

Mail Stop 6010

December 21, 2007

Christopher J. Calhoun, Chief Executive Officer
Cytori Therapeutics, Inc.
3020 Callan Road
San Diego, California 92121

Via U S Mail and FAX [(858) 458-0994]

**Re: Cytori Therapeutics, Inc.
Form 10-K for the fiscal year ended December 31, 2006
File No. 0-32501**

Dear Mr. Calhoun:

We have reviewed the information and proposed disclosures filed on October 18, 2007 and have the following additional comment. We have limited our review to only your financial statements and related disclosures and will make no further review of your documents. Where indicated, we think you should revise your documents in response to this comment in all future filings with the Commission. If you disagree, we will consider your explanation as to why our comment is inapplicable or a revision is unnecessary. 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 comment or on any other aspect of our review. Feel free to call us at the telephone numbers listed at the end of this letter.

Mr. Christopher J. Calhoun

Form 10-K for the fiscal year ended December 31, 2006

1. We refer to your response to comment 3 from our letter dated September 27, 2007. Please expand future filings to further explain:
 - Why you believe the proportional performance methodology is appropriate in your circumstances.
 - How you identified the milestones, how they are consistent with the underlying agreements and why you believe they are substantive.
 - Why you believe the relative values assigned to those milestones are appropriate, including a description of the objective evidence you considered in measuring those values.
 - Why you believe the costs to be incurred in achieving the various milestones are subject to reasonable estimation.

You indicate that the values assigned to the milestones involved substantial judgment. Please provide clear disclosure of all significant assumptions and judgments on which these subjective allocations were based.

As appropriate, please respond to this comment within 10 business days or tell us when you will provide us with a response. Please furnish a response letter that keys your response to our comment and provides the requested information. Confirm that you will comply with this comment in all future filings with the Commission. Detailed response letters greatly facilitate our review. Please understand that we may have additional comments after reviewing your responses to our comments and the requested information.

You may contact Jeanne Bennett at (202) 551-3606, or me at (202) 551-3676 if you have questions regarding our comments. In our absence you may contact Martin F. James, Senior Assistant Chief Accountant at (202) 551-3671.

Sincerely,

Brian R. Cascio
Accounting Branch Chief