

Mail Stop 6010

March 4, 2008

Francis E. O'Donnell, Jr., M.D.
Chief Executive Officer
Accentia Biopharmaceuticals, Inc.
324 South Hyde Park Avenue, Suite 350
Tampa, Florida 33606

**Re: Accentia Biopharmaceuticals, Inc.
Registration Statement on Form S-3
Filed February 4, 2008
File No. 333-149045**

Dear Dr. O'Donnell, Jr.:

We have limited our review of your filing to the issues we have addressed in our 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.

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.

General

1. Please note that we will not be in a position to declare your registration statement effective until the comments on Biovest International's Form 10-K have been cleared and their effects on your Form 10-K have been ascertained.
2. We note your response to our prior comment 1. Given the nature of the current offering and of the two prior convertible debenture offerings, and the fact that the selling shareholders have not sold substantially all of the shares registered for sale under the prior registration statements, we believe that the current registration statement and the two that were declared effective on November 17, 2006 and May 14, 2007, respectively, are not separate transactions. Therefore, the number of shares registered in all three of those registration statements should be

aggregated for purposes of determining whether the total number of shares exceeds 33% of the total outstanding shares of the company held by non-affiliates. Given the aggregate size of the offerings relative to the number of shares outstanding held by non-affiliates, the nature of the offerings and the selling shareholders, the transaction appears to be a primary offering. Because you are not eligible to conduct a primary offering on Form S-3, you are not eligible to conduct a primary at-the-market offering under rule 415(a)(4).

Please withdraw your registration statement. You are not eligible to conduct the offering on a delayed or continuous basis under Rule 415(a)(1)(x). Therefore, you may register the offering only after the common stock underlying the preferred stock and the warrants has been issued.

3. We note that you disclosed on the cover of your last annual report on Form 10-K that as of March 30, 2007, the aggregate market value of the voting stock held by non-affiliates was approximately \$33,653,192. Based on a closing price of \$3.15 per share on March 30, 2007, that would result in approximately 10.7 million shares held by non-affiliates. We note that in response to comments 7 and 8 you indicated that the company had 21,951,502 shares held by non-affiliates prior to the February 2007 financing and 27,814,645 shares held by non-affiliates prior to the January 2008 financing. Supplementally, please explain why the number of shares held by non-affiliates decreased by more than 10 million shares from February 2007 to March 30, 2007, and then increased by more than 17 million shares from March 30, 2007 to January 2008.
4. Please revise your prospectus to include the information provided in response to our prior comments 2 through 10.

Payments to the investors and affiliates

5. We note your response to comment 3. However, our comment requested that you disclose the dollar amount of all payments you have made or may be required to make. Please revise to quantify the potential liquidated damage payments. Additionally, revise the table presented in response to comment 6 to include this amount.

Prior transactions between the issuer and the selling shareholders

6. Please revise the table presented in Appendix A to fit one page. The table should present information about prior transactions. Therefore, information about the current transaction is not necessary in this table. The table should include the textual information included in your response to comment 7. Including a separate line item for transaction and each selling shareholder may result in a table that is

Francis E. O'Donnell, Jr., M.D.
Accentia Biopharmaceuticals, Inc.
March 4, 2008
Page 3

easier to read. Additionally, it is not necessary to include selling shareholders who did not participate in prior transaction in the table.

Comparison of registered shares to outstanding shares

7. Please revise to present this information for each selling shareholder, rather than presenting the information in the aggregate.

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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 response 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.

Please contact Sebastian Gomez Abero at (202) 551-3578, Suzanne Hayes, Legal Branch Chief, at (202) 551-3675 or me at (202) 551-3715 with any questions.

Sincerely,

Jeffrey P. Riedler
Assistant Director

cc: Barry I. Grossman, Esq.
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