

Mail Stop 6010

September 28, 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 4
Filed September 22, 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

Note 9 Preferred Stock, page F-19

1. Please expand your disclosure to discuss your preferred stock issuances during 2006. Specifically disclose the number of shares, the price per share and the total proceeds for each offering.

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

2. Please provide a revised discussion that addresses the factors that attributed to the increase in the fair value of the underlying stock from \$4.00(post split) at December 31, 2005 to the proposed IPO price of \$15.00.
3. Please clarify that the valuations done were contemporaneous at the time of issuance.

Exhibit 23

4. Refer to comment 18 in our letter dated April 27, 2006. Please provide a currently dated consent from your unrelated third-party valuation firm in the amendment for which you will request effectiveness.
5. Please provide an auditors' opinion with your amendment for which you will request effectiveness that removes the restrictive language in the first paragraph of the opinion.

* * *

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 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

Michael D. Kishbauch
Achillion Pharmaceuticals, Inc.
September 7, 2006
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cc: Steven D. Singer, Esq.
Wilmer Cutler Pickering Hale and Dorr LLP
60 State Street
Boston, MA 02109