allowance	48,096	39,291	23,186
Permanent items	53	26	910
Other	1,371	225	(9)
Expiring NOLs and credits - 382 Limitation	$ 19,066	—	—
Income tax expense	$ —	$ —	$ —

The Company is subject to Massachusetts net worth taxes, not based on income, which is largely offset by allowable tax credits and recorded as a component of operating expenses.

The principal components of the Company's deferred tax assets are as follows (in thousands):

	December 31,	
	2016	2015
Non-current assets:		
NOL carryforwards	$ 193,436	$ 154,239
Capitalized research and development	1,970	263
Research and development credits	4,525	6,313
Depreciation and amortization	(173)	(119)
Accrued expenses	3,109	1,073
Stock-based compensation	14,903	7,753
Other	55	29
Gross non-current deferred tax assets	217,825	169,551
Valuation allowance	(217,825)	(169,551)
Net non-current deferred tax assets	$ —	$ —

FASB ASC 740 —Income Taxes requires that a valuation allowance be established to reduce a deferred tax asset to its realizable value when it is more likely than not that all or a portion of a deferred tax asset will not be realized. A review of all available positive and negative evidence needs to be considered, including the utilization of past tax credits and length of carry-back and carry-forward periods, reversal of temporary differences, tax planning strategies, our current and past performance, the market environment in which we operate, and the evaluation of tax planning strategies to generate future taxable income.

The Company has recorded a valuation allowance against its deferred tax assets in each of the years ended December 31, 2016 , 2015 , and 2014 , because the Company's management believes that it is more likely than not that these assets will not be realized. The increase in the valuation allowance in 2016 primarily relates to the net loss incurred by the Company.

As of December 31, 2016 the Company had federal and state net operating loss ("NOL") carryforwards of approximately $526.7 million and $385.3 million , respectively, which may be used to offset future taxable income. The Company also had federal and state tax credits of $3.8 million and $1.1 million , respectively, to offset future tax liabilities. The NOL and tax credit carryforwards will expire at various dates through 2036, are subject to review and possible adjustment by federal and state tax authorities, and are fully reserved by a valuation allowance. In 2016 , we completed an evaluation of our tax attributes through December 31, 2015 as outlined under Section 382 of the Internal Revenue Code, which resulted in a reduction of our NOL and credit carryforwards. We have adjusted our NOL and credit carryforwards, and the related valuation allowance, according to the results of this evaluation. At December 31, 2016 , $16.1 million of the federal and state NOL carryforwards relate to excess stock based compensation tax benefits. The Company's excess stock based compensation tax benefits will be recorded as a deferred tax asset when the Company adopts ASU, 2016-09, Compensation - Stock Compensation (Topic 718).

The Company applies the accounting guidance in ASC 740 related to accounting for uncertainty in income taxes. The Company’s reserves related to taxes are based on a determination of whether, and how much of, a tax benefit taken by the Company in its tax filings or positions is more likely than not to be realized following resolution of any potential contingencies present related to the tax benefit. As of December 31, 2016 and 2015 , the Company had no material unrecognized tax benefits or uncertain tax positions. The Company has not, as yet, conducted a study of its research and development credit carryforwards. Such a study may result in an adjustment to the Company’s research and development credit carryforwards; however, until a study is completed and any adjustment is known, no amount is being presented as an uncertain tax position. A full valuation allowance has been provided against the Company’s research and development credits and net operating loss carryforward and, if an adjustment is required, this adjustment would be offset by an adjustment to the valuation allowance. Thus, there would be no impact to the consolidated balance sheet or consolidated statement of operations if an adjustment were required. The Company recognizes interest or penalties on any unrecognized benefits since inception.

No interest or penalties have been recorded for the years ended December 31, 2016 , 2015 , or 2014 . The Company does not expect any significant change in its uncertain tax positions in the next 12 months.

The statute of limitations for assessment by the Internal Revenue Service ("IRS") and state tax authorities remains open for years 2013 through 2016 . The Company files income tax returns in the United States and several states. There are currently no federal or state audits in progress.

14. Commitments and Contingencies

Litigation —The Company may be subject to legal proceedings and claims which arise in the ordinary course of its business. In the Company's opinion, the ultimate resolution of these matters is not expected to have a material effect on its consolidated financial statements. The Company records a liability in its consolidated financial statements for these matters when a loss is known or considered probable and the amount can be reasonably estimated. The Company reviews these estimates each accounting period as additional information is known and adjusts the loss provision when appropriate. If a matter is both probable to result in a liability and the amounts of loss can be reasonably estimated, the Company estimates and discloses the possible loss or range of loss to the extent necessary to make the consolidated financial statements not misleading. If the loss is not probable or cannot be reasonably estimated, a liability is not recorded in its consolidated financial statements.

In November 2016, we received notice that in October 2016, Ipsen had initiated arbitration proceedings against us in the International Chamber of Commerce's International Court of Arbitration. Ipsen's Request for Arbitration alleges that we breached various provisions of the License Agreement concerning abaloparatide, including with regard to Ipsen's right to co-promote abaloparatide in France and a license from us with respect to Japan. Ipsen seeks declaratory relief, compliance with the License Agreement, damages, costs and fees as a result of the purported breaches, and alleges the monetary value of these claims is approximately €50 million .

In January 2017, we submitted an Answer denying Ipsen's claims and alleging counterclaims against Ipsen for breach of the License Agreement and other declaratory judgment. We asserted, among other things, that Ipsen's claimed rights to co-promote abaloparatide in France and to a license from us with respect to Japan have permanently expired, and that Ipsen has breached the License Agreement by, among other things, allowing certain patents to expire and by purporting to license to a third party certain manufacturing and other rights that we contend Ipsen exclusively licensed to us. We are seeking dismissal of Ipsen's claims, as well as declaratory relief, compliance with the License Agreement, and other damages, costs and fees to be determined by the Arbitral Tribunal.

In February 2017, Ipsen submitted a Reply denying our counterclaims and alleging that we are precluded from asserting them. Given that this matter is at a preliminary stage, we cannot predict or assess the likely outcome of these proceedings.

Commitments —The Company leases certain office space in Massachusetts, New Jersey and Pennsylvania under non-cancellable operating leases that expire over various terms through the end of 2020.

The Company is obligated to make monthly rent payments pursuant to these non-cancellable agreements as set forth below (in thousands):

Years ended December 31,	Future Lease Commitments
2017	$ 3,020
2018	2,203
2019	1,499
2020	1,192
Total minimum lease payments	$ 7,914

Rent expense for the years ended December 31, 2016 , 2015 , and 2014 was $2.8 million , $0.6 million and $0.2 million , respectively.

Manufacturing Agreements —In June 2016, the Company entered into a Supply Agreement with Ypsomed AG ("Ypsomed"), pursuant to which Ypsomed agreed to supply commercial and clinical supplies of a disposable pen injection device (the "Device") customized for subcutaneous injection of abaloparatide. The Company has agreed to purchase a minimum number of Devices at prices per Device that decrease with an increase in quantity supplied. In addition, the Company has agreed to make milestone payments for Ypsomed's capital developments in connection with the initiation of the commercial supply of the Device and to pay a one-time capacity fee. All costs and payments under the agreement are delineated in Swiss Francs. The agreement has an initial term of three years from the earlier of the date of delivery of the first commercial batch of Devices after regulatory approval and June 1, 2017, after which, it automatically renews for two -year terms until terminated. The Company will purchase the Device subject to minimum annual quantity requirements over the initial three -year term of the agreement. During the initial term of the agreement, the Company estimates that it will be obligated to make total minimum payments to Ypsomed of approximately CHF 3.9 million ($4.0 million) in the aggregate, including the milestone payments and one-time capacity fee.

In June 2016, the Company entered into a Commercial Supply Agreement with Vetter Pharma International GmbH (“Vetter”), pursuant to which Vetter has agreed to formulate the finished abaloparatide-SC drug product containing the active pharmaceutical ingredient (“API”) of abaloparatide, to fill cartridges with the drug product, to assemble the pen delivery device, and to package the pen for commercial distribution. The Company has agreed to purchase the cartridges and pens in specified batch sizes at a price per unit. For labeling and packaging services, the Company has agreed to pay a per unit price dependent upon the number of pens loaded with cartridges that are labeled and packaged. These prices are subject to an annual price adjustment. The Company will purchase these services subject to minimum annual quantity requirements over the initial five -year term of the agreement. The agreement has an initial term of five years, which began on January 1, 2016, after which, it automatically renews for two -year terms unless either party notifies the other party two years before the end of the then-current term that it does not intend to renew.

In July 2016, the Company entered into a Manufacturing Services Agreement with Polypeptide Laboratories Holding AB ("PPL"), as successor-in-interest to Lonza Group Ltd., pursuant to which PPL has agreed to manufacture the commercial and clinical supplies of the API for abaloparatide. The Company has agreed to purchase the API in batches at a price per gram in euros, subject to an annual increase by PPL. The Company is also required to purchase a minimum number of batches annually. The agreement has an initial term of a six years, after which, it automatically renews for three -year terms unless either party provides notice of non-renewal 24 months before the end of the then-current term.

15. Selected Quarterly Financial Data (Unaudited)

Selected quarterly financial data for the years ended December 31, 2016 and 2015 is as follows (in thousands, except for share and per share data):

	Three Months Ended			
	March 31,	June 30,	September 30,	December 31,
2016:				
Net loss	$ (40,463)	$ (43,435)	$ (46,186)	$ (52,720)
Net loss applicable to common stock	(40,463)	(43,435)	(46,186)	(52,720)
Net loss per share—basic and diluted	(0.94)	(1.01)	(1.07)	(1.22)
Weighted-average common shares outstanding—basic and diluted	43,012,924	43,042,883	43,092,921	43,122,210
2015:				
Net loss	$ (17,057)	$ (22,965)	$ (28,264)	$ (33,240)
Net loss applicable to common stock	(17,057)	(22,965)	(28,264)	(33,240)
Net loss per share—basic and diluted	(0.47)	(0.61)	(0.68)	(0.77)
Weighted-average common shares outstanding—basic and diluted	36,268,975	37,895,651	41,331,612	42,924,137

ITEM 9. CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURE.

None.

ITEM 9A. CONTROLS AND PROCEDURES.

Limitations on Effectiveness of Controls and Procedures

In designing and evaluating our disclosure controls and procedures and internal control over financial reporting, management recognizes that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving the desired control objectives. In addition, the design of disclosure controls and procedures and internal control over financial reporting must reflect the fact that there are resource constraints and that management is required to apply judgment in evaluating the benefits of possible controls and procedures relative to their costs.

Evaluation of Disclosure Controls and Procedures

Our management, with the participation of our Chief Executive Officer and Chief Financial Officer, evaluated as of the end of the period covered by this Annual Report on Form 10-K, the effectiveness of our disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) under the Securities Exchange Act of 1934, as amended, or the Exchange Act. Based on that evaluation, our Chief Executive Officer and Chief Financial Officer concluded that our disclosure controls and procedures were effective at the reasonable assurance level as of December 31, 2016 .

Management's Annual Report on Internal Control Over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting, as defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act. Our management, with the participation of our Chief Executive Officer and Chief Financial Officer, assessed the effectiveness of our internal control over financial reporting as of December 31, 2016 , based on the criteria set forth in Internal Control—Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework). Based on that assessment, our management concluded that our internal control over financial reporting was effective as of December 31, 2016 .

The effectiveness of our internal control over financial reporting as of December 31, 2016 has been audited by Ernst & Young LLP, an independent registered public accounting firm, as stated in their report which is contained in Item 9A of this Annual Report on Form 10-K.

Changes in Internal Control Over Financial Reporting

There was no change in our internal control over financial reporting during the quarter ended December 31, 2016 that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

Report of Independent Registered Public Accounting Firm

The Board of Directors and Shareholders of Radius Health, Inc.

We have audited Radius Health, Inc.'s internal control over financial reporting as of December 31, 2016 , based on criteria established in Internal Control—Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework) (the COSO criteria). Radius Health, Inc.'s management is responsible for maintaining effective internal control over financial reporting, and for its assessment of the effectiveness of internal control over financial reporting included in the accompanying Management's Annual Report on Internal Control over Financial Reporting. Our responsibility is to express an opinion on the company's internal control over financial reporting based on our audit.

We conducted our audit in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects. Our audit included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, testing and evaluating the design and operating effectiveness of internal control based on the assessed risk, and performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of consolidated financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

In our opinion, Radius Health, Inc. maintained, in all material respects, effective internal control over financial reporting as of December 31, 2016 , based on the COSO criteria.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), the consolidated balance sheets of Radius Health, Inc. as of December 31, 2016 and 2015 , and the related consolidated statements of operations and comprehensive loss, convertible preferred stock, redeemable convertible preferred stock and stockholders' equity (deficit) and cash flows for each of the three years in the period ended December 31, 2016 of Radius Health, Inc. and our report dated February 24, 2017 expressed an unqualified opinion thereon.

/s/ Ernst & Young LLP

Boston, Massachusetts
February 24, 2017

ITEM 9B. OTHER INFORMATION.

None.

PART III

ITEM 10. DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE.

The information required with respect to this item will be set forth in our definitive Proxy Statement to be delivered to our stockholders in connection with our Annual Meeting of Stockholders, which currently is expected to be held on June 7, 2017. Such information is incorporated herein by reference.

Our Board of Directors adopted a Code of Conduct and Ethics applicable to the Board of Directors, our Chief Executive Officer, Chief Financial Officer, other officers of Radius and all other employees of Radius. The Code of Conduct and Ethics is available on our website, http://radiuspharm.com/.

We intend to disclose on our website any amendments to, or waivers from, our Code of Conduct and Ethics that are required to be disclosed pursuant to SEC rules.

Code of Business Conduct and Ethics

We have adopted a code of business conduct and ethics that applies to all of our employees, officers and directors, including those officers responsible for financial reporting. The code of business conduct and ethics is available on our website at http://radiuspharm.com/. Any amendments to the code, or any waivers from its requirements, will be disclosed on our website. Information contained on or accessible through our website is not incorporated by reference into this report, and you should not consider information contained on or accessible through our website to be part of this report.

The remainder of the response to this item will be set forth in our definitive Proxy Statement for our 2017 Annual Meeting of Stockholders and is incorporated herein by reference.

ITEM 11. EXECUTIVE COMPENSATION.

The information required to be disclosed by this item will be set forth in our definitive Proxy Statement for our 2017 Annual Meeting of Stockholders and is incorporated herein by reference.

ITEM 12. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED STOCKHOLDER MATTERS.

The information required to be disclosed by this item will be set forth in our definitive Proxy Statement for our 2017 Annual Meeting of Stockholders and is incorporated herein by reference.

ITEM 13. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS, AND DIRECTOR INDEPENDENCE.

The information required to be disclosed by this item will be set forth in our definitive Proxy Statement for our 2017 Annual Meeting of Stockholders and is incorporated herein by reference.

ITEM 14. PRINCIPAL ACCOUNTANT FEES AND SERVICES.

The information required to be disclosed by this item will be set forth in our definitive Proxy Statement for our 2017 Annual Meeting of Stockholders and is incorporated herein by reference.

PART IV

ITEM 15. EXHIBITS AND FINANCIAL STATEMENT SCHEDULES.

(a) Financial Statements

The following consolidated financial statements and supplementary data are included in Part II of Item 8 filed of this Annual Report on Form 10-K:

(b) Financial Statement Schedules

All financial statement schedules have been omitted because they are not applicable or are not required, or because the information required to be set forth therein is included in the consolidated financial statements or notes thereto.

(c) Exhibits

The Exhibit Index follows the signature pages hereof and is incorporated herein by reference.

ITEM 16. FORM 10-K SUMMARY.

Not applicable.

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the registrant has duly caused this annual report to be signed on its behalf by the undersigned, thereunto duly authorized.

RADIUS HEALTH, INC.

By: /s/ ROBERT E. WARD

Robert E. Ward
President and Chief Executive Officer

Date: February 24, 2017

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed by the following persons on behalf of the registrant and in the capacities and on the dates indicated.

Signature	Title	Date
/s/ ROBERT E. WARD Robert E. Ward	Chief Executive Officer and Director (Principal Executive Officer)	February 24, 2017
/s/ B. NICHOLAS HARVEY B. Nicholas Harvey	Chief Financial Officer (Principal Accounting and Financial Officer)	February 24, 2017
/s/ ALAN H. AUERBACH Alan H. Auerbach	Director	February 24, 2017
/s/ WILLARD H. DERE Willard H. Dere	Director	February 24, 2017
/s/ CATHERINE FRIEDMAN Catherine Friedman	Director	February 24, 2017
/s/ ANSBERT K. GADICKE Ansbert K. Gadicke	Director	February 24, 2017
/s/ JEAN-PIERRE GARNIER Jean-Pierre Garnier	Director	February 24, 2017
/s/ KURT C. GRAVES Kurt C. Graves	Director	February 24, 2017
/s/ OWEN HUGHES Owen Hughes	Director	February 24, 2017
/s/ ANTHONY ROSENBERG Anthony Rosenberg	Director	February 24, 2017
/s/ DEBASISH ROYCHOWDHURY Debasish Roychowdhury	Director	February 24, 2017

EXHIBIT INDEX

Unless otherwise indicated, all references to previously filed Exhibits refer to the Company's filings with the Securities and Exchange Commission, or SEC, under File No. 001-35726.

Exhibit Number	Exhibit Description	Form	File No.	Exhibit	Filing Date	Filed/ Furnished Herewith
3.1	Restated Certificate of Incorporation	8-K		3.1	6/13/2014	
3.2	Amended and Restated By-Laws	8-K		3.2	6/13/2014	
4.1	Fifth Amended and Restated Stockholders' Agreement, dated April 24, 2014, between the Company and the stockholders party thereto	S-1/A	333-194150	4.2	4/25/2014	
	Management Contracts and Compensatory Plans					
10.1	Radius Health, Inc. 2003 Long-Term Incentive Plan (as amended)	10-K		10.20	3/10/2015	
10.1(a)	Radius Health, Inc. 2003 Long-Term Incentive Plan Form of Stock Option Agreement	8-K	000-53173	10.32	5/23/2011	
10.2	Radius Health, Inc. 2011 Equity Incentive Plan (as amended and restated)	8-K		10.1	5/27/2016	
10.2(a)	Form of Radius Health, Inc. 2011 Equity Incentive Plan Stock Option Agreement for Incentive Stock Options					*
10.2(b)	Form of Radius Health, Inc. 2011 Equity Incentive Plan Stock Option Agreement for Non-Incentive Stock Options					*
10.2(c)	Form of Radius Health, Inc. 2011 Equity Incentive Plan Restricted Stock Unit Grant Notice and Restricted Stock Unit Agreement, attached as Exhibit A thereto					*
10.3	Radius Health, Inc. 2016 Employee Stock Purchase Plan	8-K		10.2	5/27/2016	
10.4	Radius Health, Inc. Non-Employee Director Compensation Program (as amended)					*
10.5	Employment Letter Agreement, dated November 14, 2003, between the Company, as successor to Nuvios, Inc., and Gary Hattersley	8-K	000-53173	10.49	5/23/2011	
10.5(a)	Executive Severance Agreement, dated July 1, 2015, between the Company and Gary Hattersley	8-K		10.2	7/10/2015	
10.6	Employment Letter Agreement, dated November 15, 2006, between the Company, as successor to Radius Health, Inc., and B. Nicholas Harvey	8-K	000-53173	10.51	5/23/2011	
10.6(a)	Executive Severance Agreement, dated July 1, 2015, between the Company and B. Nicholas Harvey	8-K		10.1	7/10/2015	
10.7	Executive Employment Agreement, dated December 12, 2013, between the Company and Robert Ward	8-K		10.1	12/17/2013	
10.7(a)	First Amendment, dated July 1, 2015, to Executive Employment Agreement, dated December 12, 2013, between the Company and Robert Ward	8-K		10.5	7/10/2015	
10.8	Employment Letter Agreement, dated January 3, 2014, between the Company and Greg Williams	S-1/A	333-194150	10.141	4/3/2014	
10.8(a)	Executive Severance Agreement, dated July 1, 2015, between the Company and Greg Williams	8-K		10.4	7/10/2015	

10.9	Employment Letter Agreement, dated December 28, 2014, between the Company and Brent Hatzis-Schoch					*
10.10	Employment Letter Agreement, dated February 20, 2015, between the Company and Dinesh Purandare					*
10.11	Employment Letter Agreement, dated July 3, 2015, between the Company and Lorraine Fitzpatrick, M.D.					*
10.12	Employment Letter Agreement, dated August 31, 2015, between the Company and David Snow					*
10.13	Form of Executive Severance Agreement between the Company and David Snow, Lorraine Fitzpatrick, Dinesh Purandare and Brent Hatzis-Schoch					*
10.14	Form of Indemnification Agreement between the Company and its directors	10-K		10.30	3/10/2015	
	Other Agreements					
10.15	Form of Warrant to Purchase Shares of Common Stock in connection with the Series B Convertible Preferred Stock and Warrant Purchase Agreement, issued by the Company to certain investors and attached schedule with details	8-K		10.2	4/25/2013	
10.16	Form of Warrant to Purchase Shares of Common Stock in connection with the Series B-2 Convertible Preferred Stock and Warrant Purchase Agreement, issued by the Company to certain investors and attached schedule with details	8-K		10.2	2/21/2014	
10.17	Form of Warrant to Purchase Shares of Series A-1 Convertible Preferred Stock issued by the Company to GE Capital Equity Investments	10-K		10.5	3/10/2015	
10.18^	License Agreement, dated September 27, 2005, between the Company, as successor to Nuvios, Inc., and Ipsen Pharma SAS (f/k/a SCRAS S.A.S.) on behalf of itself and its affiliates, as amended on September 12, 2007 and May 11, 2011	10-K		10.15	3/10/2015	
10.19^	Development and Clinical Supplies Agreement, dated June 19, 2009, between the Company, as successor to Radius Health, Inc., 3M Co. and 3M Innovative Properties Co., as amended on December 31, 2009, September 16, 2010, September 29, 2010, March 2, 2011 and November 30, 2012	10-K		10.18	3/10/2015	
10.20^	License Agreement, dated June 29, 2006, between the Company and Eisai Co., Ltd.	8-K/A	000-53173	10.25	10/24/2011	
10.20(a)	License Agreement Amendment No. 1, dated March 9, 2015, between the Company and Eisai Co., Ltd.	10-Q		10.3	5/6/2015	
10.21^	Supply Agreement, dated June 23, 2016, between the Company and Ypsomed AG	10-Q		10.1	8/4/2016	
10.22^	Commercial Supply Agreement, dated June 28, 2016, between the Company and Vetter Pharma International GmbH	10-Q		10.2	8/4/2016	
10.23^	Manufacturing Services Agreement, dated July 13, 2016, between the Company and Polypeptide Laboratories Holding (PPL) AB, as successor to Lonza Sales Ltd	10-Q		10.1	11/3/2016	

10.24	Indenture of Lease, dated May 14, 2014, between the Company and BP Bay Colony LLC	8-K	10.1	5/20/2014	
10.24(a)	First Amendment, dated September 9, 2015, to Lease, dated May 14, 2014, between the Company and BP Bay Colony LLC	10-Q	10.6	11/5/2015	
21.1	Subsidiaries of the Company				*
23.1	Consent of Ernst & Young LLP, Independent Registered Public Accounting Firm				*
31.1	Rule 13a-14(a)/15d-14(a) Certification of Chief Executive Officer				*
31.2	Rule 13a-14(a)/15d-14(a) Certification of Chief Financial Officer				*
32.1	Section 1350 Certification of Chief Executive Officer				**
32.2	Section 1350 Certification of Chief Financial Officer				**
101.INS	XBRL Instance Document				*
101.SCH	XBRL Taxonomy Extension Schema Document				*
101.CAL	XBRL Taxonomy Extension Calculation Linkbase Document				*
101.LAB	XBRL Taxonomy Extension Label Linkbase Document				*
101.PRE	XBRL Taxonomy Extension Presentation Linkbase Document				*
101.DEF	XBRL Taxonomy Extension Definition Linkbase Document				*

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^ Confidential treatment has been granted with respect to redacted portions of this exhibit. Redacted portions of this exhibit have been filed separately with the SEC.

* Filed herewith.

** Furnished herewith.

Exhibit 10.2(a)

RADIUS HEALTH, INC.
2011 EQUITY INCENTIVE PLAN

STOCK OPTION AGREEMENT

THIS STOCK OPTION AGREEMENT (the " Agreement ") is entered into as of the Grant Date set forth below (the " Grant Date ") between Radius Health, Inc., a corporation organized under the laws of the State of Delaware (the " Company "), and the individual optionee identified in Section 1 below (the " Optionee ").

1. Grant of Option. Pursuant and subject to the Company's 2011 Equity Incentive Plan as attached hereto (as the same may be amended from time to time, the " Plan "), the Company grants to you, the Optionee identified in the table below, an option (the " Option ") to purchase from the Company all or any part of a total of the number of shares identified in the table below (the " Optioned Shares ") of the common stock, par value $0.0001 per share, in the Company (the " Stock "), at the exercise price per share set out in the table below.

Optionee

Number of Shares

Exercise Price Per Share

Grant Date

Vesting Commencement Date

Expiration Date

2. Character of Option.

The Option shall be an Incentive Option (within the meaning of the Plan) to the maximum extent permitted by law.

3. Expiration of Option. No portion of the Option which has not become vested and exercisable at the date of your termination of employment or other service with the Company shall thereafter become vested and exercisable (and any such unvested portion shall thereupon be immediately forfeited), except as may be otherwise provided by the Board or Committee, as applicable, or as set forth in a written agreement between the Company and you. This Option shall expire at 5:00 p.m. Eastern Time on the Expiration Date or, if earlier, the earliest of the dates specified in whichever of the following applies:

(a) If the termination of your employment or other service is on account of your death or disability, the date that is twelve (12) months from the date on which your employment or other service with the Company ends.

(b) If the termination of your employment or other service is due to any other reason, the date that is three (3) months from the date on which your employment or other service with the Company ends.

(c) If the Company terminates your employment or other service for cause, or at the termination of your employment or other service the Company had grounds to terminate your employment or other service for cause (whether then or thereafter determined), the start of business on the date on which the termination of your employment or other service with the Company ends.

4. Exercise of Option. Subject to Section 3, this Option will vest and become exercisable as to 25% of the Optioned Shares on the first anniversary of the Vesting Commencement Date and as to 1/48 th of the Optioned Shares on the same day of each of the 36 consecutive months thereafter, provided that each Optioned Share which would be fractionally vested shall be cumulated and shall vest on the first vesting date upon which the whole Optioned Share has cumulated. However, during any period that this Option remains outstanding after your employment or other service with the Company ends, you may exercise it only to the extent it was exercisable immediately prior to the end of your employment or other service. To exercise the Option, you must complete the transaction through our administrative agent's website or call its toll free number, specifying the number of Optioned Shares being purchased as a result of such exercise, together with payment of the full Exercise Price for the Optioned Shares being purchased. In no event may a fraction of a share be exercised or acquired. You must also pay any taxes or other amounts required to be withheld as provided in Section 9.8 of the Plan.

5. Transfer of Option. You may not transfer this Option except by will or the laws of descent and distribution, and, during your lifetime, only you may exercise this Option. After your death, any exercisable portion of the Option may, prior to the time when the Option becomes unexercisable under Sections 3 and 4, be exercised by your personal representative or by any person empowered to do so under your will or under the then-applicable laws of descent and distribution.

6. Community Property. Without prejudice to the actual rights of the spouses as between each other, for all purposes of this Agreement, you shall be treated as agent and attorney-in-fact for that interest held or claimed by your spouse with respect to this Option and any Optioned Shares and the parties hereto shall act in all matters as if you were the sole owner of this Option and (following exercise) any such Optioned Shares. This

appointment is coupled with an interest and is irrevocable.

7. Incorporation of Plan Terms. This Option is granted subject to all of the applicable terms and provisions of the Plan, including but not limited to Section 7.1 of the Plan (Options) and the limitations on the Company's obligation to deliver Optioned Shares upon exercise set forth in Section 9 of the Plan (Settlement of Awards). You acknowledge that the Option is subject to modification and termination in certain events as provided in this Agreement and Section 7.11 of the Plan (Adjustment Provisions).

8. Rights as Stockholder . The holder of the Option shall not be, nor have any of the rights or privileges of, a stockholder of the Company in respect of any shares of Stock purchasable upon the exercise of any part of the Option unless and until such shares of Stock shall have been issued by the Company to such holder (as evidenced by the appropriate entry on the books of the Company or of a duly authorized transfer agent of the Company).

9. Miscellaneous. The Board or Committee, as applicable, shall have the power to interpret this Agreement and to adopt such rules for the administration, interpretation and application of the Plan as are consistent therewith and to interpret, amend or revoke any such rules. This Agreement shall be construed and enforced in accordance with the laws of the State of Delaware, without regard to the conflict of laws principles thereof and shall be binding upon and inure to the benefit of any successor or assign of the Company and any executor, administrator, trustee, guardian, or other legal representative of you. The Plan and this Agreement constitute the entire agreement of the parties and supersede in their entirety all prior undertakings and agreements of the Company and you with respect to the subject matter hereof, with the exception, if applicable, of (i) any written employment agreement, offer letter or other written agreement entered into between the Company and you that makes an express reference to this Section 9 of this Agreement and specifies the terms that should govern this Award, and (ii) any compensation clawback, recoupment, forfeiture or recovery policy that is adopted by the Company from time to time or is otherwise required by applicable law. Capitalized terms used but not defined herein shall have the meaning assigned under the Plan. This Agreement may be executed in one or more counterparts all of which together shall constitute but one instrument.

10. Notification of Disposition and Tax Reporting. If this Option is designated as an Incentive Option, you shall give prompt notice to the Company of any disposition or other transfer of any shares of Stock acquired under this Agreement if such disposition or transfer is made (a) within two (2) years from the Grant Date with respect to such shares or Stock or (b) within one (1) year after the transfer of such shares of Stock to you. Such notice shall specify the date of such disposition or other transfer and the amount realized, in cash, other property, assumption of indebtedness or other consideration, by you in such disposition or other transfer. To facilitate the tax reporting of any early disposition of shares of Stock, you must maintain any shares of Stock resulting from the exercise of this Option which you do not sell at the stock brokerage firm selected by the Company until the later of (i) two (2) years from the Grant Date, or (ii) one year after your date of exercise.

11. Tax Consequences. The Company makes no representation or warranty as to the tax treatment to you of your receipt or exercise of this Option or upon your sale or other disposition of the Optioned Shares. You should rely on your own tax advisors for such advice. **In particular, you acknowledge that this Option will not be treated as an Incentive Option as to any shares of Stock acquired under this Option**

(a) more than twelve months after your employment ends, if your employment ends on account of your death or total and permanent disability, or

(b) more than three months after your employment ends, if your employment ends in any other circumstance.

12. Consideration to the Company. In consideration of the grant of the Option by the Company, you agree to render faithful and efficient services to the Company or any Affiliate. Nothing in the Plan or this Agreement shall confer upon you any right to continue in the employ or service of the Company or any Affiliate or shall interfere with or restrict in any way the rights of the Company and its Affiliates, which rights are hereby expressly reserved, to discharge or terminate your services at any time for any reason whatsoever, with or without cause, except to the extent expressly provided otherwise in a written agreement between the Company or an Affiliate and you.

13. Limitations Applicable to Section 16 Persons. Notwithstanding any other provision of the Plan or this Agreement, if you are subject to Section 16 of the Securities Exchange Act of 1934, as amended (the " Exchange Act "), the Plan, the Option and this Agreement shall be subject to any additional limitations set forth in any applicable exemptive rule under Section 16 of the Exchange Act (including any amendment to Rule 16b-3 of the Exchange Act) that are requirements for the application of such exemptive rule. To the extent permitted by applicable law, this Agreement shall be deemed amended to the extent necessary to conform to such applicable exemptive rule.

14. Conformity to Securities Laws. You acknowledge that the Plan and this Agreement are intended to conform to the extent necessary with all provisions of the Securities Act of 1933, as amended, and the Exchange Act and any and all regulations and rules promulgated by the Securities and Exchange Commission thereunder, and state securities laws and regulations. Notwithstanding anything herein to the contrary, the Plan shall be administered, and the Option is granted and may be exercised, only in such a manner as to conform to such laws, rules and regulations. To the extent permitted by applicable law, the Plan and this Agreement shall be deemed amended to the extent necessary to conform to such laws, rules and regulations.

15. Acceptance of Option . You must execute this Agreement by logging on to our administrative agent's website for the Plan. *IF YOU DO NOT ELECTRONICALLY ACCEPT THIS OPTION THROUGH THE WEBSITE WITHIN THIRTY (30) DAYS FOLLOWING THE GRANT DATE AND THEREBY ACCEPT THE TERMS AND CONDITIONS OF THIS AGREEMENT AND THE PLAN, THEN YOU WILL BE DEEMED TO HAVE DECLINED THE OPTION AND THE OPTION WILL BE NULL AND VOID (AND YOU WILL HAVE NO RIGHTS WITH RESPECT TO THE OPTION)* .

Exhibit 10.2(b)

RADIUS HEALTH, INC.
2011 EQUITY INCENTIVE PLAN

STOCK OPTION AGREEMENT

This Stock Option Agreement (the " ***Agreement*** ") is entered into as of the Grant Date set forth below (the " ***Grant Date*** ") between Radius Health, Inc., a corporation organized under the laws of the State of Delaware (the " ***Company*** "), and the individual optionee identified in Section 1 below (the " ***Optionee*** ").

1. Grant of Option . Pursuant and subject to the Company's 2011 Equity Incentive Plan as attached hereto (as the same may be amended from time to time, the " ***Plan*** "), the Company grants to you, the Optionee identified in the table below, an option (the " ***Option*** ") to purchase from the Company all or any part of a total of the number of shares identified in the table below (the " ***Optioned Shares*** ") of the common stock, par value $0.0001 per share, in the Company (the " ***Stock*** "), at the exercise price per share set out in the table below.

Optionee

Number of Shares

Exercise Price Per Share

Grant Date

Vesting Commencement Date Same as Grant Date

Expiration Date

2. Character of Option .

The Option shall be a Nonstatutory Option and not an Incentive Option (as such terms are defined in the Plan).

3. Expiration of Option . No portion of the Option which has not become vested and exercisable at the date of your termination of employment or other service with the Company shall thereafter become vested and exercisable (and any such unvested portion shall thereupon be immediately forfeited), except as may be otherwise provided by the Board or Committee, as applicable, or as set forth in a written agreement between the Company and you. This Option shall expire at 5:00 p.m. Eastern Time on the Expiration Date or, if earlier, the earliest of the dates specified in whichever of the following applies:

(a) If the termination of your employment or other service is on account of your death or disability, the date that is twelve (12) months from the date on which your employment or other service with the Company ends.

(b) If the termination of your employment or other service is due to any other reason, the date that is three (3) months from the date on which your employment or other service with the Company ends.

(c) If the Company terminates your employment or other service for cause, or at the termination of your employment or other service the Company had grounds to terminate your employment or other service for cause (whether then or thereafter determined), the start of business on the date on which the termination of your employment or other service with the Company ends.

4. Exercise of Option . Subject to Section 3, this Option will vest and become exercisable as to 25% of the Optioned Shares on the first anniversary of the Vesting Commencement Date and as to 1/48 th of the Optioned Shares on the same day of each of the 36 consecutive months thereafter, provided that each Optioned Share which would be fractionally vested shall be cumulated and shall vest on the first vesting date upon which the whole Optioned Share has cumulated. However, during any period that this Option remains outstanding after your employment or other service with the Company ends, you may exercise it only to the extent it was exercisable immediately prior to the end of your employment or other service. To exercise the Option, you must complete the transaction through our administrative agent's website or call its toll free number, specifying the number of Optioned Shares being purchased as a result of such exercise, together with payment of the full Exercise Price for the Optioned Shares being purchased. In no event may a fraction of a share be exercised or acquired. You must also pay any taxes or other amounts required to be withheld as provided in Section 9.8 of the Plan.

5. Transfer of Option . You may not transfer this Option except by will or the laws of descent and distribution, and, during your lifetime, only you may exercise this Option. After your death, any exercisable portion of the Option may, prior to the time when the Option becomes unexercisable under Sections 3 and 4, be exercised by your personal representative or by any person empowered to do so under your will or under the then-applicable laws of descent and distribution.

6. Community Property . Without prejudice to the actual rights of the spouses as between each other, for all purposes of this Agreement, you shall be treated as agent and attorney-in-fact for that interest held or claimed by your spouse with respect to this Option and any Optioned Shares and the parties hereto shall act in all matters as if you were the sole owner of this Option and (following exercise) any such Optioned Shares. This

appointment is coupled with an interest and is irrevocable.

7. Incorporation of Plan Terms . This Option is granted subject to all of the applicable terms and provisions of the Plan, including but not limited to Section 7.1 of the Plan (Options) and the limitations on the Company's obligation to deliver Optioned Shares upon exercise set forth in Section 9 of the Plan (Settlement of Awards). You acknowledge that the Option is subject to modification and termination in certain events as provided in this Agreement and Section 7.11 of the Plan (Adjustment Provisions).

8. Rights as Stockholder . The holder of the Option shall not be, nor have any of the rights or privileges of, a stockholder of the Company in respect of any shares of Stock purchasable upon the exercise of any part of the Option unless and until such shares of Stock shall have been issued by the Company to such holder (as evidenced by the appropriate entry on the books of the Company or of a duly authorized transfer agent of the Company).

9. Miscellaneous . The Board or Committee, as applicable, shall have the power to interpret this Agreement and to adopt such rules for the administration, interpretation and application of the Plan as are consistent therewith and to interpret, amend or revoke any such rules. This Agreement shall be construed and enforced in accordance with the laws of the State of Delaware, without regard to the conflict of laws principles thereof and shall be binding upon and inure to the benefit of any successor or assign of the Company and any executor, administrator, trustee, guardian, or other legal representative of you. The Plan and this Agreement constitute the entire agreement of the parties and supersede in their entirety all prior undertakings and agreements of the Company and you with respect to the subject matter hereof, with the exception, if applicable, of (i) any written employment agreement, offer letter or other written agreement entered into between the Company and you that makes an express reference to this Section 9 of this Agreement and specifies the terms that should govern this Award, and (ii) any compensation clawback, recoupment, forfeiture or recovery policy that is adopted by the Company from time to time or is otherwise required by applicable law. Capitalized terms used but not defined herein shall have the meaning assigned under the Plan. This Agreement may be executed in one or more counterparts all of which together shall constitute but one instrument.

10. Tax Consequences . The Company makes no representation or warranty as to the tax treatment to you of your receipt or exercise of this Option or upon your sale or other disposition of the Optioned Shares. You should rely on your own tax advisors for such advice.

11. Consideration to the Company . In consideration of the grant of the Option by the Company, you agree to render faithful and efficient services to the Company or any Affiliate. Nothing in the Plan or this Agreement shall confer upon you any right to continue in the employ or service of the Company or any Affiliate or shall interfere with or restrict in any way the rights of the Company and its Affiliates, which rights are hereby expressly reserved, to discharge or terminate your services at any time for any reason whatsoever, with or without cause, except to the extent expressly provided otherwise in a written agreement between the Company or an Affiliate and you.

12. Limitations Applicable to Section 16 Persons . Notwithstanding any other provision of the Plan or this Agreement, if you are subject to Section 16 of the Securities Exchange Act of 1934, as amended (the " ***Exchange Act*** "), the Plan, the Option and this Agreement shall be subject to any additional limitations set forth in any applicable exemptive rule under Section 16 of the Exchange Act (including any amendment to Rule 16b-3 of the Exchange Act) that are requirements for the application of such exemptive rule. To the extent permitted by applicable law, this Agreement shall be deemed amended to the extent necessary to conform to such applicable exemptive rule.

13. Conformity to Securities Laws . You acknowledge that the Plan and this Agreement are intended to conform to the extent necessary with all provisions of the Securities Act of 1933, as amended, and the Exchange Act and any and all regulations and rules promulgated by the Securities and Exchange Commission thereunder, and state securities laws and regulations. Notwithstanding anything herein to the contrary, the Plan shall be administered, and the Option is granted and may be exercised, only in such a manner as to conform to such laws, rules and regulations. To the extent permitted by applicable law, the Plan and this Agreement shall be deemed amended to the extent necessary to conform to such laws, rules and regulations.

14. Acceptance of Option . You must execute this Agreement by logging on to our administrative agent's website for the Plan. *IF YOU DO NOT ELECTRONICALLY ACCEPT THIS OPTION THROUGH THE WEBSITE WITHIN THIRTY (30) DAYS FOLLOWING THE GRANT DATE AND THEREBY ACCEPT THE TERMS AND CONDITIONS OF THIS AGREEMENT AND THE PLAN, THEN YOU WILL BE DEEMED TO HAVE DECLINED THE OPTION AND THE OPTION WILL BE NULL AND VOID (AND YOU WILL HAVE NO RIGHTS WITH RESPECT TO THE OPTION)* .

Exhibit 10.2(c)

RADIUS HEALTH, INC.
2011 EQUITY INCENTIVE PLAN

RESTRICTED STOCK UNIT GRANT NOTICE

Capitalized terms not specifically defined in this Restricted Stock Unit Grant Notice (the " ***Grant Notice*** ") have the meanings given to them in the 2011 Equity Incentive Plan (as amended from time to time, the " ***Plan*** ") of Radius Health, Inc. (the " ***Company*** ").

The Company has granted to the participant listed below (" ***Participant*** ") the Restricted Stock Units described in this Grant Notice (the " ***RSUs*** "), subject to the terms and conditions of the Plan and the Restricted Stock Unit Agreement attached as **Exhibit A** (the " ***Agreement*** "), both of which are incorporated into this Grant Notice by reference.

Participant:

Grant Date:

Number of RSUs:

Vesting Commencement Date:

Vesting Schedule: Subject to the terms of the Agreement, the RSUs will vest in four substantially equal annual installments on each of the first four anniversaries of the vesting commencement date set forth above (the " ***Vesting Commencement Date*** "), such that the RSUs will be fully vested on the fourth anniversary of the Vesting Commencement Date, provided that the Participant remains in continuous employment or service with the Company from the Grant Date through the relevant anniversary of the Vesting Commencement Date.

Participant agrees to be bound by the terms of this Grant Notice, the Plan and the Agreement. Participant has reviewed the Plan, this Grant Notice and the Agreement in their entirety, has had an opportunity to obtain the advice of counsel prior to agreeing to this Grant Notice and fully understands all provisions of the Plan, this Grant Notice and the Agreement. Participant agrees to accept as binding, conclusive and final all decisions or interpretations of the Board or Committee, as applicable, upon any questions arising under the Plan, this Grant Notice or the Agreement.

* * * * *

Exhibit A

RESTRICTED STOCK UNIT AGREEMENT

Capitalized terms not specifically defined in this Agreement have the meanings specified in the Grant Notice or, if not defined in the Grant Notice, in the Plan.

Article I.
GENERAL

1.1 Award of RSUs and Dividend Equivalents .

(a) The Company has granted the RSUs to Participant effective as of the grant date set forth in the Grant Notice (the " ***Grant Date*** "). Each RSU represents the right to receive one share of Stock (a " ***Share*** ") or, at the option of the Company, an amount of cash, in either case, as set forth in this Agreement. Participant will have no right to the distribution of any Shares or payment of any cash until the time (if ever) the RSUs have vested.

(b) The Company hereby grants to Participant, with respect to the number of RSUs set forth in the Grant Notice, a right (a " ***Dividend Equivalent*** ") to receive with respect to each RSU payments equivalent to the value of any ordinary cash dividends paid on a single Share, if such dividends are paid to substantially all holders of outstanding Shares with a record date after the Grant Date and prior to the date the applicable RSU is settled, forfeited or otherwise expires. The Company will establish a separate Dividend Equivalent bookkeeping account (a " ***Dividend Equivalent Account*** ") for each Dividend Equivalent and credit the Dividend Equivalent Account (without interest) on the applicable dividend payment date with the amount of any such cash paid.

1.2 Incorporation of Terms of Plan . The RSUs and Dividend Equivalents are subject to the terms and conditions set forth in this Agreement and the Plan, which is incorporated herein by reference. In the event of any inconsistency between the Plan and this Agreement, the terms of the Plan will control.

1.3 Unsecured Promise . The RSUs and Dividend Equivalents will at all times prior to settlement represent an unsecured Company obligation payable only from the Company's general assets.

ARTICLE II.
VESTING; FORFEITURE AND SETTLEMENT

2.1 Vesting; Forfeiture . The RSUs will vest according to the Vesting Schedule set forth in the Grant Notice, except that any fraction of an RSU that would otherwise be vested will be accumulated and will vest only when a whole RSU has accumulated. In the event of Participant's termination of employment or service with the Company and its subsidiaries for any reason, all unvested RSUs will immediately and automatically be cancelled and forfeited, except as otherwise determined by the Board or Committee, as applicable, or provided in a binding written agreement between Participant and the Company. Dividend Equivalents (including any Dividend Equivalent Account balance) will vest or be forfeited, as applicable, upon the vesting or forfeiture of the RSU with respect to which the Dividend Equivalent (including the Dividend Equivalent Account) relates.

2.2 Settlement .

(a) RSUs and Dividend Equivalents (including any Dividend Equivalent Account balance) will be paid in Shares or cash at the Company's option as soon as administratively practicable after the applicable anniversary of the Vesting Commencement Date for the RSU, but in no event more than sixty (60) days after each such vesting date.

(b) If an RSU is paid in cash, the amount of cash paid with respect to the RSU will equal the Market Value of a Share on the day immediately preceding the payment date. If a Dividend Equivalent is paid in Shares, the number of Shares paid with respect to the Dividend Equivalent will equal the quotient, rounded down to the nearest whole Share, of the Dividend Equivalent Account balance divided by the Market Value of a Share on the day immediately preceding the payment date.

ARTICLE III.
TAXATION AND TAX WITHHOLDING

3.1 Representation. Participant represents to the Company that Participant has reviewed with Participant's own tax advisors the tax consequences of this Award and the transactions contemplated by the Grant Notice and this Agreement. Participant is relying solely on such advisors and not on any statements or representations of the Company or any of its agents.

3.2 Tax Withholding.

(a) The Company has the right and option, but not the obligation, to treat Participant's failure to provide timely payment in accordance with the Plan of any withholding tax arising in connection with the RSUs or Dividend Equivalents as Participant's election to satisfy all or any portion of the withholding tax by requesting the Company retain Shares otherwise issuable under the Award.

(b) Notwithstanding the foregoing or any Plan provision, unless the Board or Committee, as applicable, determines otherwise, the requirement for Participant to satisfy all withholding obligations arising in connection with the RSUs or Dividend Equivalents will be satisfied by placing a market sell order with a broker acceptable to the Company covering a sufficient number of Shares otherwise then-issuable under the Award as are necessary to satisfy the statutory tax withholding obligations arising in connection with the RSUs and Dividend Equivalents, as determined by the Company. The net proceeds of such sale shall be delivered to the Company or its applicable subsidiary upon the settlement of such sale. Participant acknowledges that, unless otherwise determined by the Board or Committee, as applicable, such market sell order will be placed automatically and that it is mandatory, binding and non-discretionary on the part of Participant.

(c) Participant acknowledges that Participant is ultimately liable and responsible for all taxes owed in connection with the RSUs and the Dividend Equivalents, regardless of any action the Company or any of its subsidiaries takes with respect to any tax withholding obligations that arise in connection with the RSUs or Dividend Equivalents. Neither the Company nor any of its subsidiaries makes any representation or undertaking regarding the treatment of any tax withholding in connection with the awarding, vesting or payment of the RSUs or the Dividend Equivalents or the subsequent sale of Shares. The Company and its subsidiaries do not commit and are under no obligation to structure the RSUs or Dividend Equivalents to reduce or eliminate Participant's tax liability.

ARTICLE IV.
OTHER PROVISIONS

4.1 Adjustments. Participant acknowledges that the RSUs, the Shares subject to the RSUs and the Dividend Equivalents are subject to adjustment, modification and termination in certain events as provided in this Agreement and the Plan.

4.2 Notices. Any notice to be given under the terms of this Agreement to the Company must be in writing and addressed to the Company in care of the Company's General Counsel at the Company's principal office or the General Counsel's then-current email address or facsimile number. Any notice to be

given under the terms of this Agreement to Participant must be in writing and addressed to Participant at Participant's last known mailing address, email address or facsimile number in the Company's personnel files. By a notice given pursuant to this Section, either party may designate a different address for notices to be given to that party. Any notice will be deemed duly given when actually received, when sent by email, when sent by certified mail (return receipt requested) and deposited with postage prepaid in a post office or branch post office regularly maintained by the United States Postal Service, when delivered by a nationally recognized express shipping company or upon receipt of a facsimile transmission confirmation.

4.3 Titles . Titles are provided herein for convenience only and are not to serve as a basis for interpretation or construction of this Agreement.

4.4 Conformity to Laws . Participant acknowledges that the Plan, the Grant Notice and this Agreement are intended to conform to the extent necessary with all applicable laws and, to the extent applicable laws permit, will be deemed amended as necessary to conform to applicable laws. Notwithstanding any other provision of the Plan or this Agreement, if the Participant is subject to Section 16 of the Securities Exchange Act of 1934, as amended (the " ***Exchange Act*** "), the Plan, the Award and this Agreement shall be subject to any additional limitations set forth in any applicable exemptive rule under Section 16 of the Exchange Act (including any amendment to Rule 16b-3 of the Exchange Act) that are requirements for the application of such exemptive rule. To the extent permitted by applicable law, this Agreement shall be deemed amended to the extent necessary to conform to such applicable exemptive rule.

4.5 Transfer of Award . Participant may not transfer this Award except by will or the laws of descent and distribution. Upon the Participant's death, vesting of this Award will cease and the executor or administrator of the Participant's estate shall be entitled to receive, on behalf of such estate, any such Shares or other consideration that vested but were not issued before the Participant's death.

4.6 Successors and Assigns . The Company may assign any of its rights under this Agreement to single or multiple assignees, and this Agreement will inure to the benefit of the successors and assigns of the Company. Subject to the restrictions on transfer set forth in the Plan, this Agreement will be binding upon and inure to the benefit of the heirs, legatees, legal representatives, successors and assigns of the parties hereto.

4.7 Entire Agreement . The Plan, the Grant Notice and this Agreement (including any exhibit hereto) constitute the entire agreement of the parties and supersede in their entirety all prior undertakings and agreements of the Company and Participant with respect to the subject matter hereof, with the exception, if applicable, of (i) any written employment agreement, offer letter or other written agreement entered into between the Company and Participant that makes an express reference to this Section 4.7 of this Agreement and specifies the terms that should govern this Award, and (ii) any compensation clawback, recoupment, forfeiture or recovery policy that is adopted by the Company from time to time or is otherwise required by applicable law.

4.8 Agreement Severable . In the event that any provision of the Grant Notice or this Agreement is held illegal or invalid, the provision will be severable from, and the illegality or invalidity of the provision will not be construed to have any effect on, the remaining provisions of the Grant Notice or this Agreement.

4.9 Limitation on Participant's Rights . Participation in the Plan confers no rights or interests other than as herein provided. This Agreement creates only a contractual obligation on the part of the Company as to amounts payable and may not be construed as creating a trust. Neither the Plan nor any underlying program, in and of itself, has any assets. Participant will have only the rights of a general unsecured creditor of the Company with respect to amounts credited and benefits payable, if any, with respect to the RSUs and Dividend Equivalents, and rights no greater than the right to receive cash or the Shares as a general

unsecured creditor with respect to the RSUs and Dividend Equivalents, as and when settled pursuant to the terms of this Agreement.

4.10 Not a Contract of Employment . Nothing in the Plan, the Grant Notice or this Agreement confers upon Participant any right to continue in the employ or service of the Company or any of its subsidiaries or interferes with or restricts in any way the rights of the Company and its subsidiaries, which rights are hereby expressly reserved, to discharge or terminate the services of Participant at any time for any reason whatsoever, with or without cause, except to the extent expressly provided otherwise in a written agreement between the Company or its subsidiary and Participant.

4.11 Community Property . Without prejudice to the actual rights of the spouses as between each other, for all purposes of this Agreement, the Participant shall be treated as agent and attorney-in-fact for that interest held or claimed by the Participant's spouse with respect to this Award and any Shares subject to the RSUs and the parties hereto shall act in all matters as if the Participant was the sole owner of this Award and any such vested Shares. This appointment is coupled with an interest and is irrevocable.

4.12 Acceptance of this Agreement . The Participant must execute this Grant Notice and Agreement by logging on to our administrative agent's website for the Plan. *IF THE PARTICIPANT DOES NOT ELECTRONICALLY ACCEPT THIS AWARD THROUGH THE WEBSITE WITHIN THIRTY (30) DAYS FOLLOWING THE GRANT DATE AND THEREBY ACCEPT THE TERMS AND CONDITIONS OF THIS GRANT NOTICE, AGREEMENT AND THE PLAN, THEN THE PARTICIPANT WILL BE DEEMED TO HAVE DECLINED THE AWARD AND THIS AWARD WILL BE NULL AND VOID (AND THE PARTICIPANT WILL HAVE NO RIGHTS WITH RESPECT TO THE AWARD)* .

Exhibit 10.4

RADIUS HEALTH, INC.
NON-EMPLOYEE DIRECTOR COMPENSATION PROGRAM

This Radius Health, Inc. (the " Company ") Non-Employee Director Compensation Program (this " Program ") has been adopted under the Company's 2011 Equity Incentive Plan, as amended (the " 2011 Plan "). The Equity Compensation portion of this Program is intended to constitute the Non-Employee Director Equity Compensation Policy contemplated by Section 6.2 of the 2011 Plan. Capitalized terms not otherwise defined herein shall have the meaning ascribed thereto in the 2011 Plan.

Cash Compensation

Annual retainers will be paid in the following amounts to Non-Employee Directors:

Non-Employee Director:	$50,000
Chair of Audit Committee:	$20,000
Chair of Compensation Committee:	$15,000
Chair of Nominating and Corporate Governance Committee:	$10,000
Chair of Strategy Committee:	$15,000
Audit Committee Member (other than Chair):	$10,000
Compensation Committee Member (other than Chair):	$7,500
Nominating and Corporate Governance Committee Member (other than Chair):	$5,000
Strategy Committee Member (other than Chair):	$7,500
Independent Chairman:	$25,000

All annual retainers will be paid in cash quarterly in arrears promptly following the end of the applicable calendar quarter, but in no event more than thirty (30) days after the end of such quarter. In the event a Non-Employee Director does not serve as a Non-Employee Director or in one of the other positions identified above for an entire calendar quarter, the retainer paid to the Non-Employee director for the applicable calendar quarter will be prorated for the portion of the calendar quarter during which the applicable services were actually rendered.

Equity Compensation

Initial Stock Option Grant:	Each Non-Employee Director who is initially elected or appointed to serve on the Board after the date hereof shall be granted an Option to purchase 30,000 shares of Common Stock under the 2011 Plan or any other applicable Company equity incentive plan then-maintained by the Company (the " Initial Option "). The Initial Option will automatically, and without further action by the Board or Committee, be granted on the date on which such Non-Employee Director commences service on the Board, and will vest in substantially equal installments on each of the first four anniversaries of the date of grant, subject to continued service as a Non-Employee Director through each vesting date.
Annual Stock Option Grant:	Each year, beginning in 2017, subject to any annual limits in the 2011 Plan on the maximum number of shares subject to an award to an individual Director, any Director who has been serving on the Board as a Non-Employee Director for at least 3 months as of the date of the grant of annual incentive equity awards for Executive Officers of the Company shall be granted an Option to purchase 27,500 shares of Common Stock under the 2011 Plan or any other applicable Company equity incentive plan then-maintained by the Company (the " Annual Option "). The Annual Option will automatically, and without further action by the Board or Committee, be granted on the date of the grant of annual incentive equity awards for Executive Officers of the Company, and will vest in full on the first (1 st) anniversary of the date of grant, subject in each case to continued service through the vesting date.

Change of Control

Upon a Change of Control, all outstanding equity awards granted under the 2011 Plan or any other equity incentive plan maintained by the Company that are held by a Non-Employee Director shall become fully vested and/or exercisable, irrespective of any other provisions of the Non-Employee Director's Award Agreement.

Miscellaneous

The provisions of the 2011 Plan shall apply to the Options granted pursuant to this Program, except to the extent such provisions are inconsistent with this Program. All applicable terms of the 2011 Plan apply to this Program as if fully set forth herein. The grant of any Option under this Program shall be made solely by and subject to the terms set forth in a written agreement substantially in the form of the stock option agreement approved by the Board and duly executed by an executive officer of the Company. The exercise price per share of Stock subject to an Option granted under this Program shall be the Market Value of a share of Stock on the Option's date of grant.

Amendment, Modification and Termination

This Program may be amended, modified or terminated by the Board at any time in its sole discretion. No Non-Employee Director shall have any rights hereunder, except with respect to an Option granted pursuant to the Program.

As amended, effective as of January 1, 2016.

Exhibit 10.9

950 Winter Street
Waltham, MA 02451
Tel: (617) 5514000
Fax: (617) 5514701

December 28, 2014

Brent Hatzis-Schoch
Goethestrasse 4lA
Kronberg, Germany 61476

Dear Brent:

On behalf of Radius Health, Inc. (the "Company"), with offices at 950 Winter Street, Waltham, MA, 02451, I am pleased to offer you full-time employment as the Senior Vice President & General Counsel of the Company on the terms set forth below. This letter agreement is subject to, and will become effective only upon, your commencing employment with the Company on or about April 30, 2015.

In the course of your employment with the Company, you will be subject to and required to comply with all Company policies, and applicable laws and regulations. The term "Agreement" as used below shall mean this letter agreement.

Duties; Work Location

As General Counsel, you will report to the Company's Chief Executive Officer and will have such duties and authority as are normally associated with such position or as may from time to time be assigned to you by the Board of Directors of Company or an authorized committee (the "Board"). The Company requires that, as a full-time employee, you devote your full business time, attention, skill, and efforts to the tasks and duties of your position with the Company. Your normal place of work will initially be the Company's Waltham, Massachusetts offices; however, your duties may require reasonable business travel as determined by the Chief Executive Officer.

Cash Compensation

You will earn a salary at the semi-monthly rate of $15,304.16, annualized at a rate of $367,300, or such greater amount as is subsequently determined by the Board (the "Annual Base Salary"). All compensation amounts payable pursuant to this Agreement shall be subject to all applicable tax and other withholdings.

In addition, subject to approval of the Board, you will be eligible for an annual discretionary bonus (your "Annual Bonus"), which Annual Bonus shall be targeted at 35% (your "Target") of your annualized base salary, subject to pro-ration during any year in which you are employed for less than the full year. The Board also has the discretion to award a bonus in excess of your Annual Target Bonus for exemplary performance. Any Annual Bonus will be based on both individual and corporate performance and the amount of any such Annual Bonus will be determined by the Company. Annual Bonuses shall be paid to you when generally paid to other senior executives of the Company, subject to your continued employment through the payment date.

You will also be entitled to reimbursement of all business expenses reasonably incurred in connection with the performance of your functions and duties under this Agreement, subject to the Company's expense reimbursement policy in effect from time to time.

Equity Incentive

Subject to approval by the Board after the commencement of your employment, the Company will grant to you an initial stock option (the "Initial Option") under the Radius Health, Inc. 2011 Equity Incentive Plan (the "Plan") for the purchase of 140,000 shares (subject to appropriate adjustment in the event of any stock split, stock dividend or other similar event) of common stock

of the Company ("Common Stock") at a price per share equal to the Common Stock's closing price on the NASDAQ Global Market on the date of grant. The Initial Option shall be subject to all terms and other provisions set forth in the Plan and in a separate option agreement and will vest as to 25% of the underlying shares on the first anniversary of the date you commence employment with the Company and in quarterly installments over the following three years.

Sign-On Bonus

You will be eligible to receive a Sign-On Bonus in the gross amount of $100,000 (the "Sign-On Bonus"). This bonus will be paid in two equal installments of $50,000 each. The first installment will be paid on the first ordinary payroll date that occurs more than 90 days after the date you commence employment with the Company, subject to your continued employment with the Company through the date of payment. The second and final installment will be paid in the first ordinary payroll date that occurs more than six (6) months after the date you commence employment with the Company, subject to your continued employment with the Company through the payment date.

In the unlikely event your employment is terminated for "cause" or if you voluntarily resign for any reason other than "good reason" (as those terms will be defined in the executive severance agreement described below) during your first year of employment, you will be required to repay the full amount of the Sign-On Bonus amount that has been paid to you as of your termination date unless a Change of Control (as defined in the Plan) occurs on or prior to such date.

Benefits

You will be eligible to participate in all of the employee benefits and benefit plans that the Company generally makes available to its similarly situated full-time regular employees, including group health plans, life, disability and AD&D insurances, a 401 (k) plan with Company match, tuition reimbursement, and various types of paid time off, subject to the terms and conditions of such benefits and plans. You will be eligible to accrue up to 20 days of vacation (in addition to Company holidays), which will accrue over the first year of your employment and may be used with the advance approval of the Chief Executive Officer. The Company reserves the right to terminate, modify or add to its benefits and benefit plans at any time.

Term and Termination

This Agreement shall commence on your first day of your employment with the Company and may be terminated at any time by you or by the Company with or without cause. You and the Company acknowledge and agree that your employment is and shall continue to be at-will and that nothing in this Agreement shall confer upon you any right with respect to continuation of employment by the Company, nor shall it interfere in any way with your right or the Company's right to terminate your employment at any time.

As you are aware, the Company is in the process of standardizing its executive termination pay arrangements. On or prior to your commencing employment, you and the Company will enter into an executive severance agreement (the "Severance Agreement") that governs the payments and benefits you may receive upon a termination of your employment with the Company. Except as otherwise provided in the Severance Agreement, the Company's obligations to you under this Agreement will cease upon your termination of employment for any reason. The Severance Agreement will include substantially the same terms as are offered to other similarly situated Company executives and is currently expected to provide, generally, for the following termination payments and benefits:

- upon your termination of employment for any reason, payment of (i) any earned but unpaid base salary, (ii) any accrued but unpaid paid time off and (iii) any other amounts or benefits, if any, under the Company's employee benefit plans to which you are entitled pursuant to the terms of such plans, payable in accordance with the terms of such plans or as otherwise required by applicable law (collectively, the "Accrued Rights");
- upon a termination of your employment by the Company without "cause" or by you for "good reason" that does not occur within 12 months following a Change of Control (as defined in the Plan), in addition to the Accrued Rights, and provided that you timely execute (and do not revoke) a release of claims in the Company's favor, payment of (i) 6 months of base salary and (ii) 6 months of healthcare insurance benefits continuation; and
- upon a termination of your employment by the Company without "cause" or by you for "good reason" that occurs within 12 months following a Change of Control (as defined in the Plan), in addition to the Accrued Rights, and provided that you timely execute (and do not revoke) a release of claims in the Company's favor, payment of (i) 12 months of base salary, (ii) an amount equal to your target annual bonus for the year of termination, (iii) 12 months of healthcare insurance benefits continuation and (iv) full accelerated vesting of Company equity awards, provided that the foregoing will be subject to reduction (to the minimum extent necessary) if doing so would result in you receiving a greater amount on

an after-tax basis due to application of Sections 280G and 4999 of the Internal Revenue Code.

Contingencies

This offer, and any employment pursuant to this offer, is conditioned upon the following:

- Your ability to provide satisfactory documentary proof of your identity and right to work in the United States of America prior to your commencement of employment by the Company.

- Your return of the enclosed copy of this letter and the Company's standard Confidentiality and Non-Competition Agreement. By signing and accepting this offer, you represent and warrant that you are not subject to any pre-existing contractual or other legal obligation with any person, company or business enterprise which may be an impediment to your employment with, or your providing services to, the Company as its employee.

Successors

This Agreement is personal to you and without the prior written consent of the Company you shall not assign your obligations under this Agreement, otherwise than by will or the laws of descent and distribution. This Agreement shall inure to the benefit of and be enforceable by your legal representatives.

This Agreement shall inure to the benefit of and be binding upon the Company and its successors and assigns, provided that the Company may not assign this Agreement other than as described below.

Applicable Law

This Agreement has been made under and shall be construed and enforced in accordance with the laws of the Commonwealth of Massachusetts, disregarding any choice of law rules that would result in the application of the laws of another jurisdiction.

Notice

Any notice, statement or demand required to be given under this Agreement shall be in writing and shall be sent by hand delivery against receipt, certified mail, return receipt requested or by a nationally recognized overnight carrier to the address of the parties first listed above or such other address as either party subsequently provides to the other in accordance with the provisions of this paragraph.

Waiver

The failure of either party to insist upon strict performance of any of the terms or provisions of this Agreement or to exercise any option, right or remedy contained in this Agreement, shall not be construed as a waiver or as a relinquishment for the future of such term, provision, option, right or remedy, but the same shall continue and remain in full force and effect. No waiver by either party of any term or provision of this Agreement shall be deemed to have been made unless expressed in writing and signed by such party.

Entire Agreement

If you accept this offer, this Agreement and the Confidentiality and Non-Competition Agreement shall constitute the complete agreement between you and the Company with respect to the terms and conditions of your employment. Any prior or contemporaneous representations (whether oral or written) not contained in this Agreement or the Confidentiality and Non-Competition Agreement or contrary to those contained in this Agreement or the Confidentiality and NonCompetition Agreement that may have been made to you are expressly cancelled and superseded by this offer. Except as otherwise specified herein, the terms and conditions of your employment may not be changed, except in another written agreement, signed by you and an authorized representative of the Company.

To indicate your acceptance of this offer, please return a countersigned copy of this offer to me within five (5) business days from the date hereof, after which time this offer will automatically expire.

I look forward to you accepting this offer and to a mutually rewarding relationship.

Best regards,

/s/ Linda A. Damon

Linda A. Damon
Head of Human Resources

I accept the above-described Agreement, on the terms set forth therein.

Dated: December 29, 2014

/s/ Brent Hatzis-Schoch

Brent Hatzis-Schoch

950 Winter Street
Waltham, MA 02451
Tel: (617) 551-4000
Fax: (617) 551-4701

February 20, 2015

Dinesh Purandare
18 Richmond Circle
Lexington, MA 02421

Dear Dinesh:

On behalf of Radius Health, Inc. (the "Company"), with offices at 950 Winter Street, Waltham, MA, 02451, I am pleased to offer you full-time employment as the Senior Vice President, Global Oncology/Commercial on the terms set forth below. This letter agreement is subject to, and will become effective only upon, your commencing employment with the Company on or about March 16, 2015 .

In the course of your employment with the Company, you will be subject to and required to comply with all Company policies, and applicable laws and regulations. The term "Agreement" as used below shall mean this letter agreement.

Duties; Work Location

As Senior Vice President, Global Oncology/Commercial, you will report to the Company's Chief Executive Officer and will have such duties and authority as are normally associated with such position or as may from time to time be assigned to you by the Board of Directors of Company or an authorized committee (the "Board"). The Company requires that, as a full-time employee, you devote your full business time, attention, skill, and efforts to the tasks and duties of your position with the Company. Your normal place of work will initially be the Company's Waltham, Massachusetts offices; however, your duties may require reasonable business travel as determined by the Chief Executive Officer.

Cash Compensation

You will earn a salary at the semi-monthly rate of $14,791.66, annualized at a rate of $355,000, or such greater amount as is subsequently determined by the Board (the "Annual Base Salary"). All compensation amounts payable pursuant to this Agreement shall be subject to all applicable tax and other withholdings.

In addition, subject to approval of the Board, you will be eligible for an annual discretionary bonus (your "Annual Bonus"), which Annual Bonus shall be targeted at 35% (your "Target") of your annualized base salary, subject to pro-ration during any year in which you are employed for less than the full year. The Board also has the discretion to award a bonus in excess of your Annual Target Bonus for exemplary performance. Any Annual Bonus will be based on both individual and corporate performance and the amount of any such Annual Bonus will be determined by the Company. Annual Bonuses shall be paid to you when generally paid to other senior executives of the Company, subject to your continued employment through the payment date.

You will also be entitled to reimbursement of all business expenses reasonably incurred in connection with the performance of your functions and duties under this Agreement, subject to the Company's expense reimbursement policy in effect from time to time.

Equity Incentive

Subject to approval by the Board after the commencement of your employment, the Company will grant to you an initial stock option (the "Initial Option") under the Radius Health, Inc. 2011 Equity Incentive Plan (the "Plan") for the purchase of 115,000 shares (subject to appropriate adjustment in the event of any stock split, stock dividend or other similar event) of common stock of the Company ("Common Stock") at a price per share equal to the Common Stock's closing price on the NASDAQ Global Market on the date of grant. The Initial Option shall be subject to all terms and other provisions set forth in the Plan and in a

separate option agreement and will vest as to 25% of the underlying shares on the first anniversary of the date you commence employment with the Company and in quarterly installments over the following three years.

Benefits

You will be eligible to participate in all of the employee benefits and benefit plans that the Company generally makes available to its similarly situated full-time regular employees, including group health plans, life, disability and AD&D insurances, a 401 (k) plan with Company match, tuition reimbursement, and various types of paid time off, subject to the terms and conditions of such benefits and plans. You will be eligible to accrue up to 20 days of vacation (in addition to Company holidays), which will accrue over the first year of your employment and may be used with the advance approval of the Chief Executive Officer. The Company reserves the right to terminate, modify or add to its benefits and benefit plans at any time.

Term and Termination

This Agreement shall commence on your first day of your employment with the Company and may be terminated at any time by you or by the Company with or without cause. You and the Company acknowledge and agree that your employment is and shall continue to be at-will and that nothing in this Agreement shall confer upon you any right with respect to continuation of employment by the Company, nor shall it interfere in any way with your right or the Company's right to terminate your employment at any time.

As you are aware, the Company is in the process of standardizing its executive termination pay arrangements. On or prior to your commencing employment, you and the Company will enter into an executive severance agreement (the "Severance Agreement") that governs the payments and benefits you may receive upon a termination of your employment with the Company. Except as otherwise provided in the Severance Agreement, the Company's obligations to you under this Agreement will cease upon your termination of employment for any reason. The Severance Agreement will include substantially the same terms as are offered to other similarly situated Company executives and is currently expected to provide, generally, for the following termination payments and benefits:

- upon your termination of employment for any reason, payment of (i) any earned but unpaid base salary, (ii) any accrued but unpaid paid time off and (iii) any other amounts or benefits, if any, under the Company's employee benefit plans to which you are entitled pursuant to the terms of such plans, payable in accordance with the terms of such plans or as otherwise required by applicable law (collectively, the "Accrued Rights");
- upon a termination of your employment by the Company without "cause" or by you for "good reason" that does not occur within 12 months following a Change of Control (as defined in the Plan), in addition to the Accrued Rights, and provided that you timely execute (and do not revoke) a release of claims in the Company's favor, payment of (i) 6 months of base salary and (ii) 6 months of healthcare insurance benefits continuation; and
- upon a termination of your employment by the Company without "cause" or by you for "good reason" that occurs within 12 months following a Change of Control (as defined in the Plan), in addition to the Accrued Rights, and provided that you timely execute (and do not revoke) a release of claims in the Company's favor, payment of (i) 12 months of base salary, (ii) an amount equal to your target annual bonus for the year of termination, (iii) 12 months of healthcare insurance benefits continuation and (iv) full accelerated vesting of Company equity awards, provided that the foregoing will be subject to reduction (to the minimum extent necessary) if doing so would result in you receiving a greater amount on an after-tax basis due to application of Sections 280G and 4999 of the Internal Revenue Code.

Contingencies

This offer, and any employment pursuant to this offer, is conditioned upon the following:

- Your ability to provide satisfactory documentary proof of your identity and right to work in the United States of America prior to your commencement of employment by the Company.
- Your return of the enclosed copy of this letter and the Company's standard Confidentiality and Non-Competition Agreement. By signing and accepting this offer, you represent and warrant that you are not subject to any pre-existing contractual or other legal obligation with any person, company or business enterprise which may be an impediment to your employment with, or your providing services to, the Company as its employee.

Successors

This Agreement is personal to you and without the prior written consent of the Company you shall not assign your obligations under this Agreement, otherwise than by will or the laws of descent and distribution. This Agreement shall inure to the benefit

of and be enforceable by your legal representatives.

This Agreement shall inure to the benefit of and be binding upon the Company and its successors and assigns, provided that the Company may not assign this Agreement other than as described below.

Applicable Law

This Agreement has been made under and shall be construed and enforced in accordance with the laws of the Commonwealth of Massachusetts, disregarding any choice of law rules that would result in the application of the laws of another jurisdiction.

Notice

Any notice, statement or demand required to be given under this Agreement shall be in writing and shall be sent by hand delivery against receipt, certified mail, return receipt requested or by a nationally recognized overnight carrier to the address of the parties first listed above or such other address as either party subsequently provides to the other in accordance with the provisions of this paragraph.

Waiver

The failure of either party to insist upon strict performance of any of the terms or provisions of this Agreement or to exercise any option, right or remedy contained in this Agreement, shall not be construed as a waiver or as a relinquishment for the future of such term, provision, option, right or remedy, but the same shall continue and remain in full force and effect. No waiver by either party of any term or provision of this Agreement shall be deemed to have been made unless expressed in writing and signed by such party.

Entire Agreement

If you accept this offer, this Agreement and the Confidentiality and Non-Competition Agreement shall constitute the complete agreement between you and the Company with respect to the terms and conditions of your employment. Any prior or contemporaneous representations (whether oral or written) not contained in this Agreement or the Confidentiality and Non-Competition Agreement or contrary to those contained in this Agreement or the Confidentiality and Non-Competition Agreement that may have been made to you are expressly cancelled and superseded by this offer. Except as otherwise specified herein, the terms and conditions of your employment may not be changed, except in another written agreement, signed by you and an authorized representative of the Company.

To indicate your acceptance of this offer, please return a countersigned copy of this offer to me within five (5) business days from the date hereof, after which time this offer will automatically expire.
I look forward to you accepting this offer and to a mutually rewarding relationship.

Best Regards,

/s/ Linda A. Damon

Linda A. Damon
Head of Human Resources

I accept the above-described Agreement, on the terms set forth therein.

Dated: December 29, 2014 /s/ Dinesh Purandare

Dinesh Purandare

Exhibit 10.11

950 Winter Street
Waltham, MA 02451
Tel: (617) 551-4000
Fax: (617) 551-4701

July 03, 2015

Lorraine A. Fitzpatrick, M.D.
694 Trowill Lane
Wayne, PA 19087

Dear Lorie:

On behalf of Radius Health, Inc. (the "Company"), with offices at 950 Winter Street, Waltham, MA, 02451, I am pleased to offer you full-time employment as the Chief Medical Officer on the terms set forth below. This letter agreement is subject to, and will become effective only upon, your commencing employment with the Company on or about July 27, 2015.

In the course of your employment with the Company, you will be subject to and required to comply with all Company policies, and applicable laws and regulations. The term "Agreement" as used below shall mean this letter agreement.

Duties; Work Location

As Chief Medical Officer, you will report to the Company's Chief Executive Officer and will have such duties and authority as are normally associated with such position or as may from time to time be assigned to you by the Board of Directors of Company or an authorized committee (the "Board"). The Company requires that, as a full-time employee, you devote your full business time, attention, skill, and efforts to the tasks and duties of your position with the Company. As a Pennsylvania office based employee, you may work from our offices in Pennsylvania, Waltham, MA, or Parsippany, NJ as dictated by the needs of the business. If you elect to relocate to Waltham, MA or Parsippany, NJ Radius will make relocation assistance available to you. Your duties may require reasonable business travel as determined by the Chief Executive Officer.

Cash Compensation

You will earn a salary at the semi-monthly rate of $14,583.33 annualized at a rate of $350,000, or such greater amount as is subsequently determined by the Board (the "Annual Base Salary"). All compensation amounts payable pursuant to this Agreement shall be subject to all applicable tax and other withholdings.

In addition, subject to approval of the Board, you will be eligible for an annual discretionary bonus (your "Annual Bonus"), which Annual Bonus shall be targeted at 35% (your "Target") of your annualized base salary, subject to pro-ration during any year in which you are employed for less than the full year. The Board also has the discretion to award a bonus in excess of your Annual Target Bonus for exemplary performance. Any Annual Bonus will be based on both individual and corporate performance and the amount of any such Annual Bonus will be determined by the Company. Annual Bonuses shall be paid to you when generally paid to other senior executives of the Company, subject to your continued employment through the payment date.

You will also be entitled to reimbursement of all business expenses reasonably incurred in connection with the performance of your functions and duties under this Agreement, subject to the
Company's expense reimbursement policy in effect from time to time.

Equity Incentive

Subject to approval by the Board after the commencement of your employment, the Company will grant to you an initial stock option (the "Initial Option") under the Radius Health, Inc. 2011 Equity Incentive Plan (the "Plan") for the purchase of 150,000 shares (subject to appropriate adjustment in the event of any stock split, stock dividend or other similar event) of common stock of the Company ("Common Stock") at a price per share equal to the Common Stock's closing price on the NASDAQ Global Market on the date of grant. The Initial Option shall be subject to all terms and other provisions set forth in the Plan

and in a separate option agreement and will vest as to 25% of the underlying shares on the first anniversary of the date you commence employment with the Company and in quarterly installments over the following three years.

Sign-On Bonus

You will be eligible to receive a Sign-On Bonus in the gross amount of $50,000 (the "Sign-On Bonus"). This bonus will be paid in two equal installments of $25,000 each. The first installment will be paid on the first ordinary payroll date that occurs more than 90 days after the date you commence employment with the Company, subject to your continued employment with the Company through the date of payment. The second and final installment will be paid in the first ordinary payroll date that occurs more than six (6) months after the date you commence employment with the Company, subject to your continued employment with the Company through the payment date.

In the unlikely event your employment is terminated for "cause" or if you voluntarily resign for any reason other than "good reason" (as those terms will be defined in the executive severance agreement described below) during your first year of employment, you will be required to repay the full amount of the Sign-On Bonus amount that has been paid to you as of your termination date unless a Change of Control (as defined in the Plan) occurs on or prior to such date.

Benefits

You will be eligible to participate in all of the employee benefits and benefit plans that the Company generally makes available to its similarly situated full-time regular employees, including group health plans, life, disability and AD&D insurances, a 401 (k) plan with Company match, tuition reimbursement, and various types of paid time off, subject to the terms and conditions of such benefits and plans. You will be eligible to accrue up to 20 days of vacation (in addition to Company holidays), which will accrue over the first year· of your employment and may be used with the advance approval of the Chief Executive Officer. The Company reserves the right to terminate, modify or add to its benefits and benefit plans at any time.

Term and Termination

This Agreement shall commence on your first day of your employment with the Company and may be terminated at any time by you or by the Company with or without cause. You and the Company acknowledge and agree that your employment is and shall continue to be at-will and that nothing in this Agreement shalt confer upon you any right with respect to continuation of employment by the Company, nor shall it interfere in any way with your right or the Company's right to terminate your employment at any time.

The Company is in the process of standardizing its executive termination pay arrangements. On or prior to your commencing employment, you and the Company will enter into an executive severance agreement (the "Severance Agreement") (attached) that governs the payments and benefits you may receive upon a termination of your employment with the Company. Except as otherwise provided in the Severance Agreement, the Company's obligations to you under this Agreement will cease upon your termination of employment for any reason. The Severance Agreement will include substantially the same terms as are offered to other similarly situated Company executives.

Contingencies

This offer, and any employment pursuant to this offer, is conditioned upon the following:

- Your ability to provide satisfactory documentary proof of your identity and right to work in the United States of America prior to your commencement of employment by the Company.

- Your return of the enclosed copy of this letter and the Company's standard Confidentiality and Non-Competition Agreement. By signing and accepting this offer, you represent and warrant that you are not subject to any pre-existing contractual or other legal obligation with any person, company or business enterprise which may be an impediment to your employment with, or your providing services to, the Company as its employee.

Successors

This Agreement is personal to you and without the prior written consent of the Company you shall not assign your obligations under this Agreement, otherwise than by will or the laws of descent and distribution. This Agreement shall inure to the benefit of and be enforceable by your legal representatives.

This Agreement shall inure to the benefit of and be binding upon the Company and its successors and assigns, provided that the Company may not assign this Agreement other than as described below.

Applicable Law

This Agreement has been made under and shall be construed and enforced in accordance with the laws of the Commonwealth of Massachusetts, disregarding any choice of law rules that would result in the application of the laws of another jurisdiction.

Notice

Any notice, statement or demand required to be given under this Agreement shall be in writing and shall be sent by hand delivery against receipt, certified mail, return receipt requested or by a nationally recognized overnight carrier to the address of the parties first listed above or such other address as either party subsequently provides to the other in accordance with the provisions of this paragraph.

Waiver

The failure of either party to insist upon strict performance of any of the terms or provisions of this Agreement or to exercise any option, right or remedy contained in this Agreement, shall not be construed as a waiver or as a relinquishment for the future of such term, provision, option, right or remedy, but the same shall continue and remain in full force and effect. No waiver by either party of any term or provision of this Agreement shall be deemed to have been made unless expressed in writing and signed by such party.

Entire Agreement

If you accept this offer, this Agreement and the confidentiality and Non-Competition Agreement shall constitute the complete agreement between you and the Company with respect to the terms and conditions of your employment. Any prior or contemporaneous representations (whether oral or written) not contained in this Agreement or the Confidentiality and Non-Competition Agreement or contrary to those contained in this Agreement or the Confidentiality and Non-Competition Agreement that may have been made to you are expressly cancelled and superseded by this offer. Except as otherwise specified herein, the terms and conditions of your employment may not be changed, except in another written agreement, signed by you and an authorized representative of the Company.

To indicate your acceptance of this offer, please return a countersigned copy of this offer to me within five (5) business days from the date hereof, after which time this offer will automatically expire.

I look forward to you accepting this offer and to a mutually rewarding relationship.

Best regards,

/s/ Linda A. Damon

Linda A. Damon
Head of Human Resources

I accept the above-described Agreement, on the terms set forth therein.

Dated: 7 July 2015

/s/ Lorraine A. Fitzpatrick, M.D.

Lorraine A. Fitzpatrick, M.D.

950 Winter Street
Waltham, MA 02451
Tel: (617) 551-4000
Fax: (617) 551-4701

August 31, 2015

David Snow
945 Sconnelltown Road
West Chester, PA 19382

Dear David:

On behalf of Radius Health, Inc. (the "Company"), with offices at 950 Winter Street, Waltham, MA, 02451 , I am pleased to offer you full-time employment as the Chief Commercial Officer of the Company on the terms set forth below. This letter agreement is subject to, and will become effective only upon, your commencing employment with the Company on or about September 9 , 2015.

In the course of your employment with the Company, you will be subject to and required to comply with all Company policies, and applicable laws and regulations . The term "Agreement" as used below shall mean this letter agreement.

Duties; Work Location

As Chief Commercial Officer , you will report to the Company's Chief Executive Officer and will have such duties and authority as are normally associated with such position or as may from time to time be assigned to you by the Company's Chief Executive Officer or the Board of Directors of Company or an authorized committee (the "Board") . The Company requires that, as a full-time employee, you devote your full business time, attention, skill, and efforts to the tasks and duties of your position with the Company. Your normal pl a ce of work will initially be the Company's offices in the Philadelphia, Pennsylvania area; however, your duties may require reasonable business travel as determined by the Chief Executive Officer. If you elect to relocate to the Company's Waltham, Massachusetts office after commencement of employment, the Company will make relocation assistance available to you in accordance with its policies .

Cash Compensation

You will earn a salary at the semi-monthly rate of $16,041.67, annualized at a rate of $385,000 , or such greater amount as is subsequently determined by the Board (the " Annual Base Salary"). All compensation amounts payable pursuant to this Agreement shall be subject to all applicable tax and other withholdings.

In addition, subject to approval of the Board, you will be eligible for an annual discretionary bonus (your "Annual Bonus"), which Annual Bonus shall be targeted at 35% (your "Target") of your Annual Base Salary, subject to pro-ration during any year in which you are employed for less than the full year. Any Annual Bonus will be based on both individual and corporate performance and the amount of any such Annual Bonus will be determined by the Company . Annual Bonuses shall be paid to you when generally paid to other senior executives of the Company, subject to your continued employment through the payment date .

You will also be entitled to reimbursement of all business expenses reasonably incurred in connection with the performance of your functions and duties under this Agreement, subject to the Company's expense reimbursement policy in effect from time to time.

Equity Incentives

On the date of the commencement of your employment with the Company (the "Employment Date"), the Company will grant to you a stock option (the "Option") under the Radius Health, Inc. 2011 Equity Incentive Plan (the "Plan") for the purchase of 100,000 shares (subject to appropriate adjustment in the event of any stock split, stock dividend or other similar event) of common stock of the Company ("Common Stock") at a price per share equal

to the closing price for the Common Stock on the

NASDAQ Global Market (the "Stock Price") on the Employment Date. The Option shall be subject to all terms and other provisions set forth in the Plan and in a separate option agreement and will vest as to 25% of the underlying shares on the first anniversary of the Employment Date and in equal monthly installments over the following thirty-six (36) months.

On the Employment Date, the Company will issue you 25,000 Performance Stock Units ("PSUs") under the Plan. Each PSU represents a contingent right to receive one share of the Company's common stock , subject to the terms of the Plan and the PSU award agreement. At any time prior to the third anniversary of the Employment Date, the shares subject to each PSU award will be earned as follows: (1) 5,000 shares will be earned if and when the average closing price of the Company's common stock measured over 45 consecutive trading days on the NASDAQ Global Market (the "Stock Price") exceeds $75 per share, (2) 10 , 000 shares will be earned if and when the Stock Price exceeds $100 per share and (3) 10,000 shares will be earned if and when the Stock Price exceeds $120 per share (subject in each case to appropriate adjustment in the event of any stock split, stock dividend or other similar event). Any shares earned under the PSUs will be eligible to vest on the first anniversary of the date the shares were earned (even if such first anniversary date is after the third anniversary of the Employment Date), subject to your continued employment with the Company through the applicable vesting date. The PSUs will in all cases be subject to the terms and other provisions set forth in the Plan and in a separate PSU award agreement.

Severance

On or prior to your commencing employment, you and the Company will enter into an executive severance agreement in substantially the form enclosed with this letter (the "Severance Agreement"), which agreement will govern the payments and benefits you may receive upon a termination of your employment with the Company. Except as otherwise provided in the Severance Agreement, the Company's obligations to you under this Agreement will cease upon your termination of employment for any reason.

Benefits

You will be eligible to participate in all of the employee benefits and benefit plans that the Company generally makes available to its similarly situated full-time regular employees, including group health plans, life, disability and AD&D insurances, a 401(k) plan with Company match, tuition reimbursement, and various types of paid time off, subject to the terms and conditions of such benefits and plans. You will be eligible to accrue up to 20 days of vacation (in addition to Company holidays), which will accrue over the first year of your employment and may be used with the advance approval of the Chief Executive Officer. The Company reserves the right to terminate, modify or add to its benefits and benefit plans at any time.

Term and Termination

This Agreement shall commence on your first day of your employment with the Company and may be terminated at any time by you or by the Company with or without cause . You and the Company acknowledge and agree that your employment is and shall continue to be at - will and that nothing in this Agreement shall confer upon you any right with respect to continuation of employment by the Company, nor shall it interfere in any way with your right or the Company's right to terminate your employment at any time .

Contingencies

This offer, and any employment pursuant to this offer, is conditioned upon the following :

- Your ability to provide satisfactory documentary proof of your identity and right to work in the United States of America prior to your commencement of employment by the Company.

- Your return of the enclosed copy of this letter and the Company ' s standard Confidentiality and Non - Competition Agreement. By signing and accepting this offer, you represent and warrant that you are not subject to any pre-existing contractual or other legal obligation with any person, company or business enterprise which may be an impediment to your employment with, or your providing services to, the Company as its employee.

Successors

This Agreement is personal to you and without the prior written consent of the Company you shall not assign your rights or obligations under this Agreement , otherwise than by will or the laws of descent and distribution . This Agreement shall inure to the benefit of and be enforceable by your legal representatives.

This Agreement shall inure to the benefit of and be binding upon the Company and its successors and assigns .

Applicable Law

This Agreement has been made under and shall be construed and enforced in accordance with the laws of the Commonwealth of Massachusetts, disregarding any choice of law rules that would result in the application of the laws of another jurisdiction.

Notice

Any notice, statement or demand required to be given under this Agreement shall be in writing and shall be sent by hand delivery against receipt, certified mail , return receipt requested or by a nationally recognized overnight carrier to the address of the parties first listed above or such other address as either party subsequently provides to the other in accordance with the provisions of this paragraph .

Waiver

The failure of either party to insist upon strict performance of any of the terms or provisions of this Agreement or to exercise any option, right or remedy contained in this Agreement, shall not be construed as a waiver or as a relinquishment for the future of such term, provision, option, right or remedy, but the same shall continue and remain in full force and effect. No waiver by either party of any term or provision of this Agreement shall be deemed to have been made unless expressed in writing and signed by such party .

Entire Agreement

If you accept this offer , this Agreement, the Confidentiality and Non-Competition Agreement and the Severance Agreement shall constitute the complete agreement between you and the Company with respect to the terms and conditions of your employment. Any prior or contemporaneous representations (whether oral or written) not contained in this Agreement , the Confidentiality and Non-Competition Agreement or the Severance Agreement or contrary to those contained in this Agreement, the Confidentiality and Non-Competition Agreement or the Severance Agreement that may have been made to you are expressly cancelled and superseded by this offer. Except as otherwise specified herein, the terms and conditions of your employment may not be changed, except in another written agreement, signed by you and an authorized representative of the Company .

To indicate your acceptance of this offer, please return a countersigned copy of this offer to me within five (5) business days from the date hereof , after which time this offer will automatically expire.

I look forward to you accepting this offer and to a mutually rewarding relationship.

Best regards,

/s/ Robert E. Ward

Robert E. Ward
President and Chief Executive Officer

I accept the above-described Agreement, on the terms set forth therein.

Dated: September 4, 2015 /s/ David Snow

David Snow

Exhibit 10.13

EXECUTIVE SEVERANCE AGREEMENT

This Executive Severance Agreement (" ***Agreement*** ") is made effective as of [DATE] (" ***Effective Date*** "), by and between Radius Health, Inc. (the " ***Company*** ") and [NAME] (" ***Executive*** ").

WHEREAS, Executive is a key employee of the Company and the Company and Executive desire to set forth herein the terms and conditions of Executive's compensation in the event of a termination of Executive's employment under certain circumstances.

NOW, THEREFORE, the parties agree as follows:

1. Definitions . For purposes of this Agreement, the following terms shall have the following meanings:

(a) " ***Affiliate*** " means with respect to any person or entity, any other person or entity that, directly or indirectly, through one or more intermediaries, controls, or is controlled by, or is under common control with, such person or entity. For purposes of this definition, "control", when used with respect to any person or entity, means the power to direct the management and policies of such person or entity, directly or indirectly, whether through ownership of voting securities, by contract or otherwise; and the terms "controlling" and "controlled" have meanings correlative to the foregoing.

(b) " ***Base Salary*** " means Executive's base salary at the rate in effect on the date of Executive's Qualifying Termination (disregarding any decrease in such base salary that constitutes a Good Reason event).

(c) " ***Board*** " shall mean the Board of Directors of the Company.

(d) " ***Cause*** " shall mean any of the following: (i) Executive's commission of an act of fraud, embezzlement or theft against the Company or its subsidiaries; (ii) Executive's conviction of, or plea of no contest to, a felony or crime involving moral turpitude; (iii) Executive's willful non-performance of material duties as an employee of the Company, which to the extent such failure can be fully cured, remains uncured for 30 days following Executive's receipt of written notice thereof; (iv) Executive's material breach of any material agreement with the Company or any of its subsidiaries, including the Confidentiality and Non-Compete Agreement; (v) Executive's gross negligence, willful misconduct or any other act of willful disregard for the Company's or any of its subsidiaries' best interests; or (iv) Executive's unlawful use (including being under the influence) or possession of illegal drugs on the Company's (or any of its affiliate's) premises.

(e) " ***Change of Control*** " shall mean a "Change of Control" as defined in the Company's 2011 Equity Incentive Plan, except that clause (d) of such definition shall not constitute a Change of Control under this Agreement.

(f) " ***Code*** " shall mean the Internal Revenue Code of 1986, as amended, and the Treasury Regulations and other interpretive guidance thereunder.

(g) " ***Confidentiality and Non-Compete Agreement*** " shall mean the Confidentiality and Non-Compete Agreement between the Company and Executive, dated [DATE].

(h) " ***Good Reason*** " shall mean the occurrence of any of the following events or conditions without Executive's written consent: (i) a material diminution in Executive's base salary or target annual bonus level; (ii) a material diminution in Executive's authority, duties or responsibilities, other than as a result of a Change of Control immediately after which Executive holds a position with the Company or its successor (or any other entity that owns substantially all of the Company's business after such sale) that is substantially equivalent with respect to the Company's business as Executive held immediately prior to such Change of Control; (iii) a change in the geographic location of Executive's principal place of employment to any location that is more than 75 miles from the location immediately prior to such change; or (iv) the failure of the Company to obtain an agreement from any successor to all or substantially all of the business or assets of the Company to assume this Agreement as contemplated in Section 6(a) of this Agreement; provided that Executive must provide written notice to the Company of the occurrence of any of the foregoing events or conditions within 60 days of the occurrence of such event and such event or condition must remain uncured for 30 days following the Company's receipt of such written notice. Any voluntary termination for "Good Reason" following such 30 day cure period must occur no later than the date that is 30 days following the expiration of the Company's cure period.

(i) " ***Qualifying Termination*** " means (i) a termination by Executive of Executive's employment with the Company for Good Reason or (ii) a termination by the Company of Executive's employment with the Company without Cause.

(j) " ***Separation from Service*** " means a "separation from service" with the Company as such term is defined in Treasury Regulation Section 1.409A-1(h) and any successor provision thereto.

(k) " ***Target Bonus Amount*** " means Executive's target annual bonus amount in effect at the time of Executive's Qualifying Termination (disregarding any decrease in such target annual bonus amount that constitutes a Good Reason event).

2. Severance .

(a) Severance Upon Qualifying Termination . If Executive has a Qualifying Termination that does not occur on the date of or within 12 months following a Change of Control, then subject to (x) the requirements of this Section 2, (y) the Executive's continued compliance with the Confidentiality and Non-Compete Agreement and (z) the terms of Section 6, Executive shall be entitled to receive the following payments and benefits:

(i) The Company shall pay to Executive (A) his or her fully earned but unpaid base salary through the date of Executive's Qualifying Termination, (B) any accrued but unpaid paid time off and (C) any other amounts or benefits, if any, under the Company's employee benefit plans, programs or arrangements to which Executive may be entitled pursuant to the terms of such plans, programs or arrangements or applicable law, payable in accordance with the terms of such plans, programs or arrangements or as otherwise required by applicable law (collectively, the " ***Accrued Rights*** ");

(ii) Executive shall be entitled to receive continued payment of the Base Salary for a period of 6 months following the termination date (the " ***Salary Severance Period*** ") in accordance with the Company's ordinary payroll practices;

(iii) The amount of any earned but unpaid annual bonus for the year immediately prior to the year in which Executive's Qualifying Termination occurs, as determined by the Board (or an authorized committee) in its good faith discretion, payable in a lump sum at the same time annual bonuses are paid to other Company executives generally but in no event later than December 31 of the year in which Executive's Qualifying Termination occurs; and

(iv) If Executive timely elects continued coverage under COBRA for Executive and Executive's covered dependents under the Company's group health plans following such Qualifying Termination, then the Company shall pay the COBRA premiums necessary to continue Executive's and his covered dependents' health insurance coverage in effect on the termination date until the earliest of (x) 6 months following the effective date of such Qualifying Termination (the " ***COBRA Severance Period*** "), (y) the date when Executive becomes eligible for substantially equivalent health insurance coverage in connection with new employment or self-employment (and Executive agrees to promptly notify the Company of such eligibility) and (z) the date Executive ceases to be eligible for COBRA continuation coverage for any reason, including plan termination (such period from the Qualifying Termination date through the earlier of (x)-(z), the " ***COBRA Payment Period*** "). Notwithstanding the foregoing, if at any time the Company determines that its payment of COBRA premiums on Executive's behalf would result in a violation of applicable law (including but not limited to the 2010 Patient Protection and Affordable Care Act, as amended by the 2010 Health Care and Education Reconciliation Act), then in lieu of paying COBRA premiums pursuant to this Section 2(a)(iv), the Company shall pay Executive on the last day of each remaining month of the COBRA Payment Period, a fully taxable cash payment equal

to the COBRA premium for such month, subject to applicable tax withholding (such amount, the " ***Special Severance Payment*** "), such Special Severance Payment to be made without regard to Executive's payment of COBRA premiums.

(b) Severance Upon Qualifying Termination Occurring Within 12 Months Following a Change of Control . If Executive has a Qualifying Termination that occurs on the date of or within 12 months following a Change of Control, then subject to (x) the requirements of this Section 2, (y) the Executive's continued compliance with the Confidentiality and Non-Compete Agreement and (z) the terms of Section 6, Executive shall be entitled to receive the payments and benefits described in Section 2(a) above; provided that : (i) the Salary Severance Period shall be increased to 12 months; (ii) the COBRA Severance Period shall be increased to 12 months; (iii) the Company shall pay Executive an additional amount equal to the Target Bonus Amount, payable in a lump sum on the Company's first ordinary payroll date occurring after the effective date of Executive's Qualifying Termination; and (iv) all unvested equity or equity-based awards under any Company equity compensation plans that vest solely based upon the passage of time shall immediately become 100% vested (for the avoidance of doubt, with any such awards that vest in whole or in part based upon the attainment of performance vesting conditions being governed by the terms of the applicable award agreement).

(c) Other Terminations . Upon Executive's termination of employment for any reason other than as set forth in Section 2(a) and Section 2(b), the Company shall pay to Executive the Accrued Rights and shall have no other or further obligations to Executive under this Agreement. The foregoing shall be in addition to, and not in lieu of, any and all other rights and remedies which may be available to the Company under the circumstances, whether at law or in equity.

(d) Release . As a condition to Executive's receipt of any amounts set forth in Section 2(a) or Section 2(b) other than the Accrued Rights, Executive shall execute and not revoke a general release of all claims in favor of the Company (the " ***Release*** ") in the form substantially similar to the form attached hereto as Exhibit A (and any statutorily prescribed revocation period applicable to such Release shall have expired) within the 30 day period following the date of Executive's Qualifying Termination, or in the event that such Qualifying Termination is "in connection with an exit incentive or other employment termination program (as such phrase is defined in the Age Discrimination in Employment Act of 1967, as amended), the date that is 60 days following the date of Executive's Qualifying Termination.

(e) Exclusive Remedy; Other Arrangements . Except as otherwise expressly required by law (e.g., COBRA) or as specifically provided herein, all of Executive's rights to salary, severance, benefits, bonuses and other amounts (if any) accruing after the termination of Executive's employment for any reason shall cease upon such termination. In addition, the severance payments provided for in Section 2(a) and Section 2(b) above are intended to be paid in lieu of any severance

payments Executive may otherwise be entitled to receive under any other plan, program, policy, contract or agreement with the Company or any of its affiliates, including for the avoidance of doubt, any employment agreement or offer letter (collectively, " ***Other Arrangements*** "). Therefore, in the event Executive becomes entitled to receive the severance payments and benefits provided under Section 2(a) or Section 2(b), Executive shall receive the amounts provided under that Section of this Agreement and shall not be entitled to receive any severance payments or severance benefits pursuant to any Other Arrangements. In addition, to the extent any Other Arrangement that was entered into prior to the date of this Agreement provides for Executive to receive any payments or benefits upon a termination or a resignation of employment for any reason (such agreement a " ***Prior Agreement*** "), the Executive hereby agrees that such termination pay and benefit provisions of such Prior Agreement shall be and hereby are superseded by this Agreement and from and after the date of this Agreement, such termination pay and benefit provisions of the Prior Agreement shall be and are null and void and of no further force or effect. For the avoidance of doubt, except as may otherwise be agreed in writing between Executive and the Company or one of its affiliates after the date of this Agreement, it is intended that the other terms and conditions of any Prior Agreement that do not provide for termination pay or benefits, including any non-competition, non-solicitation, non-disparagement, confidentiality, assignment of inventions covenants and other similar covenants contained therein, shall remain in effect in accordance with their terms for the periods set forth in the Prior Agreement.

(f) Parachute Payments .

(i) Notwithstanding anything in this Agreement or any other agreement between Executive and the Company (or any of its subsidiaries or affiliates) to the contrary, in the event that the provisions of Section 280G of the Code relating to "parachute payments" (as defined in the Code) shall be applicable to any payment or benefit received or to be received by Executive from the Company or its affiliates in connection with a change in the ownership or effective control of the Company within the meaning of Section 280G of the Code (a " ***Change of Control Transaction*** ") (collectively, " ***Payments*** "), then any such Payments shall be equal to the Reduced Amount; where the " ***Reduced Amount*** " is (1) the largest portion of the Payments that will result in no portion of such Payments being subject to the excise tax imposed by Section 4999 of the Code, or (2) the entire amount of the Payments otherwise scheduled to be paid (without reduction), whichever of the forgoing amounts after taking into account all applicable federal, state and local employment taxes, income taxes and the excise tax of Section 4999 of the Code (all computed at the highest applicable merged rate, net of the maximum reduction in federal income taxes which could be obtained from a deduction of all state and local taxes), results in Executive's receipt, on an after-tax basis, of the greatest amount of Payments. If subsection (1) above applies and a reduced amount of the Payments is payable, then any reduction of Payments required by such provision shall occur in the following order: (i) first, a reduction of any Payments that are exempt from Section 409A in a manner the Company reasonably determines will provide Executive with the

greatest post-reduction economic benefit and (ii) second, a reduction of any Payments that are subject to Section 409A on a pro-rata basis or such other manner that complies with Section 409A, as reasonably determined by the Company.

(ii) In connection with a Change of Control Transaction, the Company shall engage a certified public accounting firm (" Accountants ") to perform the calculations to determine if the Payments to Executive would reasonably be subject to Section 280G of the Code, and the Company shall use commercially reasonable efforts to (1) cause the Accountants to finalize such calculations and (2) deliver such calculations and supporting documentation to Executive, by no later than five (5) days before the closing of the Change of Control Transaction. In the event it is later determined that a greater reduction in the Payments should have been made to implement the objective and intent of this Section 2(f), the excess amount shall be returned immediately by Executive to the Company, plus interest at a rate equal to 120% of the semi-annual applicable federal rate as in effect at the time of the Change of Control.

(g) Withholding . All compensation and benefits to Executive hereunder shall be reduced by all federal, state, local and other withholdings and similar taxes and payments required by applicable law.

3. Condition to Severance Obligations . The Company shall be entitled to cease all severance payments and benefits to Executive in the event of Executive's breach any of the provisions of the Confidentiality and Non-Compete Agreement or of any other non-competition, non-solicitation, non-disparagement, confidentiality, or assignment of inventions covenants contained in any other agreement between Executive and the Company, which other covenants are hereby incorporated by reference into this Agreement.

4. Agreement to Arbitrate . Any controversy, claim or dispute arising out of or relating to this Agreement, shall be settled solely and exclusively by binding arbitration in Boston, Massachusetts. Such arbitration shall be conducted in accordance with the then prevailing JAMS Streamlined Arbitration Rules & Procedures, with the following exceptions if in conflict: (a) one arbitrator shall be chosen by JAMS; (b) each party to the arbitration will pay its pro rata share of the expenses and fees of the arbitrator, unless otherwise required to enforce this Section 4; and (c) arbitration may proceed in the absence of any party if written notice (pursuant to the JAMS' rules and regulations) of the proceedings has been given to such party. Each party shall bear its own attorneys' fees and expenses. The parties agree to abide by all decisions and awards rendered in such proceedings. Such decisions and awards rendered by the arbitrator shall be final and conclusive. All such controversies, claims or disputes shall be settled in this manner in lieu of any action at law or equity; provided, however, that nothing in this subsection shall be construed as precluding the bringing an action in a court of competent jurisdiction to enforce the Confidentiality and Non-Compete Agreement or any other non-competition, non-solicitation, non-disparagement,

confidentiality, assignment of invention or other intellectual property related covenants contained in any other agreement between Executive and the Company.

5. At-Will Employment Relationship. Executive's employment with the Company is at-will and not for any specified period and may be terminated at any time, with or without Cause or advance notice, by either Executive or the Company. Any change to the at-will employment relationship must be by specific, written agreement signed by Executive and an authorized representative of the Company. Nothing in this Agreement is intended to or should be construed to contradict, modify or alter this at-will relationship.

6. General Provisions.

(a) Successors and Assigns. The rights of the Company under this Agreement may, without the consent of Executive, be assigned by the Company to any person, firm, corporation or other business entity which at any time, whether by purchase, merger or otherwise, directly or indirectly, acquires all or substantially all of the assets or business of the Company or to any of its Affiliates. The Company will require any successor (whether direct or indirect, by purchase, merger or otherwise) to all or substantially all of the business or assets of the Company to assume this Agreement. Executive shall not be entitled to assign any of Executive's rights or obligations under this Agreement. This Agreement shall inure to the benefit of and be enforceable by Executive's personal or legal representatives, executors, administrators, successors, heirs, distributees, devisees and legatees.

(b) Severability. In the event any provision of this Agreement is found to be unenforceable by an arbitrator or court of competent jurisdiction, such provision shall be deemed modified to the extent necessary to allow enforceability of the provision as so limited, it being intended that the parties shall receive the benefit contemplated herein to the fullest extent permitted by law. If a deemed modification is not satisfactory in the judgment of such arbitrator or court, the unenforceable provision shall be deemed deleted, and the validity and enforceability of the remaining provisions shall not be affected thereby.

(c) Interpretation; Construction. The headings set forth in this Agreement are for convenience only and shall not be used in interpreting this Agreement. This Agreement has been drafted by legal counsel representing the Company, but Executive has participated in the negotiation of its terms. Furthermore, Executive acknowledges that Executive has had an opportunity to review and revise the Agreement and, therefore, the normal rule of construction to the effect that any ambiguities are to be resolved against the drafting party shall not be employed in the interpretation of this Agreement. Either party's failure to enforce any provision of this Agreement shall not in any way be construed as a waiver of any such provision, or prevent that party thereafter from enforcing each and every other provision of this Agreement.

(d) Governing Law and Venue . This Agreement will be governed by and construed in accordance with the laws of the United States and the Commonwealth of Massachusetts applicable to contracts made and to be performed wholly within such Commonwealth, and without regard to the conflicts of laws principles that would result in the applicable of the laws of another jurisdiction. Any suit brought hereon shall be brought in the state or federal courts sitting in Boston, Massachusetts, the parties hereby waiving any claim or defense that such forum is not convenient or proper. Each party hereby agrees that any such court shall have in personam jurisdiction over it and consents to service of process in any manner authorized by Massachusetts law.

(e) Notices . Any notice required or permitted by this Agreement shall be in writing and shall be delivered as follows with notice deemed given as indicated: (i) by personal delivery when delivered personally; (ii) by overnight courier upon written verification of receipt; (iii) by telecopy or facsimile transmission upon acknowledgment of receipt of electronic transmission; or (iv) by certified or registered mail, return receipt requested, upon verification of receipt. Notice shall be sent to Executive at the most recent address for Executive set forth in the Company's personnel files and to the Company at its principal place of business, or such other address as either party may specify in writing.

(f) Survival . Sections 2 ("Severance"), 3 ("Condition to Severance Obligations"), 4 ("Agreement to Arbitrate") and 6 ("General Provisions") of this Agreement shall survive termination of Executive's employment with the Company.

(g) Entire Agreement . This Agreement and any covenants and agreements incorporated herein by reference as set forth in Section 3 together constitute the entire agreement between the parties in respect of the subject matter contained herein and therein and supersede all prior or simultaneous representations, discussions, negotiations, and agreements, whether written or oral, provided, however, that for the avoidance of doubt, all Other Arrangements (as such Other Arrangements may be amended, modified or terminated from time to time) shall remain in effect in accordance with their terms, subject to Section 2(e) hereof. This Agreement may be amended or modified only with the written consent of Executive and an authorized representative of the Company. No oral waiver, amendment or modification will be effective under any circumstances whatsoever.

(h) Code Section 409A .

(i) The intent of the parties is that the payments and benefits under this Agreement comply with or be exempt from Section 409A of the Code and the regulations and guidance promulgated thereunder (collectively, " ***Section 409A*** ") and, accordingly, to the maximum extent permitted, this Agreement shall be interpreted to be in compliance therewith.

(ii) Notwithstanding anything in this Agreement to the contrary, any compensation or benefits payable under this Agreement upon Executive's termination of employment shall be payable only upon Executive's "separation from service" with the Company within the meaning of Section 409A (a " ***Separation from Service*** ") and, except as provided below, any such compensation or benefits shall not be paid, or, in the case of installments, shall not commence payment, until the 60th day following Executive's Separation from Service (the " ***First Payment Date*** "). Any installment payments that would have been made to Executive during the 60 day period immediately following Executive's Separation from Service but for the preceding sentence shall be paid to Executive on the First Payment Date and the remaining payments shall be made as provided in this Agreement.

(iii) Notwithstanding anything in this Agreement to the contrary, if Executive is deemed by the Company at the time of Executive's Separation from Service to be a "specified employee" for purposes of Section 409A, to the extent delayed commencement of any portion of the benefits to which Executive is entitled under this Agreement is required in order to avoid a prohibited distribution under Section 409A, such portion of Executive's benefits shall not be provided to Executive prior to the earlier of (i) the expiration of the six-month period measured from the date of Executive's Separation from Service with the Company or (ii) the date of Executive's death. Upon the first business day following the expiration of the applicable Section 409A period, all payments deferred pursuant to the preceding sentence shall be paid in a lump sum to Executive (or Executive's estate or beneficiaries), and any remaining payments due to Executive under this Agreement shall be paid as otherwise provided herein.

(iv) Executive's right to receive any installment payments under this Agreement shall be treated as a right to receive a series of separate payments and, accordingly, each such installment payment shall at all times be considered a separate and distinct payment as permitted under Section 409A. Except as otherwise permitted under Section 409A, no payment hereunder shall be accelerated or deferred unless such acceleration or deferral would not result in additional tax or interest pursuant to Section 409A.

(i) Consultation with Legal and Financial Advisors . By executing this Agreement, Executive acknowledges that this Agreement confers significant legal rights, and may also involve the waiver of rights under other agreements; that the Company has encouraged Executive to consult with Executive's personal legal and financial advisors; and that Executive has had adequate time to consult with Executive's advisors before executing this Agreement.

(j) Counterparts . This Agreement may be executed in multiple counterparts, each of which shall be deemed an original but all of which together shall constitute one and the same instrument.

[*signature page follows*]

THE PARTIES TO THIS AGREEMENT HAVE READ THE FOREGOING AGREEMENT AND FULLY UNDERSTAND EACH AND EVERY PROVISION CONTAINED HEREIN. WHEREFORE, THE PARTIES HAVE EXECUTED THIS AGREEMENT ON THE DATES SHOWN BELOW.

RADIUS HEALTH, INC.

By: _____
Name: _____
Title: _____

EXECUTIVE

_____

exhibit A

GENERAL RELEASE OF CLAIMS

[*The language in this Release may change based on legal developments and evolving best practices; this form is provided as an example of what will be included in the final Release document.*]

This General Release of Claims (" ***Release*** ") is entered into as of this _____ day of _____, ____, between [NAME] (" ***Executive*** "), and Radius Health, Inc., (the " ***Company*** ") (collectively referred to herein as the " ***Parties*** ").

WHEREAS, Executive and the Company are parties to that certain Executive Severance Agreement dated as of _____, ____ (the " ***Agreement*** ");

WHEREAS, the Parties agree that Executive is entitled to certain severance benefits under the Agreement, subject to Executive's execution of this Release; and

WHEREAS, the Company and Executive now wish to fully and finally to resolve all matters between them.

NOW, THEREFORE, in consideration of, and subject to, the severance benefits payable to Executive pursuant to the Agreement, the adequacy of which is hereby acknowledged by Executive, and which Executive acknowledges that he or she would not otherwise be entitled to receive, Executive and the Company hereby agree as follows:

1. General Release of Claims by Executive .

(a) Executive, on behalf of himself or herself and his or her executors, heirs, administrators, representatives and assigns, hereby agrees to release and forever discharge the Company and all predecessors, successors and their respective parent corporations, affiliates, related, and/or subsidiary entities, and all of their past and present investors, directors, shareholders, officers, general or limited partners, employees, attorneys, creditors, agents and representatives, and the employee benefit plans in which Executive is or has been a participant by virtue of his or her employment with or service to the Company (collectively, the " ***Company Releasees*** "), from any and all claims, debts, demands, accounts, judgments, rights, causes of action, equitable relief, damages, costs, charges, complaints, obligations, promises, agreements, controversies, suits, expenses, compensation, responsibility and liability of every kind and character whatsoever (including attorneys' fees and costs), whether in law or equity, known or unknown, asserted or unasserted, suspected or unsuspected (collectively, " ***Claims*** "), which Executive has or may have had against such entities based on any events or circumstances arising or occurring on or prior to the date hereof, arising directly or indirectly out of, relating to, or in any other way involving in

any manner whatsoever Executive's employment by or service to the Company or the termination thereof, including any and all claims arising under federal, state, or local laws relating to employment, including without limitation claims of wrongful discharge, breach of express or implied contract, fraud, misrepresentation, defamation, or liability in tort, and claims of any kind that may be brought in any court or administrative agency including, without limitation, claims under Title VII of the Civil Rights Act of 1964, as amended, 42 U.S.C. Section 2000, et seq .; the Americans with Disabilities Act, as amended, 42 U.S.C. § 12101 et seq .; the Rehabilitation Act of 1973, as amended, 29 U.S.C. § 701 et seq .; the Civil Rights Act of 1866, and the Civil Rights Act of 1991; 42 U.S.C. Section 1981, et seq .; the Age Discrimination in Employment Act, as amended, 29 U.S.C. Section 621, et seq . (the " ***ADEA*** "); the Equal Pay Act, as amended, 29 U.S.C. Section 206(d); regulations of the Office of Federal Contract Compliance, 41 C.F.R. Section 60, et seq .; the Family and Medical Leave Act, as amended, 29 U.S.C. § 2601 et seq .; the Fair Labor Standards Act of 1938, as amended, 29 U.S.C. § 201 et seq .; the Employee Retirement Income Security Act, as amended, 29 U.S.C. § 1001 et seq .; and any similar state or local law.

Notwithstanding the generality of the foregoing, Executive does not release the following:

(i) Claims for unemployment compensation or any state disability insurance benefits pursuant to the terms of applicable state law;

(ii) Claims for workers' compensation insurance benefits under the terms of any worker's compensation insurance policy or fund of the Company;

(iii) Claims pursuant to the terms and conditions of the federal law known as COBRA;

(iv) Claims for indemnity under the bylaws of the Company or its affiliates, as provided for by law or under any applicable insurance policy with respect to Executive's liability as an employee, director or officer of the Company pursuant to which Executive is covered as of the effective date of Executive's termination of employment with the Company and its subsidiaries ;

(v) Claims for payment under Section 2(a) or Section 2(b), as applicable, of the Agreement ; and

(vi) Any rights that cannot be released as a matter of applicable law, but only to the extent such rights may not be released under such applicable law.

(b) Executive acknowledges that this Release was presented to him or her on the date indicated above and that Executive is entitled to have [twenty-one (21)/forty-five (45)] days' time in which to consider it. Executive further acknowledges that the Company has advised

him or her that he or she is waiving his or her rights under the ADEA, and that Executive should consult with an attorney of his or her choice before signing this Release, and Executive has had sufficient time to consider the terms of this Release. Executive represents and acknowledges that if Executive executes this Release before [twenty-one (21)/forty-five (45)] days have elapsed, Executive does so knowingly, voluntarily, and upon the advice and with the approval of Executive's legal counsel (if any), and that Executive voluntarily waives any remaining consideration period.

(c) Executive understands that after executing this Release, Executive has the right to revoke it within seven (7) days after his or her execution of it. Executive understands that this Release will not become effective and enforceable unless the seven (7) day revocation period passes and Executive does not revoke the Release in writing. Executive understands that this Release may not be revoked after the seven (7) day revocation period has passed. Executive also understands that any revocation of this Release must be made in writing and delivered to the Company at its principal place of business within the seven (7) day period.

(d) Executive understands that this Release shall become effective, irrevocable, and binding upon Executive on the eighth (8th) day after his or her execution of it, so long as Executive has not revoked it within the time period and in the manner specified in clause (c) above. Executive further understands that Executive will not be given any severance benefits under the Agreement unless this Release is effective on or before the date that is [30/60] days following the date of Executive's termination of employment.

2. No Assignment . Executive represents and warrants to the Company Releasees that there has been no assignment or other transfer of any interest in any Claim that Executive may have against the Company Releasees. Executive agrees to indemnify and hold harmless the Company Releasees from any liability, claims, demands, damages, costs, expenses and attorneys' fees incurred as a result of any such assignment or transfer from Executive.

3. Severability . In the event any provision of this Release is found to be unenforceable by an arbitrator or court of competent jurisdiction, such provision shall be deemed modified to the extent necessary to allow enforceability of the provision as so limited, it being intended that the parties shall receive the benefit contemplated herein to the fullest extent permitted by law. If a deemed modification is not satisfactory in the judgment of such arbitrator or court, the unenforceable provision shall be deemed deleted, and the validity and enforceability of the remaining provisions shall not be affected thereby.

4. Interpretation; Construction . The headings set forth in this Release are for convenience only and shall not be used in interpreting this Agreement. This Release has been drafted by legal counsel representing the Company, but Executive has participated in the negotiation of its terms. Furthermore, Executive acknowledges that Executive has had an opportunity to review

and revise the Release and have it reviewed by legal counsel, if desired, and, therefore, the normal rule of construction to the effect that any ambiguities are to be resolved against the drafting party shall not be employed in the interpretation of this Release. Either party's failure to enforce any provision of this Release shall not in any way be construed as a waiver of any such provision, or prevent that party thereafter from enforcing each and every other provision of this Release.

5. Governing Law and Venue . This Release will be governed by and construed in accordance with the laws of the United States and the Commonwealth of Massachusetts applicable to contracts made and to be performed wholly within such Commonwealth, and without regard to the conflicts of laws principles that would result in the applicable of the laws of another jurisdiction. Any suit brought hereon shall be brought in the state or federal courts sitting in Boston, Massachusetts, the parties hereby waiving any claim or defense that such forum is not convenient or proper. Each party hereby agrees that any such court shall have in personam jurisdiction over it and consents to service of process in any manner authorized by Massachusetts law.

6. Entire Agreement . This Release and the Agreement constitute the entire agreement of the Parties in respect of the subject matter contained herein and therein and supersede all prior or simultaneous representations, discussions, negotiations and agreements, whether written or oral. This Release may be amended or modified only with the written consent of Executive and an authorized representative of the Company. No oral waiver, amendment or modification will be effective under any circumstances whatsoever.

7. Counterparts . This Release may be executed in multiple counterparts, each of which shall be deemed to be an original but all of which together shall constitute one and the same instrument.

(Signature Page Follows)

IN WITNESS WHEREOF, and intending to be legally bound, the Parties have executed the foregoing Release as of the date first written above.

RADIUS HEALTH, INC.

Dated: _____

By: _____

Name: _____

Title: _____

EXECUTIVE

Dated: _____

_____

Exhibit 21.1

SUBSIDIARIES OF RADIUS HEALTH, INC.

Legal Name of Subsidiary	Jurisdiction of Organization
Radius Global Support, Inc.	Delaware
Radius Health Securities Corporation	Massachusetts
Radius International Limited	United Kingdom
Radius Pharmaceuticals (Bermuda) Ltd.	Bermuda
Radius Pharmaceuticals, Inc.	Delaware

Exhibit 23.1

Consent of Independent Registered Public Accounting Firm

We consent to the incorporation by reference in the Registration Statement on Form S-3 (No. 333-201610) and Form S-8 (Nos. 333-177800, 333-195521, 333-213081, 333-213082, and 333-215552) of Radius Health, Inc. and in the related Prospectus of our reports dated February 24, 2017, with respect to the consolidated financial statements of Radius Health, Inc. and the effectiveness of internal control over financial reporting of Radius Health, Inc. included in this Annual Report on Form 10-K for the year ended December 31, 2016.

/s/ Ernst & Young LLP

Boston, Massachusetts
February 24, 2017

Exhibit 31.1

CERTIFICATIONS

I, Robert E. Ward, certify that:

1. I have reviewed this annual report on Form 10-K of Radius Health, Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

a. Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

b. Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

c. Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

d. Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting.

5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's Board of Directors (or persons performing the equivalent functions):

a. All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

b. Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: February 24, 2017

/s/ Robert E. Ward

Robert E. Ward

President and Chief Executive Officer

Exhibit 31.2

CERTIFICATIONS

I, B. Nicholas Harvey, certify that:

1. I have reviewed this annual report on Form 10-K of Radius Health, Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

a. Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

b. Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

c. Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

d. Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting.

5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's Board of Directors (or persons performing the equivalent functions):

a. All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

b. Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: February 24, 2017

/s/ B. Nicholas Harvey

B. Nicholas Harvey

Chief Financial Officer

Exhibit 32.1

CERTIFICATION PURSUANT TO
18 U.S.C. SECTION 1350
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

In connection with the Annual Report of Radius Health, Inc. (the "Company") on Form 10-K for the fiscal year ended December 31, 2016 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, Robert E. Ward, certify, pursuant to 18 U.S.C. § 1350, as adopted pursuant to § 906 of the Sarbanes-Oxley Act of 2002, that to my knowledge:

(1) The Report fully complies with the requirements of section 13(a) or 15(d) of the Securities Exchange Act of 1934; and

(2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

February 24, 2017

By: /s/ Robert E. Ward

Robert E. Ward

President and Chief Executive Officer

A signed original of this written statement required by Section 906 has been provided to the Company and will be retained by the Company and furnished to the Securities and Exchange Commission or its staff upon request.

Exhibit 32.2

CERTIFICATION PURSUANT TO
18 U.S.C. SECTION 1350
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

In connection with the Annual Report of Radius Health, Inc. (the "Company") on Form 10-K for the fiscal year ended December 31, 2016 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, B. Nicholas Harvey, certify, pursuant to 18 U.S.C. § 1350, as adopted pursuant to § 906 of the Sarbanes-Oxley Act of 2002, that to my knowledge:

(1) The Report fully complies with the requirements of section 13(a) or 15(d) of the Securities Exchange Act of 1934; and

(2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

February 24, 2017

By: /s/ B. Nicholas Harvey

B. Nicholas Harvey

Senior Vice President, Chief Financial Officer,

Treasurer and Secretary

A signed original of this written statement required by Section 906 has been provided to the Company and will be retained by the Company and furnished to the Securities and Exchange Commission or its staff upon request.