

Mail Stop 6010

May 25, 2006

Michael D. Kishbauch  
President and Chief Executive Officer  
Achillion Pharmaceuticals, Inc.  
300 George Street  
New Haven, Connecticut 06511

**Re: Achillion Pharmaceuticals, Inc.  
Registration Statement on Form S-1, Amendment 1  
Filed May 17, 2006  
File No. 333-132921**

Dear Mr. Kishbauch:

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-1

General

1. We note your response to comment 6. Please note we will not be able to return the materials submitted in response to this comment. We must retain them as part of our permanent file.

Business

Gilead Sciences, page 64

2. We note your response to comment 21, and we reissue the comment in part.
  - Please quantify the cap on costs related to the research program through proof-of-concept. This figure appears to be material because you will be entirely responsible for any expenses you incur that exceed this amount.
  - You should also disclose, as you state in your response letter, that the parties may agree to increase or decrease the dollar amount of the research cap.
  - Finally, disclose the amount spent to date on the research program so investors know how close you are to arriving at the cap.

Vion Pharmaceuticals/Yale University, page 65

3. We note the agreement's duration is based on the expiration of the last-to-expire patent. Please disclose when the last-to-expire patent is currently scheduled to expire. Please also disclose this information with respect to the agreements with Emory University and University of Maryland Baltimore County.

Emory University, page 65

4. We note the revisions you made pursuant to comment 24, and we reissue the comment in part. Please disclose the dollar amounts of the license maintenance payments, as set forth in section 3.3 of your agreement with Emory, which is filed as exhibit 10.3.

Note 10. Common Stock, Stock Options and Warrants, page F-21

5. We note your response to comment number 30. We will defer evaluation of your response until the initial public offering price is determined.

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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

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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 Dana Hartz at (202) 551-3648 or Mary Mast at (202) 551-3613 if you have questions regarding comments on the financial statements and related matters. Please contact Greg Belliston at (202) 551-3861 or me at (202) 551-3715 with any other questions.

Sincerely,

Jeffrey Riedler  
Assistant Director

cc: Steven D. Singer, Esq.  
Wilmer Cutler Pickering Hale and Dorr LLP  
60 State Street  
Boston, MA 02109