



DIVISION OF
CORPORATION FINANCE

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

September 19, 2013

Via E-Mail

Robert W. Peabody
Chief Financial Officer
Asterias Biotherapeutics, Inc.
1301 Harbor Bay Parkway, Suite 100
Alameda, California 94903

**Re: Asterias Biotherapeutics, Inc.
Amendment No. 3 to Registration Statement on Form S-1
Filed September 3, 2013
Response dated September 18, 2013
File No. 333-187706**

Dear Mr. Peabody:

We have reviewed your supplemental response dated September 18, 2013 to our comment letter issued September 18, 2013 and have the following comment.

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.

Summary Financial Data, page 11

1. Please refer to your response to comment one and address the following:

- You state in footnote (1) that you will remeasure both the BioTime Warrants and the corresponding obligation to distribute them at fair value, with net changes in the fair value, if any, to be reflected in other income (expenses) in your statement of operations. Please clarify that the net change in fair value will be zero or tell us why not. In addition, please clarify how long you expect to hold the BioTime warrants after completion of the Asset Contribution and if there are any circumstances in which the distribution of the BioTime warrants to Geron will change.
- Please revise your reference to December 31, 2013 in footnote (1) or tell us why that date is appropriate.

- You state in footnote (5) that \$30,000,000 will be deducted from the enterprise value for the BioTime shares. The amount is not consistent with the fair value of the BioTime shares at December 31, 2012 or June 30, 2013, as presented in the Summary Financial Data table on page 11. Please revise or advise.

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 Franklin Wyman at (202) 551-3660 or Mary Mast at (202) 551-3613 if you have questions regarding comments on the financial statements and related matters. Please contact Amy Reischauer at (202) 551-3793, Bryan Pitko at (202) 551-3203, or me at (202) 551-3715 with any other questions.

Sincerely,

/s/ Bryan J. Pitko for

Jeffrey P. Riedler

Robert W. Peabody
Asterias Biotherapeutics, Inc.
September 19, 2013
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Assistant Director

cc: Via E-Mail
Richard S. Soroko
Thompson, Welch, Soroko & Gilbert LLP
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San Francisco, California 94104