



DIVISION OF  
CORPORATION FINANCE

UNITED STATES  
SECURITIES AND EXCHANGE COMMISSION  
WASHINGTON, D.C. 20549

July 18, 2011

Via E-Mail

C. Richard Lyttle, Ph.D., Chief Executive Officer  
Radius Health, Inc.  
201 Broadway, 6<sup>th</sup> Floor  
Cambridge, Massachusetts 02139

**Re: Radius Health, Inc.  
Registration Statement on Form S-1  
Filed June 23, 2011  
File No. 333-175091**

Dear Dr. Lyttle:

We have reviewed your registration statement and have the following comments. In some of our comments, we may ask you to provide us with information so we may better understand your disclosure.

Please respond to this letter by amending your registration statement and providing the requested information. If you do not believe our comments apply to your facts and circumstances or do not believe an amendment is appropriate, please tell us why in your response.

After reviewing any amendment to your registration statement and the information you provide in response to these comments, we may have additional comments.

Form S-1, filed June 23, 2011

General

1. To the extent applicable, please amend your registration statement to comply with the Staff's comments issued on June 28, 2011 pertaining to the company's Form 8-K, filed with the Commission on May 23, 2011.
2. To the extent you revise the Form 8-K filed May 23, 2011 due to staff comments issued in the letter dated June 28, 2011 and the revisions impact the financial statements and disclosures in this registration statement please include those revisions in your amendment to Form S-1, as applicable.

3. Please advise or revise to present a capitalization table. We note that there will be an impact on shareholders' deficit after converting preferred stock, preferred stock purchase warrants and common stock purchase warrants in this offering.
4. We note that you are registering all or almost all of the common stock outstanding, including the conversion of the preferred stock. It appears that this offering is being conducted by or on behalf of the issuer for purposes of Rule 415(a)(4) of Regulation C under the Securities Act. For these sales to occur "at the market," the provisions of Rule 415(a)(4) must be satisfied. As your offering does not appear to meet these provisions, an "at the market" offering by the selling shareholders is not permissible. As a result, you should set a fixed price for the duration of the offering at which selling security holders will offer and sell the common stock in the proposed offering.

Summary, page 1

5. Please disclose the common stock outstanding as of a recent practicable date and the amount of shares that would be outstanding if the preferred stock is converted.

Risk Factors, page 5

6. Please revise the second risk factor on page six to clearly disclose that you are subject to the Sarbanes-Oxley Act of 2002, the Exchange Act and other federal securities laws, rather than "will be." You are already a reporting company and thus are subject to these rules and laws.
7. Please revise your risk factor beginning, "If our efforts to protect our intellectual property..." on page 13 to explain what is meant by "the possibility of Hatch Waxman extension."

Security Ownership of Certain Beneficial Owners and Management, page 64

8. We note the disclosure in footnote one to the beneficial ownership table. Please revise your table to reflect the percentage of ownership of the outstanding common stock, assuming conversion of all convertible preferred stock, to the extent the shareholder has the right to such conversion within sixty days. See Rule 13d-3(d)(1) of the Exchange Act.

Market for Common Equity and Related Stockholders Matters, page 71

9. Provide the disclosure required by Item 201(a)(2), (b), (c) and (d) or advise.

Use of Proceeds, page 71

10. Please revise the disclosure in this section to clearly indicate that the warrants may be exercised on a cashless basis and that there is no guarantee the company will receive any cash from the exercise of warrants.

Selling Stockholders, page 71

11. Please reconcile your disclosure that the prospectus covers the resale by the selling stockholders, in part, of 15,488,300 shares issuable upon conversion of Preferred Stock with your disclosure elsewhere in your prospectus referring to 15,491,300.
12. Please revise the total of 16,083,040 to reconcile with the total amount of shares offered by selling shareholders disclosed here and on the cover page of the registration statement.
13. Please disclose the control person(s) for each selling shareholder that is an entity.
14. Please clarify whether any selling shareholders are broker-dealers or affiliates of broker-dealers.

Description of Capital Stock, page 77

Restrictions on Alienability, page 79

15. We note the disclosure in your third risk factor, beginning “Shares of our Capital Stock issued in the Merger...” regarding the lock-up provision of the stockholders’ agreement. Please disclose the material terms of the lock-up provision set forth in the applicable stockholders’ agreement.

Exhibits

16. We note that you will be filing several exhibits by amendment. Please file these exhibits as soon as possible.

Financial Statements

17. Revise to provide historical financial statements of the shell company, MPM Acquisition Corp, as of and for each of the years ended December 31, 2009 and 2010 and as of and for the three months ended March 31, 2011. When you update the registration statement to provide financial statements as of and for the six months ended June 30, 2011, the historical financial statements of Radius Health should be retroactively restated to give effect to the reverse merger with MPM Acquisition Corp and you may then delete the historical financial statements of MPM Acquisition Corp and the related pro forma information from the registration statement.

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We urge all persons who are responsible for the accuracy and adequacy of the disclosure in the filing to be certain that the filing includes the information the Securities Act of 1933 and all applicable Securities Act rules require. Since the company and its management are in possession of all facts relating to a company's disclosure, they are responsible for the accuracy and adequacy of the disclosures they have made.

Notwithstanding our comments, in the event you request acceleration of the effective date of the pending registration statement please provide a written statement from the company acknowledging that:

- should the Commission or the staff, acting pursuant to delegated authority, declare the filing effective, it does not foreclose the Commission from taking any action with respect to the filing;
- the action of the Commission or the staff, acting pursuant to delegated authority, in declaring the filing effective, does not relieve the company from its full responsibility for the adequacy and accuracy of the disclosure in the filing; and
- the company may not assert staff comments and the declaration of effectiveness as a defense in any proceeding initiated by the Commission or any person under the federal securities laws of the United States.

Please refer to Rules 460 and 461 regarding requests for acceleration. We will consider a written request for acceleration of the effective date of the registration statement as confirmation of the fact that those requesting acceleration are aware of their respective responsibilities under the Securities Act of 1933 and the Securities Exchange Act of 1934 as they relate to the proposed public offering of the securities specified in the above registration statement. Please allow adequate time for us to review any amendment prior to the requested effective date of the registration statement.

You may contact Brian McAllister at (202) 551-3341 or Tia Jenkins at (202) 551-3871 if you have questions regarding comments on the financial statements and related matters. Please contact Erin Wilson at (202) 551-6047 or Pamela Howell at (202) 551-3357 with any other questions.

Sincerely,

/s/ Pamela Howell  
for

John Reynolds  
Assistant Director