

April 11, 2006

Dr. Jonathan Lewis  
Chief Executive Officer  
ZIOPHARM Oncology, Inc.  
1180 Avenue of the Americas, 19th Floor  
New York, NY 10036

Re: ZIOPHARM Oncology, Inc.  
Post-effective amendment to Form SB-2  
Filed April 3, 2006  
File No. 333-129680

Dear Dr. Lewis:

We have reviewed your filing and have the following comment. Where indicated, we think you should revise your document in response to the comment. 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.

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.

1. We note that Item 8A of your Form 10-KSB for the year ended December 31, 2005 includes the following disclosure:

Based on this evaluation, our Chief Executive Officer and Treasurer concluded that, while our disclosure controls and procedures are effective in timely alerting them to material information required to be included in our periodic filings with the SEC, there is a lack of segregation of duties at our company due to the limited number of employees dealing with general administrative and financial matters. At this time management believes that, given the individuals involved and the control procedures in place, the risks associated with such lack of segregation are not considered significant, and that the potential benefits of adding additional employees to segregate duties more clearly do not currently justify the associated added expense. However, management will reevaluate the situation periodically and will mitigate the current lack of segregation of duties within the general administrative functions if it believes the risks from such lack of segregation have increased or when additional capital is secured.

All of the text following ". . . periodic filings with the SEC" appears to qualify the conclusion that the disclosure controls and procedures are effective. Please either delete the text or state that management concluded the disclosure controls and procedures are ineffective.

As appropriate, please amend your filing in response to this comment. 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 response to our comment 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 response to our comment.

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.

Before the amended registration statement is declared effective pursuant to Section 8 of the Securities Act, the company should provide us with a letter, 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.

Please contact Greg Belliston at (202) 551-3861 or me at (202) 551-3715 with any questions.

Sincerely,

Jeffrey P. Riedler  
Assistant Director

cc: William M. Mower, Esq.  
Alan M. Gilbert, Esq.  
Maslon Edelman Borman & Brand, LLP  
90 South 7th Street, Suite 3300  
Minneapolis, Minnesota 55402

??

??

??

??

Dr. Jonathan Lewis  
ZIOPHARM Oncology, Inc.  
April 11, 2006  
Page 1