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## Radius Announces Topline Results of Successful Phase 1b Clinical Trial of BA058 Microneedle Patch for the Transdermal Treatment of Osteoporosis

### Technical Feasibility Demonstrated for Transdermal Delivery of BA058; Study Endpoints of Pharmacokinetic Profile, Safety, and Tolerability Successfully Met; Results Support Plan for Future Phase 2 Proof-of-Concept Clinical Trial

CAMBRIDGE, MA--(Marketwire - Dec 21, 2011) - Radius Health, Inc. ("Radius") announced today positive results from a Phase 1b clinical study to evaluate the transdermal BA058 Microneedle Patch. BA058 is the company's novel anabolic (bone-building) drug for the treatment of osteoporosis currently also undergoing Phase 3 evaluation as a daily subcutaneous injection. The BA058 Microneedle Patch is Radius' short wear-time, transdermal form of BA058 based on 3M Drug Delivery Systems' Solid Microstructured Transdermal Systems (sMTS) microneedle technology platform. The successful trial demonstrated the ability of the BA058 Microneedle Patch to safely and rapidly deliver BA058 over a short wear time, with no increased exposure resulting from longer wear, as well as supportive biochemical evidence of bone-building activity following seven days of dosing.

The Phase 1b trial was a randomized, double-blind, placebo-controlled study designed to assess the pharmacokinetic (PK) profile, safety, and tolerability of single and multiple doses of BA058 delivered transdermally via microneedle patch. The trial also evaluated wear time and administration site tolerability compared to BA058 subcutaneous injection. The study was conducted on 74 otherwise healthy postmenopausal women from 50 to 80 years of age who received at least one daily dose of the BA058 Microneedle Patch, placebo, or BA058 Injection. The BA058 Microneedle Patch was shown to be safe and well-tolerated in all doses studied, consistent with results from Phase 1 and 2 studies of the company's BA058 Injection product, and demonstrated a suitable PK profile relative to BA058 Injection.

Key findings from the trial include:

- Rapid release of BA058 from the microneedle patch
- Peak transdermal drug levels consistent with BA058 subcutaneous injection
- Faster time to reach peak concentration as well as more rapid elimination in plasma compared to subcutaneous injection
- Increase in the bone-formation marker P1NP in serum after seven days of exposure, consistent with bone-building activity
- Identification of optimal wear time of 5 minutes or less as well as effective sites of application

"These Phase 1 transdermal data provide further evidence of BA058's potential to become an important new therapy for osteoporosis that rapidly and safely restores lost bone," said Michael S. Wyzga, President and CEO of Radius. "With valuable data on wear time, application site, and the ability to quickly reach therapeutic plasma concentrations from transdermal application of BA058 now obtained, we look forward to launching a Phase 2 study in 2012 to evaluate the effects of the BA058 Microneedle Patch on bone mineral density."

"BA058 provides 3M the opportunity to help develop an innovative transdermal therapy using our microneedle technology that has the potential to address a significant unmet medical need in osteoporosis," said James D. Ingebrand, Vice President and General Manager of 3M Drug Delivery Systems Division. "Both Radius and 3M believe that combining Radius' novel BA058 anabolic agent and deep domain expertise in osteoporosis with 3M's unique delivery system will result in a product that increases efficacy, improves therapeutic outcomes, and is easy to use for patients suffering from this growing chronic disease."

#### About BA058

BA058 is Radius' novel anabolic (bone-building) drug in development for the treatment of osteoporosis. BA058 is an analog of hPTHrP (human parathyroid hormone-related protein) in development by Radius in subcutaneous injection and transdermal delivery forms:

- **BA058 Injection** is currently in a Phase 3 clinical study. In Phase 1 and 2 studies involving otherwise healthy postmenopausal women, BA058 Injection demonstrated the ability to rapidly stimulate bone formation at critical fracture sites, with limited effect on bone resorption and minimized risk of hypercalcemia.
- The **BA058 Microneedle Patch** has completed Phase 1 clinical studies. Radius is developing the transdermal form of BA058 based on 3M Drug Delivery Systems' Solid Microstructured Transdermal Systems (sMTS) microneedle technology platform. In Phase 1 studies, the BA058 Microneedle Patch demonstrated safety and tolerability in otherwise healthy

postmenopausal women, with a suitable pharmacokinetic profile.

Radius acquired exclusive worldwide rights (excluding Japan) to develop, manufacture, and distribute BA058 and its analogs from Ipsen in 2005.

**About Radius ([www.radiuspharm.com](http://www.radiuspharm.com))**

Radius is a leading company developing a new generation of drug therapies for osteoporosis and women's health. BA058, Radius' novel, proprietary analog of PTHrP (parathyroid hormone-related protein), is in clinical development as a treatment for osteoporosis in two delivery options: BA058 Injection is a subcutaneous injection form in a Phase 3 clinical study; and the BA058 Microneedle Patch, which has completed Phase 1 evaluation, is a short wear-time, transdermal form based on a microneedle technology from 3M Drug Delivery Systems. The company has a pipeline of additional drug candidate programs in earlier stages of development. Radius is located in Cambridge, Massachusetts.

**About 3M Drug Delivery Systems ([www.3m.com/dds](http://www.3m.com/dds))**

3M Drug Delivery Systems partners with pharmaceutical and biotech companies to develop pharmaceuticals using 3M's inhalation or transdermal drug delivery technology. 3M offers a full range of feasibility, development and manufacturing capabilities combined with regulatory guidance to help bring products to market. In-house resources, including toxicology, regulatory expertise, quality assurance, operations, and marketed product support, are available for each step of the development and commercialization process. This depth of resources is one reason why more than 50 percent of all metered-dose inhalers worldwide and 80 percent of all transdermal systems in the United States utilize 3M drug delivery technology.

**Safe Harbor for Forward-Looking Statements**

Any statements made in this press release relating to future financial or business performance, conditions, plans, prospects, trends, or strategies and other financial and business matters, including without limitation, the timing for Radius becoming a publicly traded corporation and the development of Radius' products, are forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. In addition, when or if used in this press release, the words "may," "could," "should," "anticipate," "believe," "estimate," "expect," "intend," "plan," "predict" and similar expressions and their variants, as they relate to Radius or its management, may identify forward-looking statements. Radius cautions that these forward-looking statements are subject to numerous assumptions, risks, and uncertainties, which change over time. Important factors that may cause actual results to differ materially from the results discussed in the forward-looking statements or historical experience include risks and uncertainties, including the failure by Radius to secure and maintain relationships with collaborators; risks relating to clinical trials; risks relating to the commercialization, if any, of Radius' proposed product candidates (such as marketing, regulatory, patent, product liability, supply, competition, and other risks); dependence on the efforts of third parties; dependence on intellectual property; and risks that Radius may lack the financial resources and access to capital to fund our operations. Further information on the factors and risks that could affect Radius' business, financial conditions and results of operations are contained in Radius' filings with the U.S. Securities and Exchange Commission, which are available at [www.sec.gov](http://www.sec.gov). The forward-looking statements represent Radius' estimate as of the date hereof only, and Radius specifically disclaims any duty or obligation to update forward-looking statements.

**Contact:**

**Radius**

Nick Harvey  
Chief Financial Officer  
(617) 551-4704

**3M**

Mary Kokkinen  
651-733-8806