



DIVISION OF
CORPORATION FINANCE

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

July 14, 2015

Via E-mail

Dr. Stephen A. Hill
President and Chief Executive Officer
Targacept, Inc.
100 North Main Street, Suite 1510
Winston-Salem, North Carolina 27101

**Re: Targacept, Inc.
Amendment No. 1 to Registration Statement on Form S-4
Filed July 1, 2015
File No. 333-204423**

Dear Dr. Hill:

We have reviewed your amended registration statement and have the following comments. In some of our comments, we may ask you to provide us with information so we may better understand your disclosure.

Please respond to this letter by amending your registration statement and providing the requested information. If you do not believe our comments apply to your facts and circumstances or do not believe an amendment is appropriate, please tell us why in your response.

After reviewing any amendment to your registration statement and the information you provide in response to these comments, we may have additional comments.

Material U.S. Federal Income Tax Consequences of the Merger to Holders of Catalyst Common Stock, page 100

1. We note that in the penultimate paragraph on page 100 the registrant includes four bulleted material tax consequences of the merger to Catalyst shareholders assuming that the merger will be treated for U.S. federal income tax purposes as a reorganization. It is inappropriate to assume any legal conclusion underlying the tax opinion and it is not sufficient to disclose that Targacept and Catalyst intend the tax consequences set forth in this paragraph. Please replace this language by identifying tax counsel who has rendered its opinion that the merger will be treated as a reorganization and that the corresponding material tax effects of the merger to Catalyst shareholders will occur.

Tax Consequences of the Pre-Closing Dividend, page 103

Treatment of the Pre-Closing Dividend and the Reverse Stock Split as a Single Recapitalization, page 103-104

Material U.S. Federal Income Tax Consequences of the Ownership of the Redeemable Convertible Preferred Notes pages 107-111

Material U.S. Federal Income Tax Consequences of the Reverse Stock Split, pages 180-182

2. Please identify counsel who has rendered its opinion as to the material tax consequences disclosed in each section referenced above and indicate in each of these sections that the accompanying discussion of material tax consequences constitutes the opinion of counsel.

Principal Effects of the Reverse Stock Split, pages 178-179

3. Please clarify whether the reverse stock split will be necessary in order to effect the merger and issue the Convertible Notes that are a component of the Pre-Closing Dividend.
4. Please expand this section to state whether the authorized common stock will be reduced in proportion to the reverse stock split. If not, disclose that one of the effects of the reverse stock split will be to increase the number of authorized unissued shares and that these shares will be available for issuance without further shareholder approval unless required by law. Please disclose assuming the ratio is 2 and the ratio is 10 the following:
 - the number of authorized shares;
 - the number of shares that will be issued after the merger is completed;
 - the number of shares that will be reserved under the terms of the all convertibles including the Convertible Notes, warrants, options or other contractual obligations; and
 - the number of authorized shares that will unreserved and available for issuance.
5. Also, indicate whether the registrant has any additional plans, arrangements or understandings to issue shares that will be available and unreserved after the completion of the transactions described in the prospectus. If so, please provide appropriate disclosure.

Exhibit 8.1

6. Please expand the text of the opinion to identify the two additional sections referenced in the previous comment (i.e. Treatment of the Pre-Closing Dividend and the Reverse Stock Split as a Single Recapitalization on page 103-104 and Material U.S. Federal Income Tax Consequences of the Reverse Stock Split, pages 180-182).

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7. Tax counsel should expand the last paragraph of the opinion to provide its consent to each reference to its name in the prospectus regarding the material tax effects of the transaction to shareholders of Targacept and to the inclusion of its tax opinion in the prospectus disclosure.

Exhibit 8.2

8. Tax counsel should eliminate the penultimate paragraph of the tax opinion. The shareholders of Catalyst are entitled to rely upon the opinion and disclosure attributable to tax counsel in the prospectus.
9. Tax counsel should expand the last paragraph of the opinion to provide its consent to each reference to its name in the prospectus regarding the material tax effects of the transaction to shareholders of Catalyst and to the inclusion of its tax opinion in the prospectus disclosure.

You may contact Vanessa Robertson at (202) 551-3649 or Joel Parker at (202) 551-3651 if you have questions regarding comments on the financial statements and related matters. Please contact Scot Foley at (202) 551-3383 or me at (202) 551-3715 with any other questions.

Sincerely,

/s/ Jeffrey P. Riedler

Jeffrey P. Riedler
Assistant Director

cc: Megan N. Gates, Esq.
Marc D. Mantell, Esq.
Mintz, Levin, Cohn, Ferris, Glovsky and Popeo, P.C.
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