



DIVISION OF
CORPORATION FINANCE

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

April 24, 2013

Via E-mail

Thomas Okarma
Chief Executive Officer
Asterias Biotherapeutics, Inc.
230 Constitution Drive
Menlo Park, CA 94025

**Re: Asterias Biotherapeutics, Inc.
Registration Statement on Form S-1
Filed April 3, 2013
File No. 333-187706**

Dear Mr. Okarma:

Our preliminary review of your registration statement indicates that it fails in numerous material respects to comply with the requirements of the Securities Act of 1933, the rules and regulations under that Act, and the requirements of the form. We will not perform a detailed examination of the registration statement until the issues identified in the comments below are fully resolved because to do so would delay the review of other disclosure documents that do not appear to contain comparable deficiencies. Where 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.

If you were to request acceleration of the effective date of the registration statement in its present form, we would likely recommend that the Commission deny your request. We suggest that you consider filing a substantive amendment to correct the deficiencies identified in the comments below.

General

1. It appears that the Geron contribution may constitute a business combination. Please provide financial statements that comply with Rule 3-05 of Regulation S-X or tell us why you believe no financial statements are required. Please refer to paragraphs 4-9 of ASC 805-10-55 and tell us the basis for your anticipated accounting treatment.
2. Please provide pro forma financial information pursuant to Article 11 of Regulation S-X for the Asset Contribution Agreement or tell us why you believe no pro forma information is required.

3. We note that to comply with the Securities Act of 1933, any sale, offering or distribution of securities must be registered or conducted pursuant to a valid exemption. It appears that you are seeking to conduct the following offerings or distributions of Asterias Biotherapeutics, Inc.'s securities pursuant to the Asset Contribution Agreement:
 - A. The offering of the Series A Shares to Geron in exchange for the Contributed Geron Assets;
 - B. The offering of Series B Shares and warrants to purchase Series B Shares to BioTime in exchange for the BioTime Cash Contribution and BioTime Stem Cell Assets;
 - C. The offering of Series B Shares and warrants to purchase Series B Shares to Romulus in exchange for its cash contribution of \$5 million;
 - D. The Series A Distribution whereby Geron will distribute to its stockholders the Asterias Series A Shares Geron receives in the Asset Contribution; and
 - E. The potential sale to the public of Asterias Series A Shares by holders of Asterias Series A Shares after the Series A Distribution as described in Item D; and
 - F. The potential sale to the public without restriction of the Series B Shares, Series B warrants, Series B Shares underlying the Series B warrants, and any Series A Shares into which those Series B Shares may be converted, by Romulus.

Your registration statement covers the offerings contemplated by Items A, B and C above. We do not believe it is appropriate to register an offering that began privately such as the transactions contemplated by Items A, B and C. Further, Form S-3, as compared to Form S-4, does not permit the registration of the subsequent distributions or resales contemplated by Items D, E and F by virtue of registering the Item A, B and C offerings since the Item A, B and C offerings have not yet occurred and thus the securities to be offered pursuant to Items D, E and F are not yet outstanding. It is, therefore, premature to register the transactions contemplated in Items D, E and F. Accordingly, please withdraw your registration statement and register the offerings contemplated by Items D, E and F at such time as the securities are outstanding and held by Geron, holders of Asterias Series A Shares after the Series A Distribution and Romulus.

4. Please advise us as to the application of the Securities Act of 1933 with respect to each of the offerings or distributions listed in Items D, E and F above. Your analysis should include how you intend to register the transactions and to whom and when you intend to deliver a prospectus. Alternatively, if you believe there is a valid exemption from the Securities Act of 1933, please advise us of the exemption you will rely upon to conduct each privately without registration.

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You may contact Frank Wyman, Staff Accountant, (202) 551-3660, Mary Mast, Staff Accountant, at (202) 551-3613 if you have questions regarding comments on the financial statements and related matters. Please contact Karen Ubell, Staff Attorney, (202) 551-3873, Jennifer Riegel, Special Counsel, at (202) 551-3575 or me at (202) 551-3715 with any other questions.

Sincerely,

/s/ Jennifer Riegel for

Jeffrey P. Riedler
Assistant Director

cc: Via E-mail
Richard S. Soroko
Thompson, Welch, Soroko & Gilbert LLP