

STATEMENT OF CHANGES IN BENEFICIAL OWNERSHIP

Check this box if no longer subject to Section 16. Form 4 or Form 5 obligations may continue. See Instruction 1(b).

Filed pursuant to Section 16(a) of the Securities Exchange Act of 1934 or Section 30(h) of the Investment Company Act of 1940

| OMB APPROVAL | |
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|--|--|---|
| 1. Name and Address of Reporting Person* <u>DUNTON ALAN W</u> (Last) (First) (Middle) <u>C/O TARGACEPT, INC.</u> <u>200 EAST FIRST STREET, SUITE 300</u> (Street) <u>WINSTON- SALEM NC 27101</u> (City) (State) (Zip) | 2. Issuer Name and Ticker or Trading Symbol <u>TARGACEPT INC [TRGT]</u> | 5. Relationship of Reporting Person(s) to Issuer (Check all applicable) <input checked="" type="checkbox"/> Director 10% Owner Officer (give title below) Other (specify below) |
| | 3. Date of Earliest Transaction (Month/Day/Year) <u>10/25/2006</u> | |

Table I - Non-Derivative Securities Acquired, Disposed of, or Beneficially Owned

| 1. Title of Security (Instr. 3) | 2. Transaction Date (Month/Day/Year) | 2A. Deemed Execution Date, if any (Month/Day/Year) | 3. Transaction Code (Instr. 8) | | 4. Securities Acquired (A) or Disposed Of (D) (Instr. 3, 4 and 5) | | | 5. Amount of Securities Beneficially Owned Following Reported Transaction(s) (Instr. 3 and 4) | 6. Ownership Form: Direct (D) or Indirect (I) (Instr. 4) | 7. Nature of Indirect Beneficial Ownership (Instr. 4) |
|---------------------------------|--------------------------------------|--|--------------------------------|---|---|------------|-------|---|--|---|
| | | | Code | V | Amount | (A) or (D) | Price | | | |

Table II - Derivative Securities Acquired, Disposed of, or Beneficially Owned (e.g., puts, calls, warrants, options, convertible securities)

| 1. Title of Derivative Security (Instr. 3) | 2. Conversion or Exercise Price of Derivative Security | 3. Transaction Date (Month/Day/Year) | 3A. Deemed Execution Date, if any (Month/Day/Year) | 4. Transaction Code (Instr. 8) | | 5. Number of Derivative Securities Acquired (A) or Disposed of (D) (Instr. 3, 4 and 5) | | 6. Date Exercisable and Expiration Date (Month/Day/Year) | | 7. Title and Amount of Securities Underlying Derivative Security (Instr. 3 and 4) | 8. Price of Derivative Security (Instr. 5) | 9. Number of derivative Securities Beneficially Owned Following Reported Transaction(s) (Instr. 4) | 10. Ownership Form: Direct (D) or Indirect (I) (Instr. 4) | 11. Nature of Indirect Beneficial Ownership (Instr. 4) | |
|--|--|--------------------------------------|--|--------------------------------|---|--|-----|--|-----------------|---|--|--|---|--|-------|
| | | | | Code | V | (A) | (D) | Date Exercisable | Expiration Date | | | | | | Title |
| Stock option (right to buy) | \$5.69 | 10/25/2006 | | A | | 25,000 | | (I) | 10/24/2016 | Common Stock | 25,000 | \$0 | 25,000 | D | |

Explanation of Responses:

1. This option vests one-third on the first anniversary of the date of grant and the remaining two-thirds in pro rata quarterly installments over the second and third years after the date of grant.

Remarks:

This amendment is filed solely to include the attached Power of Attorney, which was inadvertently not attached to the original Form 4 filed by the reporting person.

/s/ Peter A. Zorn, Attorney-in-Fact 03/07/2007

** Signature of Reporting Person Date

Reminder: Report on a separate line for each class of securities beneficially owned directly or indirectly.

* If the form is filed by more than one reporting person, see Instruction 4 (b)(v).

** Intentional misstatements or omissions of facts constitute Federal Criminal Violations See 18 U.S.C. 1001 and 15 U.S.C. 78ff(a).

Note: File three copies of this Form, one of which must be manually signed. If space is insufficient, see Instruction 6 for procedure.

Persons who respond to the collection of information contained in this form are not required to respond unless the form displays a currently valid OMB Number.

Securities and Exchange Commission
Judiciary Plaza
450 Fifth Street, N.W.
Washington, DC 20549

Re: Targacept, Inc.

Gentlemen:

Pursuant to General Instruction 7 to Form 3 (Initial Statement of Beneficial Ownership), Form 4 (Statement of Changes in Beneficial Ownership) and Form 5 (Annual Statement of Changes in Beneficial Ownership) promulgated by the Securities and Exchange Commission pursuant to Section 16 of the Securities Exchange Act of 1934, the undersigned director, officer and/or shareholder of Targacept, Inc. (the "Company") hereby authorizes and designates Peter A. Zorn, Mauri K. Hodges, and Alan A. Musso, and each of them, to execute and file with the Commission on his behalf any and all statements on Form 3, Form 4 or Form 5 relating to his beneficial ownership of securities of the Company as required by Section 16(a) of the Securities Exchange Act of 1934 and the rules of the Commission promulgated thereunder. This authorization and designation shall be effective for so long as the undersigned remains subject to the provisions of Section 16 of the Securities Exchange Act of 1934.

Effective as of October 25, 2006.

/s/ Alan W. Dunton

Alan W. Dunton
