

## INITIAL STATEMENT OF BENEFICIAL OWNERSHIP OF SECURITIES

OMB APPROVAL

OMB Number: 3235-0104

Estimated average burden

hours per response: 0.5

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

<b>1. Name and Address of Reporting Person*</b> <u>BURRILL STEVEN</u> <hr/> (Last) (First) (Middle) <u>ONE EMBARCADERO CENTER</u> <u>SUITE 2700</u> <hr/> (Street) <u>SAN FRANCISCO CA 94111</u> <hr/> (City) (State) (Zip)	<b>2. Date of Event Requiring Statement (Month/Day/Year)</b> 08/16/2006	<b>3. Issuer Name and Ticker or Trading Symbol</b> <u>TARGACEPT INC [ TRGT ]</u>		<b>4. Relationship of Reporting Person(s) to Issuer (Check all applicable)</b> <input checked="" type="checkbox"/> Director 10% Owner Officer (give title below) Other (specify below)	<b>5. If Amendment, Date of Original Filed (Month/Day/Year)</b>  <b>6. Individual or Joint/Group Filing (Check Applicable Line)</b> <input checked="" type="checkbox"/> Form filed by One Reporting Person Form filed by More than One Reporting Person
--	--	---	--	--	---

### Table I - Non-Derivative Securities Beneficially Owned

1. Title of Security (Instr. 4)	2. Amount of Securities Beneficially Owned (Instr. 4)	3. Ownership Form: Direct (D) or Indirect (I) (Instr. 5)	4. Nature of Indirect Beneficial Ownership (Instr. 5)
Common Stock	778,062	I	By Burrill Biotechnology Capital Fund L.P. <sup>(1)</sup>
Common Stock	1,000	I	By Burrill & Company LLC <sup>(2)</sup>

### Table II - Derivative Securities Beneficially Owned (e.g., puts, calls, warrants, options, convertible securities)

1. Title of Derivative Security (Instr. 4)	2. Date Exercisable and Expiration Date (Month/Day/Year)		3. Title and Amount of Securities Underlying Derivative Security (Instr. 4)		4. Conversion or Exercise Price of Derivative Security	5. Ownership Form: Direct (D) or Indirect (I) (Instr. 5)	6. Nature of Indirect Beneficial Ownership (Instr. 5)
	Date Exercisable	Expiration Date	Title	Amount or Number of Shares			
Stock Option (Right to Buy)	08/08/2002	08/07/2012	Common Stock	4,333	0.075	I	By Burrill & Company LLC <sup>(2)</sup>
Stock Option (Right to Buy)	06/11/2004	06/10/2013	Common Stock	1,000	0.075	I	By Burrill & Company LLC <sup>(2)</sup>
Stock Option (Right to Buy)	06/07/2006	(3)	Common Stock	1,000	0.075	I	By Burrill & Company LLC <sup>(2)</sup>

**Explanation of Responses:**

1. The reporting person is the managing member of Burrill & Company (Biotechnology GP), LLC, the general partner of Burrill Biotechnology Capital Fund, L.P. The reporting person disclaims beneficial ownership of these securities except to the extent of his pecuniary interest therein.
2. The reporting person is the chief executive officer of Burrill & Company LLC. The reporting person disclaims beneficial ownership of these securities except to the extent of his pecuniary interest therein.
3. This stock option expires on the later of (a) the date that is two and one-half months following the end of the first taxable year of Burrill & Company LLC during which the option vests, or (b) the date that is two and one-half months following the end of the issuer's taxable year in which the option vests, and in no event after March 15, 2007.

**Remarks:**

/s/ G. Steven Burrill

08/18/2006

\*\* 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 5 (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 August 18, 2006.

/s/ G. Steven Burrill  
G. Steven Burrill

---