

Via Facsimile and U.S. Mail
Mail Stop 6010

November 28, 2007

Mr. Donald deBethizy
Chief Executive Officer and President
Targacept, Inc.
200 East First Street, Suite 300
Winston-Salem, NC 27101

Re: Targacept, Inc.
Form 10-K for the Year Ended December 31, 2006
Filed March 22, 2007
Form 10-Q for the Quarterly Period Ended September 30, 2007
Filed November 9, 2007
File No. 000-51173

Dear Mr. deBethizy:

We have reviewed your filing and have the following comments. In our comments, we ask you to provide us with information to better understand your disclosure. Where a comment requests you to revise disclosure, the information you provide should show us what the revised disclosure will look like and identify the annual or quarterly filing, as applicable, in which you intend to first include it. If you do not believe that revised disclosure is necessary, explain the reason in your response. After reviewing the information provided, we may raise additional comments and/or request that you amend your filing.

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 on any other aspect of our review. Feel free to call us at the telephone numbers listed at the end of this letter.

Mr. Donald deBethizy
Targacept, Inc.
November 28, 2007
Page 2

Form 10-K for the Year Ended December 31, 2006

Item 8. Financial Statements and Supplementary Data, page 75

Notes to Financial Statements, page 82

15. Collaborative Research and license Agreements, page 101

AstraZeneca AB, page 101

1. Please tell us the facts and circumstances that determined the \$20 million milestone to be (1) substantive; and (2) reasonable in relation to the effort expended, in accordance with your revenue recognition policy. As the \$20 million milestone was paid to you merely upon AstraZeneca deciding to pursue development of AZD3480, tell us what consideration you gave to this milestone being in substance part of the “remaining \$5 million of the initial fee” that was deferred.
2. Please tell us why the maximum potential payment that may be received under your collaboration agreement with AstraZeneca AB of \$249 million was not audited.

Form 10-Q for the Quarterly Period Ended September 30, 2007

4. Collaborative Research and License Agreements, page 10

AstraZeneca AB, page 10

3. Please tell us, why under GAAP, you:
 - deferred the preclinical research revenues prior to AstraZeneca’s decision to pursue development of AZD3480; and
 - recognized all the deferred amounts at the time of AstraZeneca’s decision.

* * * *

Please respond to these comments within 10 business days or tell us when you will provide us with a response. Please furnish a letter that keys your responses to our comments and provide the requested information. Detailed letters greatly facilitate our review. Please furnish your letter on EDGAR under the form type label CORRESP.

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 Exchange Act of 1934 and that they have provided all information

Mr. Donald deBethizy
Targacept, Inc.
November 28, 2007
Page 3

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.

In connection with responding to our comments, please provide, in your letter, a statement from the company acknowledging that:

- the company is responsible for the adequacy and accuracy of the disclosure in the filing;
- staff comments or changes to disclosure in response to staff comments do not foreclose the Commission from taking any action with respect to the filing; and
- the company may not assert staff comments 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 our review of your filing or in response to our comment on your filing.

You may contact Kei Ino, Staff Accountant, at (202) 551-3659 or Jim Atkinson, Accounting Branch Chief, at (202) 551-3674 if you have questions regarding the comments. In this regard, do not hesitate to contact me, at (202) 551-3679.

Sincerely,

Jim B. Rosenberg
Senior Assistant Chief Accountant