



DIVISION OF
CORPORATION FINANCE

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549

September 24, 2010

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

Re: Targacept, Inc.
Form 10-K for the Fiscal Year Ended December 31, 2009
Filed March 11, 2010
File No. 000-51173

Definitive Proxy Statement
Filed April 16, 2010

Dear Dr. deBethizy

We have reviewed your supplemental response dated September 23, 2010 to our comment letter dated September 13, 2010 and have the following comment.

Please respond to this letter within ten business days by providing the requested information, or by advising us when you will provide the requested response. If you do not believe our comment applies to your facts and circumstances, please tell us why in your response.

After reviewing the information you provide in response to this comment, we may have additional comments.

Definitive Proxy Statement

Cash Incentive Bonus, page 27

1. We note your response to comment four. Unless you can provide an unqualified representation that you will disclose the individual percentage weightings for each of your performance objectives, please provide a detailed competitive harm analysis in support of the omission of individual percentage weightings under Instruction 4 to Item 402(b) of Regulation S-K. Your analysis should identify the competitively harmful information and demonstrate how the information could be harmful to your company. To avoid the disclosure of the sensitive information in your analysis when our comment letters are released publicly, you should submit a confidential treatment request pursuant to Rule 83.

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Targacept, Inc.
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Please contact Bryan Pitko at (202) 551-3203 or Suzanne Hayes at (202) 551-3675 if you have any questions. In this regard, please also feel free to contact me at (202) 551-3715.

Sincerely,

Jeffrey Riedler
Assistant Director