

Mail Stop 6010

April 16, 2007

Mr. Christoph Westphal
Chief Executive Officer
Sirtris Pharmaceuticals, Inc.
790 Memorial Drive
Cambridge, Massachusetts 02139

**Re: Sirtris Pharmaceuticals, Inc.
Registration Statement on Form S-1
Amendment no. 2 filed April 4, 2007
File No. 333-140979**

Dear Mr. Westphal:

We have reviewed your filing and have the following comments. Where indicated, we think you should revise your document in response to these comments. If you disagree, we will consider your explanation as to why our comment is inapplicable or a revision is unnecessary. Please be as detailed as necessary in your explanation. In some of our comments, we may ask you to provide us with information so we may better understand your disclosure. After reviewing this information, we may raise additional comments.

Please understand that the purpose of our review process is to assist you in your compliance with the applicable disclosure requirements and to enhance the overall disclosure in your filing. We look forward to working with you in these respects. We welcome any questions you may have about our comments or any other aspect of our review. Feel free to call us at the telephone numbers listed at the end of this letter.

FORM S-1

Critical accounting policies and estimates

Accrued expenses, page 44

1. We note your response to comment 24. Please confirm that when assessing the materiality of the change in estimates on your results of operations, you are assessing it against net income. In addition, please confirm that if the change in estimate becomes material, you will include a sensitivity analysis depicting reasonably likely changes in these estimates.

Stock based compensation, page 45

2. We note your response to comment 25 and reissue our comment. Once an IPO price is determined, please disclose the significant factors contributing to the difference between the fair value as of the date of each grant and the estimated IPO price.
3. We note your response to comment 27. Please tell us why you believe the median valuation of the peer group is a more appropriate measure than the mean valuation. Please provide us an analysis of the valuations of comparable companies that supports your response.
4. Please tell us if the venture capital rate of return studies which provide the range of 25% to 35% consider just developmental stage companies in the biotechnology industry or companies in all industries at the same stage of development.

Patents and Other Proprietary Rights, page 60

5. Please revise the discussion of the agreement with Harvard University to quantify the minimum royalty and maintenance payments and to describe the milestones you are required to achieve in order to avoid termination.

Note 6. Redeemable convertible preferred stock, page F-24

5. We note your response to comment 42. We will defer evaluation of your response until after your IPO price has been set. Please disclose in a subsequent event note your anticipated beneficial conversion feature based on your proposed IPO price and provide us an analysis of how the amount was calculated.

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As appropriate, please amend your registration statement in response to these comments. You may wish to provide us with marked copies of the amendment to expedite our review. Please furnish a cover letter with your amendment that keys your responses to our comments and provides any requested information. Detailed cover letters greatly facilitate our review. Please understand that we may have additional comments after reviewing your amendment and responses to our comments.

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 all information required under the Securities Act of 1933 and that they have provided all information investors require

for an informed investment decision. 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 the company requests acceleration of the effective date of the pending registration statement, it should furnish a letter, at the time of such request, 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.

In addition, please be advised that the Division of Enforcement has access to all information you provide to the staff of the Division of Corporation Finance in connection with our review of your filing or in response to our comments on your filing.

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. We will act on the request and, pursuant to delegated authority, grant acceleration of the effective date.

We direct your attention to Rules 460 and 461 regarding requesting acceleration of a registration statement. Please allow adequate time after the filing of any amendment for further review before submitting a request for acceleration. Please provide this request at least two business days in advance of the requested effective date.

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You may contact Dana Hartz at (202) 551-3648 or Mary Mast at (202) 551-3613 if you have questions regarding comments on the financial statements and related matters. Please contact John Krug at (202) 551-3862, Suzanne Hayes, Branch Chief, at (202) 551- 3675, or me at (202) 551-3715 with any other questions.

Sincerely,

Jeffrey Riedler
Assistant Director

cc: Marc Rubenstein, Esq.
Richard D. Truesdell, Jr., Esq.