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

**SCHEDULE 13G**

**Under the Securities Exchange Act of 1934  
(Amendment No. 1)\***

**TARGACEPT, INC.**

(Name of Issuer)

**Common Stock**  
(Title of Class of Securities)

**87611R306**  
(CUSIP Number)

**December 31, 2008**  
(Date of Event Which Requires Filing of this Statement)

Check the appropriate box to designate the rule pursuant to which this Schedule is filed:

- Rule 13d-1(b)
- Rule 13d-1(c)
- Rule 13d-1(d)

\*The remainder of this cover page shall be filled out for a reporting person's initial filing on this form with respect to the subject class of securities, and for any subsequent amendment containing information which would alter the disclosures provided in a prior cover page.

The information required in the remainder of this cover page shall not be deemed to be "filed" for the purpose of Section 18 of the Securities Exchange Act of 1934 ("Act") or otherwise subject to the liabilities of that section of the Act but shall be subject to all other provisions of the Act (however, see the Notes).

This Amendment No. 1 amends and supplements the Statement on Schedule 13G electronically filed with the Securities and Exchange Commission (the "Commission") on August 01, 2007 with respect of the ownership of securities of Targacept, Inc. (the "Initial Statement").

The undersigned hereby amends and supplements Items 4 and 6 of Initial Statement with the following information (capitalized terms used herein without definition shall have the same meaning as set forth in the Initial Statement).

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CUSIP No. 87611R306

<b>1</b>	NAMES OF REPORTING PERSONS . I.R.S. Identification Nos. of above persons (entities only) GlaxoSmithKline plc	
<b>2</b>	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (SEE INSTRUCTIONS) (a) <input type="checkbox"/> (b) <input type="checkbox"/>	
<b>3</b>	SEC USE ONLY	
<b>4</b>	CITIZENSHIP OR PLACE OF ORGANIZATION England and Wales	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	<b>5</b>	SOLE VOTING POWER 1,424,176
	<b>6</b>	SHARED VOTING POWER -0-
	<b>7</b>	SOLE DISPOSITIVE POWER 1,424,176
	<b>8</b>	SHARED DISPOSITIVE POWER -0-
<b>9</b>	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 1,424,176	
<b>10</b>	CHECK IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES (SEE INSTRUCTIONS) <input type="checkbox"/>	
<b>11</b>	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (9) 5.7%	
<b>12</b>	TYPE OF REPORTING PERSON (SEE INSTRUCTIONS) CO	

**Item 1.**

(a) Name of Issuer

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(b) Address of Issuer's Principal Executive Offices

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**Item 2.**

(a) Name of Person Filing

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(b) Address of Principal Business Office or, if none, Residence

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(c) Citizenship

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(d) Title of Class of Securities

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(e) CUSIP Number

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**Item 3.** Not applicable.

**Item 4. Ownership**

The information in Items 1 and 5 through 11 on the cover pages (page 2) on Schedule 13G is hereby incorporated by reference.

**Item 5. Ownership of Five Percent or Less of a Class**

If this statement is being filed to report the fact that as of the date hereof the reporting person has ceased to be the beneficial owner of more than five percent of the class of securities, check the following o.

**Item 6. Ownership of More than Five Percent on Behalf of Another Person**

Shares held by following wholly-owned subsidiaries of Reporting Person:

Glaxo Group Limited	1,096,932
SmithKline Beecham Corporation	327,244

**Item 7. Identification and Classification of the Subsidiary Which Acquired the Security Being Reported on By the Parent Holding Company**

**Item 8. Identification and Classification of Members of the Group**

**Item 9. Notice of Dissolution of Group**

**Item 10. Certification**

By signing below I certify that, to the best of my knowledge and belief, the securities referred to above were acquired and are held in the ordinary course of business and were not acquired and not held for the purpose of or with the effect of changing or influencing the control of the issuer of the securities and were not acquired and are not held in connection with or as a participant in any transaction having that purpose or effect.

After reasonable inquiry and to the best of my knowledge and belief, I certify that the information set forth in this statement is true, complete and correct.

GlaxoSmithKline plc

By: /s/ Victoria Whyte

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Victoria Whyte  
Deputy Company Secretary