

Mail Stop 6010

July 26, 2006

C. Randall Mills, Ph.D.  
President and Chief Executive Officer  
Osiris Therapeutics, Inc.  
2001 Aliceanna Street  
Baltimore, MD 21231

**Re: Osiris Therapeutics, Inc.**  
**File No. 333-134037**  
**Filed May 12, 2006**

Dear Dr. Mills:

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 supplemental information so we may better understand your disclosure. After reviewing this information, we may or may not 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 on any other aspect of our review. Feel free to call us at the telephone numbers listed at the end of this letter.

General

Management's Discussion and Analysis of Financial Condition and Results of Operations, page 36

1. Please refer to our request in comment 10 of our letter dated June 28, 2006 for disclosure of the expected effect on your results of operations of recording the beneficial conversion feature. Please tell us what date you are using for the commitment date and how that date is in accordance with paragraph 16 of EITF 00-27. We note that the conversion rate is based on a percentage of an IPO. Please provide us a calculation of the beneficial conversion feature based on the estimated IPO share price as originally requested.

2. You state that you commissioned an independent valuation expert on February 9, 2006. Please either delete reference to the valuation expert or include a consent in the filing.

As appropriate, please amend your filing 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 supplemental information. Detailed cover letters greatly facilitate our review. Please file your cover letter on EDGAR under the form type label CORRESP. Please understand that we may have additional comments after reviewing your amendment and responses to our comments.

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.

You may contact Joe Roesler at (202) 551-3628 if you have questions regarding comments on the financial statements and related matters. Please contact Zafar Hasan at (202) 551-3653 or me at (202) 551-3715 with any other questions.

Sincerely,

Jeffrey Riedler  
Assistant Director

cc: Justin Klein  
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