



DIVISION OF  
CORPORATION FINANCE

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

August 27, 2013

Via E-Mail

Robert W. Peabody  
Chief Financial Officer  
Asterias Biotherapeutics, Inc.  
1301 Harbor Bay Parkway, Suite 100  
Alameda, California 94

**Re: Asterias Biotherapeutics, Inc.  
Amendment No. 2 to Registration Statement on Form S-1  
Filed August 13, 2013  
File No. 333-187706**

Dear Mr. Peabody:

We have reviewed your amended 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.

General

1. We note your revised disclosure in response to our prior comment 1. Please revise your disclosure to state definitively that Geron is an underwriter rather than that it "may be" an underwriter.

Additional Information, page 10

2. We note your revised disclosure in response to our prior comment 5. Please expand your discussion of your election not to delay adoption of new or revised accounting standards under Section 102(b)(1) to include a statement that this election is irrevocable.

Summary Financial Data, page 11

1. Please refer to prior comment 12. Please move the note reference (4) to the caption, total liabilities. Also, revise the headnote to this table to remove the reference to the warrants to be distributed under the BioTime Warrants Distribution, which in your response to comment 18 you state have been excluded from this table.
2. Please refer to prior comment 13. You state that expected accounting treatment for the transactions in the Asset Contribution Agreement will be in accordance with ASC 805. Please describe the intangible assets to which the fair value of assets to be contributed by BioTime (\$115,967,556) and the fair value of assets to be contributed by Geron (\$15,303,790) will be allocated and describe and quantify the assumptions used to determine the estimated fair values of these assets. Cite the accounting literature you used to support your accounting treatment.

Capitalization, page 28

3. Please refer to prior comment 18. We acknowledge the information in your response. Please explain to us your basis for including the BioTime warrants and excluding sublicense fees payable to Geron from this presentation. Further, explain why it is appropriate for this presentation to differ from that on page 11.

Patents and Trade Secrets, page 44

3. We note your added disclosure regarding the jurisdictions in which your material patents have been issued. Please revise this discussion to identify the jurisdictions in which each identified group of patents, such as your oligodendrocyte progenitor cell patents, your cardiomyocyte patents, etc., have been issued.

License Agreement with University of California, page 46

4. We note your response and revised description of your agreement with the University of California. Please revise this disclosure to state the estimated expiration date of the last-to-expire patent licensed under this agreement.

In addition, please confirm that you will file this agreement as an exhibit to your quarterly report for the period in which the contribution agreement and related license assignment are effected.

Financial Statements  
Notes to Financial Statements  
Basis of Presentation, page F-8

4. Refer to your response to comment 39. Please disclose the allocation method used for each type of expense allocated to the company. Clearly state how each allocation was determined. State that management believes the allocation methods used are reasonable. Please refer to Staff Accounting Bulletin 1:B.

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.

Robert W. Peabody  
Asterias Biotherapeutics, Inc.  
August 27, 2013  
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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/ Daniel Greenspan for

Jeffrey P. Riedler  
Assistant Director

cc: Via E-Mail  
Richard S. Soroko  
Thompson, Welch, Soroko & Gilbert LLP  
235 Pine Street, 13th Floor  
San Francisco, California 94104