

Mail Stop 6010

September 11, 2008

Trevor Phillips, Ph.D.  
President and Chief Executive Officer  
Critical Therapeutics, Inc.  
60 Westview Street  
Lexington, MA 02421

Re: Critical Therapeutics, Inc.  
Registration Statement on Form S-4/A  
Filed August 28, 2008  
File No. 333-152442

Dear Dr. Phillips:

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-4/A

The Merger, page 94

Background of the Merger, page 94

1. Please provide more information about the financial models for each company and the pro forma models which were discussed in the March 25, 2008 telephone conference as disclosed on pages 98 and 103.

Cornerstone's Background of the Merger, page 101

2. It appears that this section which is largely duplicative of the information provided on pages 94 to 101. Please revise to discuss meetings of the board of directors of Cornerstone, meetings between Cornerstone and its financial advisor or any other similar meetings that took place that are materially related to this transaction that have not yet been disclosed.

Opinion of Critical Therapeutics' Financial Advisor, page 112

3. We are re-issuing prior comment 66 as we note you are qualifying your disclosure by reference to the full text of Lazard's opinion. Please revise your disclosure in your second paragraph to clarify that your disclosure summaries all material terms of Lazard's opinion.

Selected Publicly Traded Companies Analysis, page 115

4. We note that in response to prior comment 68, you disclosed the range of the enterprise values for each of the comparable companies selected for review in the analyses. If you are going to disclose a range, please also disclose the median and mean of the range. Alternatively, please disclose each of the enterprise values of the selected companies. Similarly, please revise the Critical Therapeutics' analyses as appropriate.

Interests of Cornerstone's Directors and Executive Officers in the Merger, page 122

Noteholder Agreement with Carolina Pharmaceuticals, page 124

5. It appears from your response to prior comment 73 that the shares held by Carolina Pharmaceuticals are beneficially owned by Mr. Collard. If true, please revise your tables on pages 9 and 123 to indicate that these shares will also be beneficially owned by Mr. Collard once the note is converted.

Critical Therapeutics, Business

Collaborations, page 167

6. We acknowledge your response to prior comment 77. Please address the following items:
  - Tell us why EITF 02-16 was considered to be the applicable accounting literature for the recognition of the \$12 million deferred co-promotion fees. Please tell us how you considered yourself the customer and DEY the vendor in the arrangement, and

- Provide us with analysis of your gross revenue recognition presentation for the Zyflo and Zyflo Cr product sales. Please refer to EITF 00-19, and
- Disclose the amount of co-promotion fees paid to DEY for the periods presented.

Critical Therapeutics, Management's Discussion and Analysis of Financial Condition and Results of Operations, page 231

Financial Operations Overview, page 233

Critical Accounting Policies, page 237

Revenue Recognition, page 237

7. Please disclose what measures are used to calculate the revenue for the MedImmune and Beckman Coulter arrangements under the proportional performance method. Disclose the adjustments recorded for delays or acceleration in the development of the product, if material, and disclose the method used by management to determine the adjustment.

Cornerstone's Management's Discussion and Analysis of Financial Condition and Results of Operations, page 263

Critical Accounting Estimates, page 271

Revenue Recognition, page 271

8. Disclose the credit terms you offer to your customers and, if day's sales in accounts receivable exceeds your credit terms, fully explain why.

Unaudited Pro Forma Condensed Combined Financial Information, page 310

Notes to Unaudited Pro Forma Condensed Combined Financial Statements, page 316

9. To assist investors in analyzing the future prospects of the company, consider including forecast data to present the effect of the supply chain issues experienced in the quarter ended June 30, 2008.

(2) Purchase Price, page 314

10. Your determination of the purchase price based on the fair value of Critical Therapeutics' common stock at April 30, 2008 does not seem to be in compliance with the provisions of SFAS 141(r) – please explain why the use of this measurement date was considered appropriate.

Consolidated Financial Statements, Cornerstone Biopharma Holdings, Inc

11. Please include consolidated statements of stockholders' deficit and other comprehensive income/loss in your unaudited interim financial statements. The information may be presented in a note to the financial statements.

Consolidated Statement of Operations, page F-54

12. Refer to your response to comment 106. SAB Topic 11:B allows for the exclusion of depreciation, depletion and amortization of property, plant and equipment from cost of product sales but it does not allow for the exclusion of amortization of product rights from product sales. Please revise your consolidated statements of operations to present the amortization of product rights in cost of product sales as appropriate.

Consolidated Statements of Cash flows, page F-56

13. Refer to your response to comment 105. It is uncertain why you consider Auriga to be a related party as defined by SFAS 57, given the small ownership percentages disclosed on page 295. Please change the caption "Amounts due from related parties" within the cash flows from operating activities if you conclude that Auriga is not a related party as defined by SFAS 57.

Notes to Consolidated Financial Statements, page F-58

Note 1: Summary of Significant Accounting Policies, page F-58

Stock-Based Compensation, page F-63

14. In light of your response to comment 108, please disclose the reasons why it is not practicable to estimate the expected volatility of your share price based on company data as required by paragraph 240(e)(2)(b) of SFAS 123(r). Disclose the names of the companies that you used as comparables.
15. Please refer to your response to comments 110 and 111. Please include a tabular presentation of all equity instruments granted during the periods presented. For each grant date, disclose the number of options or shares granted, the exercise price, the fair value of the common stock, and the intrinsic value, if any, per equity instrument granted.
16. With respect to your stock valuations, please clarify that the valuations performed by the board at the time of each issuance date were done contemporaneously. Disclose the significant factors that the board deemed relevant at the time of each

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Page 5

issuance date of an equity instrument. Discuss the reason management chose not to obtain a contemporaneous valuation by an unrelated valuation specialist. Please provide in Note 13: Subsequent Events the information in the table for any grants or equity issuances up until the time of effectiveness of your registration statement.

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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 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 Ibolya Ignat at (202) 551-3656 or Joel Parker at (202) 551-3651 if you have questions regarding comments on the financial statements and related matters. Please contact Jennifer Riegel at (202) 551-3575, Michael Reedich at (202) 551-3612 or me at (202) 551-3715 with any other questions.

Sincerely,

Jeffrey Riedler  
Assistant Director

cc: Steven D. Singer, Esq.  
Michael J. LaCascia, Esq.  
Brian A. Johnson, Esq.  
Wilmer Cutler Pickering Hale and Dorr LLP  
399 Park Avenue  
New York, NY 10022