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

FORM 8-K

CURRENT REPORT

Pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934

Date of Report (Date of earliest event reported): April 10, 2012

TARGACEPT, INC.

(Exact name of registrant as specified in its charter)

Delaware	**000-51173**	**56-2020050**
(State or other jurisdiction of incorporation)	**(Commission File Number)**	**(IRS Employer Identification No.)**

200 East First Street, Suite 300 **Winston-Salem, North Carolina** **(Address of principal executive offices)**	**27101** **(Zip Code)**

(336) 480–2100
Registrant's telephone number, including area code

Check the appropriate box below if the Form 8-K filing is intended to simultaneously satisfy the filing obligation of the registrant under any of the following provisions:

☐ Written communications pursuant to Rule 425 under the Securities Act (17 CFR 230.425)

☐ Soliciting material pursuant to Rule 14a-12 under the Exchange Act (17 CFR 240.14a-12)

☐ Pre-commencement communications pursuant to Rule 14d-2(b) under the Exchange Act (17 CFR 240.14d-2(b))

☐ Pre-commencement communications pursuant to Rule 13e-4(c) under the Exchange Act (17 CFR 240.13e-4(c))

Item 8.01 Other Events.

On April 10, 2012, Targacept, Inc. issued a press release reporting revised top-line results from an exploratory Phase 2 clinical trial of TC-6987 in asthma. The full text of the press release is attached as Exhibit 99.1 to this Current Report on Form 8-K.

Item 9.01 Financial Statements and Exhibits.

(d) Exhibits

Exhibit Number	Description
99.1	Press release dated April 10, 2012

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned hereunto duly authorized.

TARGACEPT, INC.

Date: April 10, 2012

/s/ Peter A. Zorn

Peter A. Zorn
Senior Vice President, Legal Affairs, General Counsel and Secretary

EXHIBIT INDEX

Exhibit Number	Description
99.1	Press release dated April 10, 2012

Exhibit 99.1

Targacept Announces Revised Top-Line Results from Exploratory Phase 2 Study of TC-6987 in Asthma

Winston-Salem, NC – April 10, 2012—Targacept, Inc. (NASDAQ: TRGT), a clinical-stage biopharmaceutical company developing novel NNR Therapeutics™, today announced revised top-line results from its exploratory Phase 2 clinical study of TC-6987 in asthma.

Following identification of an error in the application of the agreed statistical analysis plan, a reanalysis of the data was undertaken. As shown in the table below, as compared to the initially reported values, the reanalysis revealed a 2 ml decrease in the change in Forced Expiratory Volume (FEV_1) from baseline to pre-dosing on day 28, which resulted in TC-6987 no longer achieving the study's protocol-defined success criteria on that co-primary endpoint. However, TC-6987 continued in the reanalysis to meet protocol-defined success criteria on the study's other co-primary endpoint, change in FEV_1 from baseline to two hours post-dosing on day 28. Reanalysis of the post-dose measure revealed an incrementally stronger signal of a drug effect than the initial analysis.

	Change in FEV_1 for Adjunct TC-6987 compared to Adjunct Placebo from Baseline to:			
	Pre-Dose on Day 28		Two hours Post-Dose on Day 28	
	Delta	*One-sided p-value*	*Delta*	*One-sided p-value*
Initial Analysis	51 ml	0.090	58 ml	0.070
Revised Analysis	49 ml	0.142	79 ml	0.052

"As I said previously, this exploratory study in asthma accomplished our goal of detecting in patients a signal of the potential of NNR Therapeutics in the treatment of disorders outside of the CNS. We are in the process of considering potential next steps for this compound and indication," said J. Donald deBethizy, Ph.D., Targacept's President and Chief Executive Officer. "We regret not having discovered the statistical analysis error initially."

About the Study

The study was a double blind, placebo controlled, parallel group Phase 2 trial conducted at 23 sites in the United States. The study enrolled 93 adult patients with persistent mild to moderate asthma that were being treated with inhaled corticosteroids, and 90 patients completed the study. The study design provided for a four-week wash-out period during which patients received a low-dose inhaled corticosteroid while discontinuing their current asthma medication (other than permitted rescue mediation). Patients were then randomized into one of two cohorts and received either placebo or oral TC-6987 once daily, together with the low-dose inhaled corticosteroid, for four weeks. Patients in the TC-6987 cohort received a 100mg dose the first day of dosing and then a 50mg dose for the remainder of the dosing period. The study concluded with a two-week follow-up period.

About Targacept

Targacept is developing a diverse pipeline of innovative NNR Therapeutics™ for difficult-to-treat diseases and disorders of the nervous system. NNR Therapeutics selectively modulate the activity of specific neuronal nicotinic receptors, unique proteins that regulate vital biological functions that are impaired in various disease states. Targacept's clinical pipeline includes multiple Phase 2 product candidates, all representing first-in-class opportunities. Targacept leverages its scientific leadership and proprietary drug discovery platform Pentad™ to generate novel small molecule product candidates to fuel its pipeline and attract significant collaborations with global pharmaceutical companies. For more information, please visit www.targacept.com.

TARGACEPT

Building Health, Restoring Independence®

Forward-Looking Statements

This press release includes "forward-looking statements" made under the provisions of the Private Securities Litigation Reform Act of 1995. Forward-looking statements include statements other than statements of historical fact regarding, without limitation: any future development of TC-6987 or of any other Targacept product candidate as a treatment for asthma; the use of NNR Therapeutics to treat non-central nervous system disorders; or Targacept's plans, expectations or future operations, financial position, revenues, costs or expenses. Actual results, performance or experience may differ materially from those expressed or implied by any forward-looking statement as a result of various important factors, including without limitation risks and uncertainties relating to: the conduct and results of any future clinical trials or non-clinical studies or assessments of TC-6987; whether positive findings from any completed clinical trial of TC-6987 will be replicated in any future clinical trials; Targacept's ability to protect its intellectual property related to TC-6987; and the timing and success of submission, acceptance and approval of any regulatory filings for TC-6987. Risks and uncertainties that Targacept faces are described in greater detail under the heading "Risk Factors" in Targacept's most recent Annual Report on Form 10-K and in other filings that it makes with the Securities and Exchange Commission. As a result of the risks and uncertainties, the results or events indicated by the forward-looking statements may not occur. Targacept cautions you not to place undue reliance on any forward-looking statement.

In addition, any forward-looking statement in this press release represents Targacept's views only as of the date of this press release and should not be relied upon as representing its views as of any subsequent date. Targacept disclaims any obligation to update any forward-looking statement, except as required by applicable law.

Contacts

Alan Musso, SVP, Finance and Administration and CFO
Targacept, Inc.
Tel: (336) 480-2186
Email: alan.musso@targacept.com

Michelle Linn
Linnden Communications
Tel: (508) 362-3087
Email: linnmich@comcast.net