



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

DIVISION OF
CORPORATION FINANCE

July 30, 2013

Via E-mail

John Knopf
Chief Executive Officer and President
Acceleron Pharma Inc.
128 Sidney Street
Cambridge, MA 02139

**Re: Acceleron Pharma Inc.
Draft Registration Statement on Form S-1
Filed July 3, 2013
File No. 377-00232**

Dear Dr. Knopf:

We have reviewed your draft 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 providing the requested information and either submitting an amended draft registration statement or publicly filing your registration statement on EDGAR. 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 the information you provide in response to these comments and your amended draft registration statement or filed registration statement, we may have additional comments.

General

1. Please file all exhibits as soon as practicable. We may have further comments upon examination of these exhibits.
2. Please provide us proofs of all graphic, visual or photographic information you will provide in the printed prospectus prior to its use, for example in a preliminary prospectus. Please note that we may have comments regarding this material.
3. Please supplementally provide us with any written materials that you or anyone authorized to do so on your behalf provides in reliance on Section 5(d) of the Securities Act to potential investors that are qualified institutional buyers or institutional accredited investors. Similarly, please supplementally provide us with any research reports about you that are published or distributed in reliance upon Section 2(a)(3) of the Securities Act

of 1933 added by Section 105(a) of the Jumpstart Our Business Startups Act by any broker or dealer that is participating or will participate in your offering.

4. Comments to your application for confidential treatment will be delivered under separate cover.

We have in-licensed a portion of our intellectual property . . . , page 22

5. We note on page 23 that you state that an unfavorable outcome in the litigation with Salk may lead to you owing significant damages. If there is a material risk of Salk terminating the license agreement in the event of an unfavorable outcome or otherwise, please provide appropriate disclosure. Additionally, please disclose how the termination of this license agreement would affect your operations.

Management's Discussion and Analysis of Financial Condition and Results of Operations
Critical Accounting Policies and Significant Judgments and Estimates
Stock-Based Compensation, page 53

6. We have the following comments regarding your disclosure and accounting for stock-based compensation:
 - Since you have not disclosed an estimated offering price we are deferring a final evaluation of stock compensation and other costs recognized until the estimated offering price is specified. We may have further comments in this regard when the amendment containing that information is filed.
 - On page 53 of your discussion about the fair value of stock option grants in year 2012, you indicate that you utilized and assumed an annual volatility rate of 69% based on "a group of similar companies that are publicly traded". Please tell us the name of these companies and explain to us why you deemed them to be comparable to you. In your response, for each of these companies, tell us the following information at your valuation dates:
 - annual revenues;
 - annual product revenues;
 - net income/loss;
 - assets;
 - equity;
 - number of products in development and their stages of development; and
 - number of marketed products
 - Please provide in your filing, containing the IPO price range, a discussion of each significant factor contributing to the difference between the fair value as of the date of each grant and the estimated IPO price range. Please reconcile and explain the differences between the mid-point of your estimated offering price range and the fair values included in your analysis.

- Please confirm that you have not issued any additional equity issuances including stock options, warrants, convertible preferred stock and debt since the latest balance sheet date or provide additional disclosure through the date of effectiveness.

Business, page 72

7. Please estimate the amount spent on research and development for the past three years ending in December 31, 2012 as required by Regulation S-K Item 101(c)(1)(xi).
8. Please amend your disclosure to state the INDs you have submitted by indication for sotatercept, ACE-536, and dalantercept. Additionally, please state the date you filed each such IND.
9. We note that the FDA granted orphan designation for ACE-536 for the treatment of β -thalassemia and for the treatment of MDS on page 84. Please disclose if you have applied or are planning to apply for orphan designation for any indications of sotatercept or dalantercept. Additionally, please state the status of any application with the FDA. Alternatively, if you are not applying for orphan status for sotatercept for the treatment of β -thalassemia and for the treatment of MDS, please explain why.

Our Strategic Partnerships
Sotatercept Agreement, page 92

10. Please amend your disclosure to identify the three discovery stage programs disclosed on page 92.

In-Licenses, page 98

11. We note that you entered into two amended and restated license agreements with Salk. Please file these agreements as exhibits pursuant to Item 601(b)(10) of Regulation S-K.

Management, page 109

12. Please amend your disclosure to identify each director that is independent under the listing standards of NASDAQ.

Principal Stockholders, page 130

13. Please revise the table on page 131 to include the shares held by Venrock entities as also held by Dr. Evnin; the shares held by ATV entities as also held by Ms. George; the shares held by Flagship Venture, AGTC, or AGTC Fund as also held by Mr. Kania; the shares held by Polaris Venture Partners or related funds as also held by Mr. McGuire; and the shares held by OrbiMed or its affiliates as also held by Dr. Gordon. Please also include these shares in the total aggregate shares of all executive officers and directors as a group.

Although you may disclose that these individuals disclaim beneficial ownership in the footnotes, you must include the shares in the table to the extent they hold shared or sole voting or investment power.

Underwriting, page 148

14. Once available please file copies of each of the lock-up agreements.

Notes to Financial Statements

7. Commitments and Contingencies

Legal Proceedings, page F-28

15. Please revise your disclosures to comply with ASC 450.

8. Redeemable convertible preferred stock

Special Mandatory, page F-33

16. On page F-34 you state that “As noted above, in certain events, the Series E Preferred Stock may convert to common stock on a basis higher than 1:1, based on a formula driven by the date on which the Company completes an IPO and the price of such offering. The Company concluded, in accordance with the provisions of ASC 470, that as the changes to the conversion terms would be triggered by a future event that is outside of the Company's control, this represents a contingent conversion option, and, therefore, should not be recognized until and unless the triggering event occurs. Since that triggering event will occur with the completion of the IPO and will be accounted for in your first quarterly filing after effectiveness, please disclose the amount and accounting for the conversion, if material (in your Amendment filed which includes an IPO range) in a “subsequent event” footnote.

10. Significant Agreements

Accounting Analysis, page F-41

17. You state that “As a result of the material modifications to the cost sharing obligations, milestone payments structure and royalty payment structure, the Company concluded the modification represented a significant modification under ASU 2009-13, which required the Company to apply the updated provisions of ASU 2009-13 subsequent to the modification.” and “the Company recognized \$54.8 million, \$2.0 million, \$0.5 million and \$0.6 million, respectively, of the total deferred revenue as license and milestone revenue in the accompanying statements of operations and comprehensive income (loss).” Please elaborate on your assertion that the licenses have standalone value to Celgene. In your response, tell us how Celgene can exploit the licenses without the additional development services that you are obligated to perform. Tell us:
 - whether and how Celgene or any other party can perform these development services given your expertise with your intellectual property;

- whether Celgene has the rights and full access to past and future intellectual information in order to obtain regulatory approval of the products.
- whether the intellectual property rights conveyed through the license have value to the customer absent any other deliverables

18. You state that after determining BESP of the undelivered elements, the residual consideration of \$49.5 million was recognized upon execution of the arrangements. You also state that the difference between the estimated payments of \$18.0 million and the estimated selling prices which totaled \$28.2 million, using BESP, for undelivered elements was \$10.2 million and was deferred at inception and will be recognized as the undelivered elements are delivered, using the proportional performance method, or ratably in the case of performance on the Joint Development Committee. Please tell us why you believe the residual method is appropriate under ASC 605-25-30-3 as amended by ASC 2009-13.

General

If you intend to respond to these comments with an amended draft registration statement, please submit it and any associated correspondence in accordance with the guidance we provide in the Division's October 11, 2012 announcement on the SEC website at <http://www.sec.gov/divisions/corpfin/cfannouncements/drsfilingprocedures101512.htm>.

Please keep in mind that we may publicly post filing review correspondence in accordance with our December 1, 2011 policy (<http://www.sec.gov/divisions/corpfin/cfannouncements/edgarcorrespondence.htm>). If you intend to use Rule 83 (17 CFR 200.83) to request confidential treatment of information in the correspondence you submit on EDGAR, please properly mark that information in each of your confidential submissions to us so we do not repeat or refer to that information in our comment letters to you.

You may contact James Peklenk at (202) 551-3661 or Mary Mast at (202) 551-3613 if you have questions regarding comments on the financial statements and related matters. Please contact Matthew Jones at (202) 551-3786 or me at (202) 551-3715 with any other questions.

Sincerely,

/s/ Jeffrey P. Riedler

Jeffrey P. Riedler
Assistant Director

Dr. John Knopf
Acceleron Pharma Inc.
July 30, 2013
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cc: Marc Rubenstein
Ropes & Gray LLP
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