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UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, DC 20549

FORM 10-Q

☒ **QUARTERLY REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the quarterly period ended June 30, 2012

or

☐ **TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the transition period from to

Commission File Number: 000-51173

Targacept, Inc.
(Exact Name of Registrant as Specified in its Charter)

Delaware	**56-2020050**
(State or other jurisdiction of incorporation or organization)	**(I.R.S. Employer Identification No.)**
200 East First Street, Suite 300 Winston-Salem, North Carolina	**27101**
(Address of principal executive offices)	**(Zip Code)**

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

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes ☒ No ☐

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T (§ 232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes ☒ No ☐

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or a smaller reporting company. See the definitions of "large accelerated filer," "accelerated filer" and "smaller reporting company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer	☐	Accelerated filer	☒
Non-accelerated filer	☐ (do not check if a smaller reporting company)	Smaller reporting company	☐

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). ☐ Yes ☒ No

As of July 31, 2012, the registrant had 33,430,481 shares of common stock, $0.001 par value per share, outstanding.

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TARGACEPT, INC.

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PART I. Financial Information

Cautionary Note Regarding Forward-Looking Statements

This quarterly report includes forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended, which we refer to as the Securities Act, and Section 21E of the Securities Exchange Act of 1934, as amended, which we refer to as the Exchange Act. For this purpose, any statement contained in this quarterly report, other than statements of historical fact, regarding, among other things:

- the progress, scope or duration of the development of TC-5619, AZD3480 (TC-1734), TC-5214, AZD1446 (TC-6683), TC-6987 or any of our other product candidates or programs, such as the target indication(s) for development, the size, design, population, location, conduct, objective, duration or endpoints of any clinical trial, or the timing for initiation or completion of or availability of results from any clinical trial, for submission or approval of any regulatory filing, for interactions with regulatory authorities or, where applicable, for a decision by AstraZeneca as to whether to conduct particular development;
- the benefits that may be derived from any of our product candidates or the commercial opportunity in any target indication;
- the timing or amount of any payments that AstraZeneca may make to us;
- our operations, financial position, revenues, costs or expenses; or
- our strategies, prospects, plans, expectations or objectives

is a forward-looking statement made under the provisions of The Private Securities Litigation Reform Act of 1995. In some cases, words such as “may,” “will,” “could,” “would,” “should,” “expect,” “intend,” “plan,” “anticipate,” “believe,” “estimate,” “predict,” “project,” “potential,” “continue,” “ongoing,” “scheduled” or other comparable words identify forward-looking statements. 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 our critical accounting policies and risks and uncertainties relating, among other things, to:

- whether positive findings from any completed clinical trial of TC-5619 will be replicated in ongoing or potential future clinical trials of TC-5619;
- whether the designs and endpoints of any future clinical trial of TC-5619 in a target indication will be deemed by applicable regulatory authorities to be sufficient to support regulatory approval of TC-5619 for that indication;
- our dependence on the success of our collaboration with AstraZeneca focused in cognitive disorders;
- the control or significant influence that AstraZeneca has over the development of AZD3480 and AZD1446, including as to the timing, scope and design of any future clinical trials and as to the conduct at all of further development of AZD1446 or of AZD3480 beyond our ongoing trial in mild to moderate Alzheimer’s disease;

- the impact of the restructuring announced by AstraZeneca in February 2012 on any future development of AZD1446 or AZD3480;
- our ability to manage any impact of our workforce reduction announced in April 2012 or the departure of three executive officers in the first half of 2012 on our operations and corporate culture;
- the conduct and results of clinical trials and non-clinical studies and assessments of any of our product candidates, including the performance of third parties engaged to execute them, delays resulting from any changes to the applicable protocols or difficulties or delays in subject enrollment or data analysis;
- our ability to establish additional strategic alliances, collaborations or licensing or other comparable arrangements on favorable terms;
- our ability to protect our intellectual property; and
- the timing and outcome of submission, acceptance and approval of regulatory filings.

Risks and uncertainties that we face are described in greater detail under the caption “Risk Factors” in Item 1A of Part I of our Annual Report on Form 10-K for the year ended December 31, 2011 and in other filings that we make with the Securities and Exchange Commission, or SEC. As a result of the risks and uncertainties to which our business is subject, the results or events indicated by any forward-looking statement may not occur. We caution you not to place undue reliance on any forward-looking statement.

In addition, any forward-looking statement in this quarterly report represents our views only as of the date of this quarterly report and should not be relied upon as representing our views as of any later date. Subsequent events and developments may cause our views to change. Although we may elect to update these forward-looking statements publicly at some point in the future, we specifically disclaim any obligation to do so, except as required by applicable law. Our forward-looking statements do not reflect the potential impact of any future acquisitions, mergers, dispositions, joint ventures or investments we may make.

Item 1. Financial Statements

TARGACEPT, INC.

BALANCE SHEETS
(in thousands, except share and par value amounts)
(unaudited)

	June 30, 2012	December 31, 2011
ASSETS		
Current assets:		
Cash and cash equivalents	$ 71,645	$ 107,283
Investments in marketable securities - short term	84,833	87,721
Receivables from collaborations	347	218
Prepaid expenses	2,343	3,471
Total current assets	159,168	198,693
Investments in marketable securities - long term	49,412	54,266
Property and equipment, net	3,919	5,035
Intangible assets	123	132
Total assets	$ 212,622	$ 258,126
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Accounts payable	$ 2,450	$ 3,489
Accrued expenses	6,482	16,167
Current portion of long-term debt	870	1,241
Current portion of deferred revenue	3,273	57,714
Total current liabilities	13,075	78,611
Long-term debt, net of current portion	1,564	1,986
Deferred revenue, net of current portion	1,620	3,241
Total liabilities	16,259	83,838
Commitments and contingencies		
Stockholders' equity:		
Common stock, $0.001 par value, 100,000,000 shares authorized and 33,428,636 and 33,383,403 shares issued and outstanding at June 30, 2012 and December 31, 2011, respectively	33	33
Preferred stock, $0.001 par value, 5,000,000 shares authorized and 0 shares issued and outstanding at June 30, 2012 and December 31, 2011	—	—
Capital in excess of par value	406,315	401,149
Accumulated other comprehensive income	194	36
Accumulated deficit	(210,179)	(226,930)
Total stockholders' equity	196,363	174,288
Total liabilities and stockholders' equity	$ 212,622	$ 258,126

See accompanying notes.

TARGACEPT, INC.

STATEMENTS OF COMPREHENSIVE INCOME
(in thousands, except share and per share amounts)
(unaudited)

	Three Months Ended June 30,		Six Months Ended June 30,	
	2012	2011	2012	2011
Operating revenues:				
License fees and milestones from collaborations	$33,487	$20,699	$56,094	$59,621
Grant revenue	158	44	408	116
Net operating revenues	33,645	20,743	56,502	59,737
Operating expenses:				
Research and development (including stock-based compensation of $1,044 and $1,257 for the three months ended June 30, 2012 and 2011, respectively; and $2,138 and $2,494 for the six months ended June 30, 2012 and 2011, respectively)	12,512	20,185	30,313	43,702
General and administrative (including stock-based compensation of $2,067 and $943 for the three months ended June 30, 2012 and 2011, respectively; and $2,890 and $1,869 for the six months ended June 30, 2012 and 2011, respectively)	4,587	3,129	7,657	6,304
Restructuring charges	2,312	—	2,312	—
Total operating expenses	19,411	23,314	40,282	50,006
Income (loss) from operations	14,234	(2,571)	16,220	9,731
Other income (expense):				
Interest income	280	343	579	659
Interest expense	(22)	(29)	(48)	(60)
Total other income (expense)	258	314	531	599
Net income (loss)	$14,492	$ (2,257)	$16,751	$10,330
Basic net income (loss) per share	$ 0.43	$ (0.07)	$ 0.50	$ 0.35
Diluted net income (loss) per share	$ 0.43	$ (0.07)	$ 0.50	$ 0.33
Weighted average common shares outstanding - basic	33,409,341	30,725,227	33,399,814	29,865,420
Weighted average common shares outstanding - diluted	33,638,629	30,725,227	33,701,857	31,207,325
Unrealized (loss) gain on available-for-sale securities, net	(33)	(5)	158	(26)
Comprehensive income (loss)	$14,459	$ (2,262)	$16,909	$10,304

See accompanying notes.

TARGACEPT, INC.

STATEMENTS OF CASH FLOWS
(in thousands)
(unaudited)

	Six Months Ended June 30,	
	2012	2011
Operating activities		
Net income	$ 16,751	$ 10,330
Adjustments to reconcile net income to net cash used in operating activities:		
Recognition of deferred revenue	(56,502)	(59,738)
Amortization of premium on marketable securities, net	477	306
Depreciation and amortization	1,262	1,235
Stock-based compensation expense	5,028	4,363
Changes in operating assets and liabilities:		
Receivables from collaborations	(129)	292
Other current assets	1,162	(325)
Accounts payable and accrued expenses	(10,724)	(1,571)
Deferred revenue	440	—
Net cash used in operating activities	(42,235)	(45,108)
Investing activities		
Purchase of investments in marketable securities	(76,524)	(80,448)
Proceeds from sale of investments in marketable securities	83,913	44,983
Purchase of property and equipment	(137)	(1,012)
Net cash provided by (used in) investing activities	7,252	(36,477)
Financing activities		
Principal payments on long-term debt	(793)	(844)
Proceeds from issuance of long-term debt	—	2,132
Proceeds from issuance of common stock, net	138	82,585
Net cash (used in) provided by financing activities	(655)	83,873
Net (decrease) increase in cash and cash equivalents	(35,638)	2,288
Cash and cash equivalents at beginning of period	107,283	165,854
Cash and cash equivalents at end of period	$ 71,645	$168,142

See accompanying notes.

TARGACEPT, INC.

NOTES TO UNAUDITED FINANCIAL STATEMENTS
June 30, 2012

1. The Company and Nature of Operations

Targacept, Inc., or the Company, is a Delaware corporation formed on March 7, 1997. The Company is a biopharmaceutical company engaged in the design, discovery and development of novel NNR Therapeutics™ for the treatment of diseases and disorders of the nervous system. The Company's NNR Therapeutics selectively target neuronal nicotinic receptors, which it refers to as NNRs. Its facilities are located in Winston-Salem, North Carolina.

2. Summary of Significant Accounting Policies

Basis of Presentation

The accompanying unaudited financial statements have been prepared in accordance with U.S. generally accepted accounting principles, or GAAP, for interim financial information, the instructions to Form 10-Q and Article 10 of Regulation S-X. Accordingly, they do not include all of the information and footnotes required by GAAP for complete financial statements and should be read in conjunction with the Company's audited financial statements and notes thereto included in its Annual Report on Form 10-K for the year ended December 31, 2011. In the opinion of the Company's management, all adjustments, consisting of normal recurring adjustments, necessary for a fair presentation of its financial position, operating results and cash flows for the periods presented have been included. Operating results for the three and six months ended June 30, 2012 are not necessarily indicative of the results that may be expected for the full year, for any other interim period or for any future year.

Use of Estimates

The preparation of financial statements in conformity with GAAP requires management to make estimates and assumptions that affect the amounts of assets, liabilities, revenues and expenses reported in the financial statements and accompanying notes. Actual results could differ from these estimates.

Fair Value Measurement

The Company follows Financial Accounting Standards Board, or FASB, Accounting Standards Codification, or ASC, Topic 820, *Fair Value Measurements and Disclosures*, or ASC 820, for application to financial assets. ASC 820 defines fair value, provides a consistent framework for measuring fair value under GAAP and requires fair value financial statement disclosures. ASC 820 applies only to the measurement and disclosure of financial assets that are required or permitted to be measured and reported at fair value under other ASC topics (except for standards that relate to share-based payments such as ASC Topic 718, *Compensation - Stock Compensation*).

TARGACEPT, INC.

NOTES TO UNAUDITED FINANCIAL STATEMENTS (continued)
June 30, 2012

2. Summary of Significant Accounting Policies (continued)

The valuation techniques required by ASC 820 may be based on either observable or unobservable inputs. Observable inputs reflect readily obtainable data from independent sources, and unobservable inputs reflect the Company's market assumptions. These inputs are classified into the following hierarchy:

Level 1 Inputs - quoted prices (unadjusted) in active markets for identical assets that the reporting entity has the ability to access at the measurement date;

Level 2 Inputs - inputs other than quoted prices included within Level 1 that are observable for the asset, either directly or indirectly; and

Level 3 Inputs - unobservable inputs for the asset.

The following tables present the Company's investments in marketable securities (including those classified on the Company's balance sheet as cash equivalents) that are measured at fair value on a recurring basis as of June 30, 2012 and December 31, 2011, respectively:

June 30, 2012	Quoted Prices in Active Markets (Level 1)	Other Observable Inputs (Level 2)	Unobservable Inputs (Level 3)
		(in thousands)	
U.S. Treasury and U.S. or state government agency-backed securities	$60,335	$ —	$ —
Corporate debt securities	—	62,102	—
Municipal bonds	—	2,336	
Certificates of deposit	13,000	—	—
Accrued interest	471	—	—
Total cash equivalents and marketable securities	$73,806	$ 64,438	$ —

December 31, 2011	Quoted Prices in Active Markets (Level 1)	Other Observable Inputs (Level 2)	Unobservable Inputs (Level 3)
		(in thousands)	
U.S. Treasury and U.S. or state government agency-backed securities	$69,474	$ —	$ —
Corporate debt securities	—	75,007	—
Certificates of deposit	13,000	—	—
Accrued interest	506	—	—
Total cash equivalents and marketable securities	$82,980	$ 75,007	$ —

TARGACEPT, INC.

NOTES TO UNAUDITED FINANCIAL STATEMENTS (continued)
June 30, 2012

2. Summary of Significant Accounting Policies (continued)

Corporate debt securities and municipal bonds are valued based on various observable inputs such as benchmark yields, reported trades, broker/dealer quotes, benchmark securities and bids.

Investments in Marketable Securities

Consistent with its investment policy, the Company invests its cash allocated to fund its short-term liquidity requirements with prominent financial institutions in bank depository accounts and institutional money market funds and the Company invests the remainder of its cash in U.S. Treasury notes and bonds, U.S. and state government agency-backed securities, corporate debt securities that are rated at least A quality or equivalent and certificates of deposit.

The Company determines the appropriate classification of marketable securities at the time of purchase and reevaluates its classification as of each balance sheet date. All marketable securities owned during the six months ended June 30, 2012 and 2011 were classified as available for sale. The cost of securities sold is based on the specific identification method. Investments in marketable securities are recorded as of each balance sheet date at fair value, with unrealized gains and, to the extent deemed temporary, unrealized losses included in stockholders' equity. Interest and dividend income on investments in marketable securities, accretion of discounts and amortization of premiums and realized gains and losses are included in interest income in the statement of comprehensive income.

An investment in marketable securities is considered to be impaired when a decline in fair value below its cost basis is determined to be other than temporary. The Company evaluates whether a decline in fair value of an investment in marketable securities below its cost basis is other than temporary using available evidence. In the event that the cost basis of the investment exceeds its fair value, the Company evaluates, among other factors, the amount and duration of the period that the fair value is less than the cost basis, the financial health of and business outlook for the issuer, including industry and sector performance, operational and financing cash flow factors, overall market conditions and trends, the Company's intent to sell the investment and whether it is more likely than not the Company would be required to sell the investment before its anticipated recovery. If a decline in fair value is determined to be other than temporary, the Company records an impairment charge in the statement of comprehensive income and establishes a new cost basis in the investment.

TARGACEPT, INC.

NOTES TO UNAUDITED FINANCIAL STATEMENTS (continued)
June 30, 2012

2. Summary of Significant Accounting Policies (continued)

Revenue Recognition

The Company uses the revenue recognition guidance established by ASC Topic 605, *Revenue Recognition*, or ASC 605. In determining the accounting for collaboration and alliance agreements, the Company follows the provisions of ASC 605, Subtopic 25, *Multiple Element Arrangements*, or ASC 605-25. ASC 605-25 provides guidance on whether an arrangement that involves multiple revenue-generating activities or deliverables should be divided into separate units of accounting for revenue recognition purposes and, if division is required, how the arrangement consideration should be allocated among the separate units of accounting. If the arrangement constitutes separate units of accounting according to the separation criteria of ASC 605-25, the consideration received is allocated among the separate units of accounting and the applicable revenue recognition criteria must be applied to each unit. If the arrangement constitutes a single unit of accounting, the revenue recognition policy must be determined for the entire arrangement and the consideration received is recognized over the period of inception through the date on which the last deliverable within the single unit of accounting is expected to be delivered. Revisions to the estimated period of recognition are reflected in revenue prospectively.

Collaboration research and development revenue is earned and recognized as research is performed and related expenses are incurred. Non-refundable upfront fees, which may include, for example, an initial payment upon effectiveness of the contractual relationship, payment representing a common stock purchase premium or payment to secure a right for a future license, are recorded as deferred revenue and recognized into revenue as license fees and milestones from collaborations on a straight-line basis over the estimated period of the Company's substantive performance obligations. If the Company does not have substantive performance obligations, it recognizes non-refundable upfront fees into revenue through the date the deliverable is satisfied.

Revenue for non-refundable payments based on the achievement of milestone events under collaboration agreements is recognized in accordance with ASC 605, Subtopic 28, *Milestone Method*, or ASC 605-28, which the Company adopted as of January 1, 2011. Milestone events under the Company's collaboration agreements may include research, development, regulatory, commercialization or sales events. Under ASC 605-28, a milestone payment is recognized as revenue when the applicable event is achieved if the event meets the definition of a milestone and the milestone is determined to be substantive. ASC 605-28 defines a milestone event as an event having all of the following characteristics: (1) there is substantive uncertainty regarding achievement of the milestone event at the inception of the arrangement; (2) the event can only be achieved based, in whole or in part, on either the company's performance or a specific outcome resulting from the company's performance; and (3) if achieved, the event would result in additional payment due to the company. The Company also treats events that can only be achieved based, in whole or in part, on either a third party's performance or a specific outcome resulting from a third party's performance as milestone events if the criteria of ASC 605-28 are otherwise satisfied.

TARGACEPT, INC.

NOTES TO UNAUDITED FINANCIAL STATEMENTS (continued)
June 30, 2012

2. Summary of Significant Accounting Policies (continued)

A milestone is considered substantive if it meets all of the following criteria: (A) the payment is commensurate with either the Company's performance to achieve the milestone or with the enhancement of the value of the delivered item; (B) the payment relates solely to past performance; and (C) the payment is reasonable relative to all of the deliverables and payment terms within the arrangement. If any of these conditions is not met, the milestone payment is deferred and recognized on a straight-line basis over a period determined as discussed above.

Research and development costs that are reimbursable under collaboration agreements are recorded in accordance with ASC 605, Subtopic 45, *Principal Agent Considerations*. Amounts reimbursed under a cost sharing arrangement are reflected as a reduction of research and development expense.

Grant payments received prior to the Company's performance of work required by the terms of the award are recorded as deferred revenue and recognized as grant revenue as the Company performs the work and incurs qualifying costs.

Income Taxes

The Company uses the liability method in accounting for income taxes as required by ASC Topic 740, *Income Taxes*, or ASC 740. Under ASC 740, deferred tax assets and liabilities are recorded for operating loss and tax credit carryforwards and for the future tax consequences attributable to the differences between the financial statement carrying amounts of existing assets and liabilities and their respective tax bases. Deferred tax assets and liabilities are measured using enacted tax rates expected to apply to taxable income in the years in which those temporary differences are expected to be recovered or settled. The effect of a change in tax rates on deferred tax assets and liabilities is recognized in the results of operations in the period that includes the enactment date. A valuation allowance is recorded to reduce the carrying amounts of deferred tax assets unless it is more likely than not that the assets will be realized. ASC 740 prescribes a recognition threshold and measurement attribute for the financial statement recognition and measurement of a tax position taken or expected to be taken in a tax return. ASC 740 requires interim income tax expense or benefit to be calculated using an estimated annual effective tax rate, unless the taxpayer's best estimate of the annual effective tax rate is the actual year-to-date tax rate. ASC 740 also provides guidance on de-recognition, classification, interest and penalties, accounting in interim periods, disclosures and transition. The Company's policy is to classify any interest recognized in accordance with ASC 740 as interest expense and to classify any penalties recognized in accordance with ASC 740 as an expense other than income tax expense.

TARGACEPT, INC.

NOTES TO UNAUDITED FINANCIAL STATEMENTS (continued)
June 30, 2012

2. Summary of Significant Accounting Policies (continued)

Net Income or Loss Per Share

The Company computes net income or loss per share in accordance with ASC Topic 260, *Earnings Per Share*, or ASC 260. Under the provisions of ASC 260, basic net income or loss per share, or Basic EPS, is computed by dividing net income or loss by the weighted average number of common shares outstanding. Diluted net income or loss per share, or Diluted EPS, is computed by dividing net income or loss by the weighted average number of common shares outstanding plus, in the case of diluted net income per share, dilutive common share equivalents outstanding. The calculations of Basic EPS and Diluted EPS are set forth in the table below (in thousands, except share and per share amounts).

	Three Months Ended June 30,		Six Months Ended June 30,	
	2012	2011	2012	2011
Basic:				
Net income (loss)	$ 14,492	$ (2,257)	$ 16,751	$ 10,330
Weighted average common shares - basic	33,409,341	30,725,227	33,399,814	29,865,420
Basic EPS	$ 0.43	$ (0.07)	$ 0.50	$ 0.35
Diluted:				
Net income (loss)	$ 14,492	$ (2,257)	$ 16,751	$ 10,330
Weighted average common shares - basic	33,409,341	30,725,227	33,399,814	29,865,420
Common share equivalents	229,288	—	302,043	1,341,905
Weighted average common shares - diluted	33,638,629	30,725,227	33,701,857	31,207,325
Diluted EPS	$ 0.43	$ (0.07)	$ 0.50	$ 0.33

Common share equivalents consist of the incremental common shares that would be outstanding upon the exercise of stock options, calculated using the treasury stock method. For the three months ended June 30, 2011, the Company excluded all common share equivalents from the calculation of Diluted EPS because the Company had net loss. As a result, Diluted EPS is identical to Basic EPS for the three months ended June 30, 2011. If the Company had been in a net income position for the three months ended June 30, 2011, 3,800,643 shares subject to outstanding stock options may have been included in the calculation of common share equivalents using the treasury stock method.

Shares subject to outstanding stock options that were anti-dilutive for periods of net income and consequently not included in the calculation of common share equivalents totaled 3,793,921 for the three months ended June 30, 2012, and 3,278,572 and 1,405,127 for the six months ended June 30, 2012 and 2011, respectively, calculated on a weighted average basis.

TARGACEPT, INC.

NOTES TO UNAUDITED FINANCIAL STATEMENTS (continued)
June 30, 2012

2. Summary of Significant Accounting Policies (continued)

Common Stock and Stock-Based Compensation

The Company issued 45,233 shares of common stock upon the exercise of stock options during the six months ended June 30, 2012. The Company issued 305,395 shares of common stock upon the exercise of stock options during the year ended December 31, 2011.

The Company granted to employees options to purchase an aggregate of 1,194,995 shares of common stock on May 4, 2012. These stock options have an estimated aggregate fair value, using the Black-Scholes-Merton formula, of $3,609,000. The Company is recording this amount, as adjusted for forfeitures, as stock-based compensation on a straight line basis over 16 quarters beginning with the quarter ended June 30, 2012.

During the six months ended June 30, 2012, the Company partially accelerated the vesting of, and/or extended the permitted period for exercise for, some outstanding stock options held by three executive officers who departed the Company. These modifications resulted in incremental compensation cost recorded by the Company for the three and six months ended June 30, 2012 of $1,299,000.

Accumulated Other Comprehensive Income or Loss

Accumulated other comprehensive income or loss, as presented in stockholders' equity on the Company's balance sheet, reflects the cumulative net unrealized gains and losses on available-for-sale securities for all periods. The table below reflects changes in accumulated other comprehensive income or loss for the six months ended June 30, 2012.

	(in thousands)
Accumulated other comprehensive income, January 1, 2012	$ 36
Unrealized gain on available-for-sale securities, net	158
Accumulated other comprehensive income, June 30, 2012	$ 194

Intellectual Property

The Company capitalizes the cost of intellectual property acquired or licensed from external sources as intangible assets if, at the time of acquisition, the intellectual property has reached technological feasibility. The cost of intellectual property acquired or licensed from external sources that has not reached technological feasibility at the time of acquisition or that has no expected future use is charged to research and development expense as incurred. The Company records all other charges related to the filing, prosecution and maintenance of patents to expense as incurred.

TARGACEPT, INC.

NOTES TO UNAUDITED FINANCIAL STATEMENTS (continued)
June 30, 2012

2. Summary of Significant Accounting Policies (continued)

Commitments and Contingencies

The Company's lease with Wake Forest University Health Sciences expired by its terms on July 31, 2012. As of August 9, 2012, the Company is in discussions with Wake Forest University Health Sciences regarding terms for a potential renewal of this lease.

Under an employment agreement with the Company's former chief executive officer, the Company has agreed to pay severance equal to the departing executive's regular base salary as of May 31, 2012 and to continue the departing executive's health and life insurance benefits coverage provided to him as of May 31, 2012 for twelve months, representing an aggregate estimated amount of $506,000 recorded as general and administrative expense for the three months ended June 30, 2012.

3. Investments in Marketable Securities

The following is a reconciliation of amortized cost to fair value of available-for-sale marketable securities (including those classified on the Company's balance sheet as cash equivalents) held at June 30, 2012 and December 31, 2011:

June 30, 2012	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Fair Value
		(in thousands)		
Security type				
Cash Equivalents				
Corporate debt securities	$ 3,999	$ —	$ —	$ 3,999
Marketable Securities - Short term				
U.S. Treasury and U.S. or state government agency-backed securities	40,301	46	(1)	40,346
Corporate debt securities	31,276	28	—	31,304
Certificates of deposit	13,000	—	—	13,000
Accrued interest	183	—	—	183
Marketable Securities - Long term				
U.S. Treasury and U.S. or state government agency-backed securities	19,935	58	(4)	19,989
Corporate debt securities - long term	26,729	92	(22)	26,799
Municipal bonds	2,339	1	(4)	2,336
Accrued interest	288	—	—	288
Total available-for-sale marketable securities	$138,050	$ 225	$ (31)	$138,244

TARGACEPT, INC.

NOTES TO UNAUDITED FINANCIAL STATEMENTS (continued)
June 30, 2012

3. Investments in Marketable Securities (continued)

December 31, 2011	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Fair Value
		(in thousands)		
Security type				
Cash Equivalents				
Corporate debt securities	$ 16,000	$ —	$ —	$ 16,000
Marketable Securities - Short term				
U.S. Treasury and U.S. or state government agency-backed securities	35,908	32	—	35,940
Corporate debt securities	38,531	37	(34)	38,534
Certificates of deposit	13,000	—	—	13,000
Accrued interest	247	—	—	247
Marketable Securities - Long term				
U.S. Treasury and U.S. or state government agency-backed securities	33,466	75	(7)	33,534
Corporate debt securities - long term	20,540	39	(106)	20,473
Accrued interest	259	—	—	259
Total available-for-sale marketable securities	$157,951	$ 183	$ (147)	$157,987

As of June 30, 2012, the Company held investments in marketable securities with unrealized gains of $225,000 and unrealized losses of $31,000. For investments in an unrealized loss position, the duration of the loss was less than 12 months. None of these investments is considered to be other-than-temporarily impaired.

As of June 30, 2012, the Company's investments in marketable securities, including those classified on its balance sheet as cash equivalents, reach maturity between July 2012 and May 2015, with a weighted average maturity date of July 23, 2013.

TARGACEPT, INC.

NOTES TO UNAUDITED FINANCIAL STATEMENTS (continued)
June 30, 2012

4. Income Taxes

For each of the three and six-month periods ended June 30, 2012 and 2011, the Company did not recognize any income tax expense. Exercises of stock options may result in tax deductions for stock-based compensation in excess of expense recorded for the stock options under GAAP. For interim periods within years for which taxable net income is forecasted, the Company recognizes the income tax benefit related to the excess tax deductions as an increase to capital in excess of par value, which based on ASC 740 results in an offsetting charge in the same amount to income tax expense. As of June 30, 2012, the Company had $7,534,000 of cumulative tax deductions for periods of net loss from exercises of stock options in excess of expense recorded under GAAP for the stock options. The benefit of these excess tax deductions had not begun to be realized as of June 30, 2012 because the Company has incurred cumulative net operating losses since inception. Accordingly, the tax benefit will not be recognized as an increase to capital in excess of par value until the excess deductions reduce income taxes payable.

Because the Company has incurred cumulative net operating losses since inception, all tax years remain open to examination by U.S. federal, North Carolina and Massachusetts tax authorities.

5. Strategic Alliance and Collaboration Agreements

AstraZeneca AB

Cognitive Disorders

In December 2005, the Company entered into a collaborative research and license agreement with AstraZeneca AB under which the Company granted AstraZeneca exclusive development and worldwide commercialization rights to the Company's product candidate AZD3480 (TC-1734) as a treatment for specified conditions characterized by cognitive impairment, including Alzheimer's disease and attention deficit/hyperactivity disorder, or ADHD. The Company is eligible to receive license fees and milestone payments under the agreement. The amount of license fees and milestone payments depends on the timing and achievement of specified milestone events.

TARGACEPT, INC.

NOTES TO UNAUDITED FINANCIAL STATEMENTS (continued)
June 30, 2012

5. Strategic Alliance and Collaboration Agreements (continued)

AstraZeneca paid the Company an initial fee of $10,000,000 in February 2006. Based on the agreement terms, the Company allocated $5,000,000 of the initial fee to the research collaboration, which the Company recognized as revenue on a straight-line basis over the four-year term of the research collaboration. The Company deferred recognition of the remaining $5,000,000 of the initial fee, which was allocated to the AZD3480 license grants, until December 2006, when AstraZeneca made a determination to proceed with further development of AZD3480. As a result, in the first quarter of 2007, the Company began recognizing the $5,000,000 of the initial fee that it had previously deferred as revenue on a straight-line basis over the estimated development period for AZD3480. In July 2009, based on feedback received from AstraZeneca regarding its development plans for AZD3480 as a treatment for ADHD, the Company extended its estimate of the development period for AZD3480 to continue through 2013 and began recognizing the part of the $5,000,000 portion of the initial fee not yet recognized as of April 1, 2009 into revenue on a straight-line basis over the remaining estimated development period. In September 2010, the Company and AstraZeneca amended the agreement to enable the Company to conduct a clinical trial of AZD3480 in mild to moderate Alzheimer's disease and to provide for respective roles and responsibilities and associated financial terms for such a study. Under the amendment, the Company received from AstraZeneca $500,000 in October 2010, $2,000,000 in September 2011 and $3,500,000 in December 2011. The Company is recognizing both the portion of the $5,000,000 of the initial fee attributable to AZD3480 license grants not yet recognized and the payments received under the amendment into revenue on a straight-line basis through 2013, which is the estimated period of the Company's performance obligations under the agreement as amended. The Company recognized an aggregate of $810,000 and $207,000 of the initial fee and the payments received under the amendment for the three months ended June 30, 2012 and 2011, respectively, and an aggregate of $1,621,000 and $414,000 for the six months ended June 30, 2012 and 2011, respectively.

Under the agreement, the Company is also eligible to receive additional payments from AstraZeneca if specified milestone events for AZD3480 are achieved for Alzheimer's disease, including up to an additional $35,000,000 if development milestone events are achieved, an additional $20,000,000 if a regulatory milestone event is achieved, and up to an additional $90,000,000 if first commercial sale milestone events are achieved, plus, if regulatory approval is achieved for AZD3480 for any indication, stepped double-digit royalties on any sales of AZD3480 for that indication or any other indication.

TARGACEPT, INC.

NOTES TO UNAUDITED FINANCIAL STATEMENTS (continued)
June 30, 2012

5. Strategic Alliance and Collaboration Agreements (continued)

The Company is also eligible to receive other payments under the agreement if development, regulatory, first commercial sale and first detail milestone events for AZD3480 are achieved for any other target indication under the agreement. AZD3480 is not currently in development for any indication other than Alzheimer's disease. Under the terms of a sponsored research agreement and a subsequent license agreement between the Company and University of Kentucky Research Foundation, or UKRF, if the Company receives any of these payments from AstraZeneca related to AZD3480, including royalties, the Company is required to pay a low-single digit percentage of each such payment to UKRF. Based solely on projected activities and timelines, the Company does not expect it to be possible for it to achieve any contingent milestone event for AZD3480 during 2012. The likelihood that the Company will achieve any particular milestone event with respect to AZD3480 in any future period is uncertain, and the Company may not ever achieve any of the milestone events with respect to AZD3480.

With respect to AZD1446, the most advanced product candidate that arose out of the parties' preclinical research collaboration, the Company is eligible to receive additional payments from AstraZeneca if specified milestone events for AZD1446 under the agreement are achieved for Alzheimer's disease, including up to an additional $14,000,000 if development milestone events are achieved, an additional $10,000,000 if a regulatory milestone event is achieved and up to an additional $49,000,000 if first commercial sale milestone events are achieved, plus, if regulatory approval is achieved for AZD1446 for any indication, stepped royalties on any sales of AZD1446 for that indication or any other indication. The Company is also eligible to receive other payments under the agreement if development, regulatory, first commercial sale and first detail milestone events for AZD1446 are achieved for any other target indication under the agreement. AZD1446 is not currently in an active clinical trial. Based solely on projected activities and timelines, the Company does not expect it to be possible for it to achieve any contingent milestone event for AZD1446 during 2012. The likelihood that the Company will achieve any particular milestone event with respect to AZD1446 in any future period is uncertain, and the Company may not ever achieve any of the milestone events with respect to AZD1446.

The Company considers that each of the potential milestone events under the agreement with respect to AZD3480 or AZD1446 would be substantive because the applicable criteria of its revenue recognition policy (see Note 2) would be satisfied.

TARGACEPT, INC.

NOTES TO UNAUDITED FINANCIAL STATEMENTS (continued)
June 30, 2012

5. Strategic Alliance and Collaboration Agreements (continued)

In October 2007, the Company provided notice under the agreement offering AstraZeneca the right to license its product candidate TC-5619 for specified conditions characterized by cognitive impairment. Based on a subsequent election by AstraZeneca made under the terms of the agreement, AstraZeneca paid the Company $2,000,000 and the Company agreed to develop TC-5619 independently through completion of Phase 1 clinical development and a Phase 2 clinical proof of concept clinical trial in accordance with a mutually acceptable development plan, following which AstraZeneca would have the right to license TC-5619 on terms specified in the agreement (as it was amended in April 2010 as described below). The Company recognized the $2,000,000 payment as revenue on a straight-line basis over the period estimated from time to time for the Company's research and development obligations for TC-5619. The Company completed its research and development obligations for TC-5619 under the agreement in the second quarter of 2011. Accordingly, as of June 30, 2011, all of the $2,000,000 payment related to TC-5619 received from AstraZeneca had been recognized into revenue. The Company recognized $43,000 and $87,000 of the payment into revenue for the three and six months ended June 30, 2011, respectively.

In April 2010, the Company and AstraZeneca amended the agreement to modify the terms applicable to TC-5619. In conjunction with the amendment, the Company and AstraZeneca agreed to an expanded development program for TC-5619 and the Company received a payment of $11,000,000 to maintain AstraZeneca's option to license TC-5619. The Company recorded the $11,000,000 payment as deferred revenue and recognized it as revenue on a straight-line basis over the period estimated from time to time for the Company's research and development obligations for TC-5619 under the agreement, which, as noted above, were completed in the second quarter of 2011. Accordingly, as of June 30, 2011, all of the $11,000,000 payment related to TC-5619 received from AstraZeneca had been recognized into revenue. The Company recognized $2,357,000 and $4,714,000 of the payment into revenue for the three and six months ended June 30, 2011, respectively. In late April 2011, the Company received notice from AstraZeneca that it had determined not to exercise its license option.

The Company has received payments upon achievement of milestone events under the agreement that it recognized in full as revenue upon achievement because the event met each of the conditions required for immediate recognition under its revenue recognition policy (see Note 2). In particular, the Company received a $10,000,000 payment from AstraZeneca in July 2009 based on achievement of the objective in a completed Phase 2 clinical trial of AZD3480 in adults with ADHD, a milestone event under an amendment to the agreement. The Company made a payment of $350,000 to UKRF in January 2010 as a result of the $10,000,000 payment received from AstraZeneca. The Company has also received cumulative payments from AstraZeneca of $2,600,000 based on the achievement of milestone events related to the development of product candidates arising under the parties' completed preclinical research collaboration, including AZD1446.

AstraZeneca has paid the Company an aggregate of $88,120,000 under the agreement since its inception. As of June 30, 2012, $4,862,000 of the amounts received remained to be recognized into revenue in future periods.

TARGACEPT, INC.

NOTES TO UNAUDITED FINANCIAL STATEMENTS (continued)
June 30, 2012

5. Strategic Alliance and Collaboration Agreements (continued)

TC-5214

In December 2009, the Company entered into a collaboration and license agreement with AstraZeneca AB for the global development and commercialization of TC-5214. Under the agreement, AstraZeneca made an upfront payment to the Company of $200,000,000. The Company recorded the upfront payment made by AstraZeneca as deferred revenue and began recognizing the payment as revenue on a straight-line basis over the estimated period of the Company's substantive performance obligations under the agreement, or approximately 33 months after the agreement date. Under the terms of an existing license agreement, the Company paid $16,000,000 to University of South Florida Research Foundation, or USFRF, in February 2010 based on the Company's receipt of the upfront payment from AstraZeneca.

The Company and AstraZeneca jointly designed a program for the global development of TC-5214 as an adjunct therapy and as a "switch" monotherapy, in each case in patients with major depressive disorder who do not respond adequately to initial antidepressant treatment. AstraZeneca was responsible for 80% and the Company was responsible for 20% of the costs of this program, except that AstraZeneca was responsible for 100% of development costs required only to obtain or maintain regulatory approval in countries outside the United States and the European Union. In addition, for each of the Company and AstraZeneca, costs that were not contemplated at execution to be part of the program were in some cases excluded from the cost-sharing arrangement.

The Company's portion of the costs of the TC-5214 development program was $1,369,000 and $6,228,000 for the three months ended June 30, 2012 and 2011, respectively, and $4,779,000 and $13,324,000 for the six months ended June 30, 2012 and 2011, respectively. AstraZeneca's allocable portion of the program costs paid by the Company was $6,000 and $141,000 for the three months ended June 30, 2012 and 2011, respectively, and $127,000 and $201,000 for the six months ended June 30, 2012 and 2011, respectively. AstraZeneca's allocable portion of the program costs paid by the Company is reflected in the Company's financial statements as a reduction to research and development expense.

TARGACEPT, INC.

NOTES TO UNAUDITED FINANCIAL STATEMENTS (continued)
June 30, 2012

5. Strategic Alliance and Collaboration Agreements (continued)

In the first quarter of 2012, the Company and AstraZeneca announced that, based on the totality of the results of the Phase 3 development program for TC-5214, a regulatory filing for TC-5214 as an adjunct therapy for major depressive disorder will not be pursued. Also in the first quarter of 2012, the Company reported that the Company and AstraZeneca determined to discontinue a Phase 2b clinical trial of TC-5214 as a "switch" monotherapy. The determinations to not pursue a regulatory filing for TC-5214 as an adjunct therapy for major depressive disorder and to discontinue the Phase 2b clinical trial of TC-5214 as a "switch" monotherapy resulted in a change in the estimated period of the Company's substantive performance obligations under the agreement to be approximately 29 months from the agreement date, and the Company revised the revenue recognition period for the upfront payment previously received accordingly. The Company recognized $32,676,000 and $18,091,000 of the upfront payment as revenue for the three months ended June 30, 2012 and 2011, respectively, and $54,473,000 and $35,984,000 for the six months ended June 30, 2012 and 2011, respectively. As of June 30, 2012, none of the upfront payment remained to be recognized into revenue.

In April 2012, the Company received notice of termination of the agreement from AstraZeneca. By the terms of the agreement, the termination became effective in late May 2012. The Company is responsible for 20% of the remaining costs related to the clinical program for TC-5214 in major depressive disorder as final program activities are completed.

GlaxoSmithKline

On July 27, 2007, the Company entered into a product development and commercialization agreement with SmithKline Beecham Corporation, doing business as GlaxoSmithKline, and Glaxo Group Limited, which are referred to together as GlaxoSmithKline, that set forth the terms of an alliance designed to discover, develop and market product candidates that selectively target specified NNR subtypes for specified therapeutic focus areas. In February 2011, the Company received notice of termination of the agreement from GlaxoSmithKline. By the terms of the agreement, the termination became effective in May 2011.

Under the agreement and a related stock purchase agreement, GlaxoSmithKline made an initial payment to the Company of $20,000,000 and purchased 1,275,502 shares of the Company's common stock for an aggregate purchase price of $15,000,000 on July 27, 2007. The purchase price paid by GlaxoSmithKline reflected an aggregate deemed premium of $3,521,000, based on the closing price of the Company's common stock on the trading day immediately preceding the date that the agreements were signed and announced. The Company deferred recognition of both the initial payment made by GlaxoSmithKline and the deemed premium paid for the shares of the Company's common stock purchased by GlaxoSmithKline and began recognizing both amounts into revenue on a straight-line basis over the nine-year period of the Company's research and early development obligations estimated at inception of the agreement.

TARGACEPT, INC.

NOTES TO UNAUDITED FINANCIAL STATEMENTS (continued)
June 30, 2012

5. Strategic Alliance and Collaboration Agreements (continued)

In December 2007, the Company received a $6,000,000 payment from GlaxoSmithKline upon the achievement of a specified milestone event under the agreement. The Company determined the payment did not meet each of the conditions of its revenue recognition policy (see Note 2) required for recognition of the full amount into revenue upon achievement of the milestone. Specifically, based on the progress as of inception of the agreement of the product candidate to which the payment related, there was not substantive uncertainty regarding achievement of the milestone event within the meaning of the Company's revenue recognition policy. Accordingly, the Company recorded the payment as deferred revenue and began recognizing it into revenue on a straight-line basis over the remaining portion of the nine-year period of the Company's research and early development obligations estimated at inception of the agreement.

As a result of its receipt in February 2011 of notice of termination of the agreement, the Company recognized the remaining $18,421,000 of the payments discussed above that had not previously been recognized into revenue for the first quarter of 2011 in accordance with its revenue recognition policy (see Note 2).

6. Reduction In Force

On April 25, 2012, the Company announced a reduction in force as part of a plan to focus its resources on its clinical programs and select preclinical opportunities. The restructuring was completed in the second quarter of 2012. The Company recorded as expense and paid $2,312,000 in severance and other charges related to the reduction in force for the six months ended June 30, 2012. Upon the completion of the restructuring, the Company's workforce was reduced by 65 employees, or approximately 46%.

Item 2. Management's Discussion and Analysis of Financial Condition and Results of Operations

You should read the following discussion and analysis of our financial condition and results of operations together with our financial statements and the related notes included in this quarterly report and our audited financial statements and Management's Discussion and Analysis of Financial Condition and Results of Operations included in our Annual Report on Form 10-K for the year ended December 31, 2011, which is on file with the SEC. In addition to historical information, the following discussion contains forward-looking statements that involve risks, uncertainties and assumptions. Our actual results, performance or experience could differ materially from what is indicated by any forward-looking statement due to various important factors, risks and uncertainties, including, but not limited to, those set forth under "Cautionary Note Regarding Forward-Looking Statements" in Part I of this quarterly report or under "Risk Factors" in Item 1A of Part I of our Annual Report on Form 10-K for the year ended December 31, 2011 or other filings that we make with the SEC.

Overview

Background

We are a biopharmaceutical company engaged in the design, discovery and development of novel NNR Therapeutics™ for the treatment of diseases and disorders of the nervous system. Our NNR Therapeutics selectively target a class of receptors known as neuronal nicotinic receptors, which we refer to as NNRs. NNRs are found on nerve cells throughout the nervous system and serve as key regulators of nervous system activity.

We have multiple clinical-stage product candidates and preclinical programs in areas in which we believe there are significant medical need and commercial potential, as well as proprietary drug discovery technologies. We also have a collaboration agreement with AstraZeneca focused in cognitive disorders, which we refer to in this quarterly report as our "cognitive disorders agreement with AstraZeneca."

Our product candidates currently in clinical development are described briefly below.

- *TC-5619*. TC-5619 is a novel small molecule that modulates the activity of the a7 NNR. We are currently conducting two separate Phase 2 clinical trials of TC-5619 - a Phase 2b study in negative symptoms and cognitive dysfunction in schizophrenia and a Phase 2 study in inattentive-predominant attention deficit/hyperactivity disorder. We are also currently evaluating potential additional Phase 2 development of TC-5619 in Alzheimer's disease.
- *AZD3480 (TC-1734)*. AZD3480 is a novel small molecule that modulates the activity of the a4ß2 NNR and is subject to our cognitive disorders agreement with AstraZeneca. We or AstraZeneca have conducted several clinical studies of AZD3480 in various cognitive disorders, and we are currently conducting a Phase 2b clinical trial of AZD3480 as a treatment for mild to moderate Alzheimer's disease.
- *AZD1446 (TC-6683).* AZD1446 is a novel small molecule that modulates the activity of the a4ß2 NNR and is subject to our cognitive disorders agreement with AstraZeneca. We are currently in discussions with AstraZeneca regarding the next development steps for AZD1446.

- *TC-5214*. TC-5214 is a nicotinic channel modulator that had previously been in co-development with AstraZeneca as an antidepressant under a now terminated collaboration agreement. We are currently evaluating other therapeutic areas for potential future development of TC-5214.
- *TC-6987*. TC-6987 is a novel small molecule that modulates the activity of the a7 NNR. We have completed two Phase 2 exploratory clinical trials of TC-6987, one in asthma and one in Type 2 diabetes. We have announced that we will not pursue further development of TC-6987 in Type 2 diabetes and, based on portfolio prioritization considerations, we do not have current plans to conduct additional development of TC-6987 in asthma. We are evaluating potential future development options for TC-6987.

Under our cognitive disorders agreement with AstraZeneca:

- AstraZeneca has an exclusive license to AZD3480, AZD1446 and earlier-stage compounds that arose from the preclinical research collaboration described below;
- except as discussed in the next bullet, AstraZeneca is responsible for substantially all current and future development costs for AZD3480, AZD1446 and each other compound arising from the preclinical research collaboration described below that it elects to advance;
- we are responsible for conducting and funding our ongoing Phase 2b clinical trial of AZD3480 as a treatment for mild to moderate Alzheimer's disease, but have received $6.2 million in payments from AstraZeneca in connection with events associated with the study; and
- from January 2006 to January 2010, we and AstraZeneca conducted a preclinical research collaboration under the agreement to discover and develop compounds that act on the a4ß2 NNR as treatments for conditions characterized by cognitive impairment; AstraZeneca paid us research fees, based on a reimbursement rate specified under the agreement, for research services rendered in the preclinical research collaboration.

Our cognitive disorders agreement with AstraZeneca can be terminated by AstraZeneca for an uncured material breach by us or upon 90 days notice given at any time.

Under a second collaboration agreement with AstraZeneca, which we refer to in this quarterly report as our "TC-5214 agreement with AstraZeneca," we had been co-developing TC-5214 as an adjunct, or add-on, therapy for patients with major depressive disorder who do not respond adequately to initial antidepressant treatment. Under the agreement, AstraZeneca was responsible for 80% and we were responsible for 20% of the costs of the clinical program for TC-5214, except that AstraZeneca was responsible for 100% of development costs required only to obtain or maintain regulatory approval in countries outside the United States and the European Union. In addition, for each of us and AstraZeneca, costs that were not contemplated at execution to be part of the program were in some cases excluded from the cost-sharing arrangement. In the first quarter of 2012, we and AstraZeneca announced that, based on the totality of the results of the Phase 3

development program for TC-5214, a regulatory filing for TC-5214 as an adjunct therapy for major depressive disorder will not be pursued. In April 2012, we received notice of termination of our TC-5214 agreement with AstraZeneca. By the terms of the agreement, the termination became effective in late May 2012. We are responsible for 20% of the remaining costs related to the clinical program for TC-5214 in major depressive disorder as final program activities are completed.

In addition to our two collaboration agreements with AstraZeneca, we previously had a product development and commercialization agreement with GlaxoSmithKline. We received notice of termination of the agreement from GlaxoSmithKline in February 2011, and by the terms of the agreement, the termination became effective in May 2011.

We trace our scientific lineage to a research program initiated by R.J. Reynolds Tobacco Company in 1982 to study the activity and effects of nicotine in the body. We were incorporated in 1997 as a wholly owned subsidiary of R.J. Reynolds Tobacco Company. In August 2000, we became an independent company when we issued and sold stock to venture capital investors. Since our inception, we have had limited revenue from product sales and have funded our operations principally through public and private offerings of equity securities, payments under collaboration and alliance agreements, grants and equipment financing. We have devoted substantially all of our resources to the discovery and development of our product candidates and technologies, including the design, conduct and management of preclinical and clinical studies and related manufacturing, regulatory and clinical affairs, as well as intellectual property prosecution.

Except for a small number of periods in which we generated net income due primarily to the recognition into revenue of amounts received under collaboration agreements, we have not been profitable. As of June 30, 2012, we had an accumulated deficit of $210.2 million. We expect that we may incur losses in future periods as our clinical-stage and preclinical product candidates advance into later-stage development and as we progress our programs and invest in additional product opportunities. Drug development, including clinical trials in particular, is time-consuming, expensive and may never yield a product that will generate revenue.

As a clinical-stage company, our revenues, expenses and results of operations are likely to fluctuate significantly from quarter to quarter and year to year. We believe that period-to-period comparisons of our results of operations should not be relied upon as indicative of our future performance.

Revenue

In January 2010, we received a $200.0 million upfront payment under our now terminated TC-5214 agreement with AstraZeneca, which we recorded as deferred revenue and began recognizing into revenue on a straight-line basis over the estimated development period for TC-5214 to a potential submission of a new drug application to the FDA.

We and AstraZeneca announced in March 2012 that a regulatory filing for TC-5214 as an adjunct therapy for major depressive disorder will not be pursued, and we announced that we and AstraZeneca had determined to discontinue a Phase 2b clinical trial of TC-5214 as a “switch” monotherapy. These events resulted in a change in the estimated period of our substantive performance obligations under our TC-5214 agreement with AstraZeneca. Accordingly, we revised the revenue recognition period for the upfront payment that we previously received and began recognizing the portion of the upfront payment not yet recognized into revenue on a straight-line basis over the remainder of the revised period. As of June 30, 2012, the full amount of the upfront payment had been recognized into revenue.

Pursuant to an April 2010 amendment to our cognitive disorders agreement with AstraZeneca related to an expansion of the development program for TC-5619, we received an $11.0 million payment in May 2010, which we recorded as deferred revenue and recognized into revenue on a straight-line basis over the estimated period of our research and development obligations for TC-5619 under the agreement. We completed our research and development obligations for TC-5619 in the second quarter of 2011. Pursuant to a September 2010 amendment to our cognitive disorders agreement with AstraZeneca related to a clinical trial of AZD3480 in mild to moderate Alzheimer's disease, we received a $500,000 payment in the fourth quarter of 2010 and cumulative payments of $5.5 million in the second half of 2011, all of which we recorded as deferred revenue and are recognizing into revenue on a straight-line basis over the estimated period of our obligations with respect to the Alzheimer's disease study.

As of June 30, 2012, we had received $61.6 million in aggregate upfront fees and milestone payments under our cognitive disorders agreement with AstraZeneca and recognized an additional $26.5 million in collaboration research and development revenue for research services that we provided in the preclinical research collaboration conducted under that agreement. We immediately recognized an aggregate of $32.6 million of the amounts received under the agreement for achievement of milestone events, because each event met the conditions required for immediate recognition under our revenue recognition policy. We deferred recognition of an aggregate of $29.0 million received under the agreement and are recognizing, or in some cases have fully recognized, these deferred amounts into revenue over the periods discussed in Note 5 to our unaudited financial statements included in this quarterly report. As of June 30, 2012, we had $4.9 million of the amounts received under our cognitive disorders agreement with AstraZeneca that remained to be recognized into revenue for future periods.

We received $45.0 million in aggregate payments under our now terminated product development and commercialization agreement and a related stock purchase agreement with GlaxoSmithKline. We immediately recognized an aggregate of $4.0 million of the amounts received under the product development and commercialization agreement for achievement of milestone events, because each event met the conditions required for immediate recognition under our revenue recognition policy. We deferred recognition of $29.5 million received under the two agreements and were recognizing these deferred amounts into revenue over the period discussed in Note 5 to our unaudited financial statements included in this quarterly report. As a result of our receipt in February 2011 of notice of termination of the agreement, we recognized the remaining unrecognized deferred amount, $18.4 million, into revenue for the first quarter of 2011. We recorded $11.5 million of the amounts received under the stock purchase agreement, which reflected the fair value of shares of our common stock sold to GlaxoSmithKline in 2007, as capital in excess of par value.

From time to time we seek and are awarded grants or perform work under grants awarded to third-party collaborators from which we derive revenue. During the third quarter of 2011, we were awarded a third grant from The Michael J. Fox Foundation for Parkinson's Research, or MJFF. Based on the terms of the grant, we received $250,000 upon inception of the grant term and received an additional $250,000 in March 2012. In addition, as of June 30, 2012, we are a named subcontractor under a grant awarded to The California Institute of Technology by the National Institute on Drug Abuse, or NIDA, part of the National Institutes of Health, to fund research on innovative NNR-based approaches to the development of therapies for smoking cessation. Based on

the terms of this arrangement, we received $191,000 in May 2012. Funding for awards under federal grant programs is subject to the availability of funds as determined annually in the federal appropriations process.

Research and Development Expenses

Since our inception, we have focused our activities on our drug discovery and development programs. We record research and development expenses as they are incurred. Research and development expenses represented approximately 64% and 87% of our total operating expenses for the three months ended June 30, 2012 and 2011, respectively, and 75% and 87% for the six months ended June 30, 2012 and 2011, respectively. The decreased percentage of our total operating expenses for the three and six months ended June 30, 2012 represented by research and development expenses resulted primarily from a restructuring that we announced in April 2012 and completed in the second quarter of 2012. Restructuring expenses were approximately 12% and 6% of our total operating expenses for the three and six months ended June 30, 2012, respectively.

We utilize our research and development personnel and infrastructure resources across several programs, and many of our costs are not specifically attributable to a single program. Instead, these costs are directed broadly across our research and development programs. Accordingly, we cannot state precisely our total costs incurred on a program-by-program basis.

We have not received FDA or foreign regulatory marketing approval for any of our product candidates. Our current and future expenditures on development programs are subject to numerous uncertainties in timing and cost to completion. In addition, our strategy includes entering into alliances and collaborations with third parties to participate in the development and commercialization of some of our product candidates. Where a third party has responsibility for or authority over any or all of the non-clinical or clinical development of a particular product candidate, the estimated completion date may be largely under the control of that third party and not under our control. We cannot forecast with any degree of certainty whether any of our product candidates will be subject to future alliances or collaborations or how any such arrangement would affect our development plans or capital requirements. Because of this uncertainty, and because of the numerous uncertainties related to clinical trials and drug development generally, we are unable to determine the duration and completion costs of our research and development programs or whether or when we will generate revenue from the commercialization and sale of any of our product candidates.

General and Administrative Expenses

General and administrative expenses consist principally of salaries and other related costs for personnel in executive, finance, business development, legal and human resource functions. Other general and administrative expenses include expenses associated with stock options granted to personnel in those functions, depreciation and other facility costs not otherwise included in research and development expenses, patent-related costs, insurance costs and professional fees for consulting, legal, accounting and public and investor relations services.

Income Taxes

We have incurred cumulative operating losses through June 30, 2012 and have not paid federal, state or foreign income taxes for any period. For each of the three and six-month periods ended June 30,

2012 and 2011, we did not recognize any income tax expense. Exercises of stock options may result in tax deductions for stock-based compensation in excess of expense recorded for the stock options under U.S. generally accepted accounting principles, or GAAP. For interim periods within years for which net income is forecasted, we recognize the income tax benefit related to the excess tax deductions as an increase to capital in excess of par value, which based on ASC 740 results in an offsetting charge in the same amount to income tax expense. As of June 30, 2012, we had $7.5 million of cumulative tax deductions for periods of net loss from exercises of stock options in excess of expense recorded for the stock options under GAAP. The benefit of these excess tax deductions had not begun to be realized as of June 30, 2012 because we have incurred cumulative net operating losses since inception. Accordingly, the tax benefit will not be recognized as an increase to capital in excess of par value until the excess deductions reduce income taxes payable.

As of June 30, 2012, we had net operating loss carryforwards of $167.3 million for federal income tax purposes and $151.3 million for state income tax purposes. We also had research and development income tax credit carryforwards of $10.8 million for federal income tax purposes and $587,000 for state income tax purposes as of June 30, 2012. The federal net operating loss carryforwards begin to expire in 2024. The state net operating loss carryforwards begin to expire in 2019. The federal and state research and development tax credits begin to expire in 2021. As a result of various factors, including the subjectivity of measurements used in the calculation of particular tax positions taken or that may in the future be taken in our tax returns, it is uncertain whether or to what extent we will be eligible to use the tax credits.

Utilization of the net operating loss carryforwards and credits may be subject to a substantial annual limitation due to ownership change limitations provided by Section 382 of the Internal Revenue Code of 1986, as amended, and similar state provisions. When an ownership change, as defined by Section 382, occurs, an annual limitation is imposed on a company’s use of net operating loss and credit carryforwards attributable to periods before the change. A series of stock issuances gave rise to such an ownership change in December 2004. As a result, an annual limitation is imposed on our use of net operating loss and credit carryforwards that are attributable to periods before the change. In addition, a portion of the net operating loss carryforwards described above may potentially not be usable by us if we experience further ownership changes in the future.

For financial reporting purposes, we have recorded a valuation allowance to fully offset the deferred tax assets related to the carryforwards and tax credits discussed above until it is more likely than not that we will realize any benefit from them.

Fair Value

The carrying amounts of our cash and cash equivalents, investments in marketable securities, accounts receivable, accounts payable and accrued expenses are considered to be representative of their respective fair values due to their short-term natures and, in the case of short-term investments, their market interest rates. Likewise, the carrying amounts of our long-term debts are considered to be representative of their fair value due to their market interest rates. Cash that we do not expect to use to fund our short-term liquidity requirements is invested in U.S. Treasury notes and bonds, U.S. and state government agency-backed certificates, corporate debt securities that are rated at least A quality or equivalent and certificates of deposit. Our investments in marketable securities, which include marketable securities classified on our balance sheet as cash equivalents, are recorded at quoted market prices or observable market inputs and totaled $138.2 million at June 30, 2012.

Critical Accounting Policies and Estimates

Our Management's Discussion and Analysis of Financial Condition and Results of Operations is based on our unaudited financial statements, which have been prepared in accordance with GAAP for interim financial information. The preparation of these financial statements requires us to make estimates and judgments that affect the reported amounts of assets, liabilities, revenues and expenses. On an ongoing basis, we evaluate these estimates and judgments. We base our estimates on historical experience and on various assumptions that we believe to be reasonable under the circumstances. These estimates and assumptions form the basis for making judgments about the carrying values of assets and liabilities and the recording of revenues and expenses that are not readily apparent from other sources. Actual results and experiences may differ materially from these estimates. In addition, our reported financial condition and results of operations could vary if new accounting standards are enacted that are applicable to our business.

Our significant accounting policies are described in Note 2 to our audited financial statements included in our Annual Report on Form 10-K for the year ended December 31, 2011 and in the notes to our unaudited financial statements included in this quarterly report. We believe that our accounting policies relating to revenue recognition, accrued expenses and stock-based compensation are the most critical to understanding and evaluating our reported financial results. We have identified these policies as critical because they both are important to the presentation of our financial condition and results of operations and require us to make judgments and estimates on matters that are inherently uncertain and may change in future periods. These policies are described under the heading "Management's Discussion and Analysis of Financial Condition and Results of Operations - Critical Accounting Policies and Estimates" in our Annual Report on Form 10-K for the year ended December 31, 2011.

Results of Operations

Three Months ended June 30, 2012 and 2011

Net Operating Revenues

	Three Months Ended June 30,		
	2012	2011	Change
	(in thousands)		
Operating revenues:			
License fees and milestones from collaborations	$33,487	$20,699	$12,788
Grant revenue	158	44	114
Net operating revenues	$33,645	$20,743	$12,902

Net operating revenues for the three months ended June 30, 2012 increased by $12.9 million as compared to the three months ended June 30, 2011. The higher net operating revenues for the 2012 period were attributable to increases of $12.8 million in license fees and milestones from collaborations and $114,000 in grant revenue for the 2012 period. The higher license fees and milestones from collaborations for the 2012 period primarily resulted from increases of $14.6 million in recognition into revenue of the upfront payment previously received under our TC-5214 agreement with AstraZeneca and $603,000 in recognition into revenue of payments previously

received under our cognitive disorders agreement with AstraZeneca. The increased revenue recognition for the 2012 period for the upfront payment under our TC-5214 agreement with AstraZeneca resulted from the change in the estimated period of our substantive performance obligations under that agreement discussed above. These increases in revenue recognition were partially offset by a decrease of $2.4 million in recognition of payments related to the development of TC-5619 previously received from AstraZeneca under our cognitive disorders agreement with AstraZeneca, as the TC-5619-related payments became fully recognized in the second quarter of 2011.

We expect our net operating revenues for future 2012 periods to decrease substantially both as compared to the comparable 2011 periods and as compared to the first six months of 2012, primarily due to the upfront payment received under our TC-5214 agreement with AstraZeneca becoming fully recognized in the second quarter of 2012.

Research and Development Expenses

	Three Months Ended June 30,		
	2012	2011	Change
	(in thousands)		
Research and development expenses	$12,512	$20,185	$(7,673)

Research and development expenses for the three months ended June 30, 2012 decreased by $7.7 million as compared to the three months ended June 30, 2011. The lower research and development expenses were principally attributable to decreases of:

- $5.2 million in costs incurred for third-party services associated with our clinical-stage product candidates to $4.6 million for the 2012 period, from $9.8 million for the 2011 period; this decrease was principally due to a lower level of activities for TC-5214, as the Phase 3 development program wound down to completion, and the completion of two Phase 2 clinical trials of TC-6987 during the first quarter of 2012, partially offset by increased costs to support activities during the 2012 period for TC-5619 for which two Phase 2 clinical trials are ongoing;
- $1.5 million in other research and development-related operating costs, including infrastructure costs and stock-based compensation and other compensation-related expenses for research and development personnel, to $7.3 million for the 2012 period, from $8.8 million for the 2011 period; this decrease resulted primarily from the reduction in force that we announced in April 2012 and completed in the second quarter of 2012 that reduced the Company’s workforce by approximately 46%; and
- $955,000 in costs incurred for third-party research and development services in connection with preclinical programs to $587,000 for the 2012 period, from $1.5 million for the 2011 period, as we focused our resources on clinical programs and select late preclinical opportunities.

The costs that we incurred for the three months ended June 30, 2012 and 2011 for third-party services in connection with research and development of clinical-stage product candidates are shown in the table below.

	Three Months Ended June 30,		
	2012	2011	Change
	(in thousands)		
TC-5619	$ 2,534	$ 1,233	$ 1,301
TC-5214	1,413	6,228	(4,815)
AZD3480	1,015	756	259
TC-6987	—	1,577	(1,577)
TC-6499	12	14	(2)
AZD1446	—	—	—

We expect our research and development expenses for the year ending December 31, 2012 to decrease as compared to the year ended December 31, 2011, principally due to the completion of the Phase 3 development program for TC-5214 as an adjunct therapy for major depressive disorder and our reduction in workforce announced in April 2012. We expect to continue to incur significant research and development expenses in 2012 as we progress our pipeline of product candidates, including in particular two ongoing Phase 2 clinical trials of TC-5619 and the ongoing Phase 2b clinical trial of AZD3480 in mild to moderate Alzheimer's disease.

General and Administrative Expenses

	Three Months Ended June 30,		
	2012	2011	Change
	(in thousands)		
General and administrative expenses	$ 4,587	$ 3,129	$ 1,458

General and administrative expenses for the three months ended June 30, 2012 increased by $1.5 million as compared to the three months ended June 30, 2011. The higher general and administrative expenses were principally attributable to increases of $1.6 million in stock-based compensation, salary and other compensation-related expenses for general and administrative personnel and $229,000 in infrastructure costs, partially offset by a decrease of $376,000 in patent-related charges. The increased stock-based compensation, salary and other compensation-related expenses for general and administrative personnel for the 2012 period was primarily due to $1.8 million in recorded severance and stock-based compensation expense, including $1.3 million of non-cash charges, resulting from severance payable to our former chief executive officer, who departed the Company in May 2012, and from the partial accelerated vesting of, and/or extended permitted exercise periods for, some outstanding stock options held by our former chief executive officer and two other executive officers who departed the Company in the first half of 2012. Exclusive of these severance and stock-based compensation charges, general and administrative expenses decreased by $347,000 for the 2012 period as compared to the corresponding 2011 period.

Restructuring Charges

	Three Months Ended June 30, 2012	2011	Change
	(in thousands)		
Restructuring charges	$ 2,312	$ —	$2,312

Restructuring charges for the three months ended June 30, 2012 reflected severance and other charges related to a reduction in force announced on April 25, 2012 as part of a plan to focus our resources on our clinical programs and select late preclinical opportunities. The restructuring was completed by the end of the second quarter of 2012. Upon the completion of the restructuring, our workforce was reduced by 65 employees, or approximately 46%.

Six Months ended June 30, 2012 and 2011

Net Operating Revenues

	Six Months Ended June 30, 2012	2011	Change
	(in thousands)		
Operating revenues:			
License fees and milestones from collaborations	$56,094	$59,621	$(3,527)
Grant revenue	408	116	292
Net operating revenues	$56,502	$59,737	$(3,235)

Net operating revenues for the six months ended June 30, 2012 decreased by $3.2 million as compared to the six months ended June 30, 2011. The lower net operating revenues for the 2012 period were primarily attributable to a decrease of $3.5 million in license fees and milestones from collaborations, partially offset by an increase of $292,000 in grant revenue. The lower license fees and milestones from collaborations for the 2012 period primarily resulted from the recognition into revenue during the 2011 period of the remaining $18.4 million in payments previously received from GlaxoSmithKline that were unrecognized as of the time we received notice of termination of our product development and commercialization agreement with GlaxoSmithKline and a decrease of $4.8 million in recognition of payments related to the development of TC-5619 previously received from AstraZeneca under our cognitive disorders agreement with AstraZeneca, as the TC-5619-related payments became fully recognized in the second quarter of 2011. These decreases were partially offset by increases of $18.5 million in recognition into revenue of the upfront payment previously received under our TC-5214 agreement with AstraZeneca and $1.2 million in recognition into revenue of payments previously received under our cognitive disorders agreement with AstraZeneca.

Research and Development Expenses

	Six Months Ended June 30,		
	2012	2011	Change
	(in thousands)		
Research and development expenses	$30,313	$43,702	$(13,389)

Research and development expenses for the six months ended June 30, 2012 decreased by $13.4 million as compared to the six months ended June 30, 2011. The lower research and development expenses were principally attributable to decreases of:

- $10.2 million in costs incurred for third-party services associated with our clinical-stage product candidates to $13.0 million for the 2012 period, from $23.2 million for the 2011 period; this decrease was principally due to a lower level of activities for TC-5214, as the Phase 3 development program wound down to completion, and the completion of two Phase 2 clinical trials of TC-6987 during the first quarter of 2012; for TC-5619, research and development expenses included comparable spending in both periods for Phase 2 clinical trials;
- $1.6 million in other research and development-related operating costs, including infrastructure costs and stock-based compensation and other compensation-related expenses for research and development personnel, to $15.8 million for the 2012 period, from $17.4 million for the 2011 period; this decrease resulted primarily from the reduction in force discussed above; and
- $1.6 million in costs incurred for third-party research and development services in connection with preclinical programs to $1.5 million for the 2012 period, from $3.1 million for the 2011 period.

The costs that we incurred for the six months ended June 30, 2012 and 2011 for third-party services in connection with research and development of clinical-stage product candidates are shown in the table below.

	Six Months Ended June 30,		
	2012	2011	Change
	(in thousands)		
TC-5214	$4,824	$13,324	$(8,500)
TC-5619	4,621	4,325	296
TC-6987	1,815	3,794	(1,979)
AZD3480	1,784	1,681	103
TC-6499	4	76	(72)
AZD1446	—	—	—

General and Administrative Expenses

	Six Months Ended June 30,		
	2012	2011	Change
	(in thousands)		
General and administrative expenses	$7,657	$6,304	$1,353

General and administrative expenses for the six months ended June 30, 2012 increased by $1.4 million as compared to the six months ended June 30, 2011. The higher general and administrative expenses were principally attributable to increases of $1.5 million in stock-based compensation, salary and other compensation-related expenses for general and administrative personnel and $330,000 in infrastructure costs, partially offset by a decrease of $475,000 in patent-related charges. The increased stock-based compensation, salary and other compensation-related expenses for general and administrative personnel for the 2012 period was primarily due to $1.8 million in recorded severance and stock-based compensation expense, including $1.3 million of non-cash charges, resulting from severance payable to our former chief executive officer, who departed the Company in May 2012, and from the partial accelerated vesting of, and/or extended permitted exercise periods for, some outstanding stock options held by our former chief executive officer and two other executive officers who departed the Company in the first half of 2012. Exclusive of these severance and stock-based compensation charges, general and administrative expenses decreased by $452,000 for the 2012 period as compared to the corresponding 2011 period.

Restructuring Charges

	Six Months Ended June 30,		
	2012	2011	Change
	(in thousands)		
Restructuring charges	$ 2,312	$ —	$2,312

Restructuring charges for the six months ended June 30, 2012 reflected severance and other changes related to a reduction in force announced on April 25, 2012. The restructuring was completed by the end of the second quarter of 2012. Upon the completion of the restructuring, our workforce was reduced by 65 employees, or approximately 46%.

Liquidity and Capital Resources

Sources of Liquidity

We have historically financed our operations and internal growth principally through public and private offerings of equity securities, payments received under collaboration and alliance agreements, grants and equipment financing.

Our cash, cash equivalents and investments in marketable securities were $205.9 million as of June 30, 2012 and $249.3 million as of December 31, 2011. As of June 30, 2012, we had $66.2

million of cash in bank depository accounts and institutional money market funds at Branch Banking and Trust Company, RBC Bank and Wells Fargo & Company. Substantially all of our remaining cash, cash equivalents and investments were invested as of June 30, 2012 in U.S. Treasury notes and bonds, U.S. and state government agency-backed securities, corporate debt securities that are rated at least A quality or equivalent and certificates of deposit.

In September and December 2011, under an amendment to our cognitive disorders agreement with AstraZeneca, we received cumulative payments of $5.5 million in connection with events associated with our ongoing Phase 2b study of AZD3480 as a treatment for mild to moderate Alzheimer's disease. We are eligible to receive substantial additional payments under our cognitive disorders agreement with AstraZeneca, contingent on the achievement of specified milestone events relating to AZD3480 and AZD1446. There is no assurance that we will achieve any particular milestone event under our cognitive disorders agreement with AstraZeneca in any particular period or at all.

Effective in May 2012, our TC-5214 agreement with AstraZeneca was terminated and will no longer be a potential source of future funds.

We have borrowed amounts under two separate loan agreements with a bank that we entered into in July 2010 and April 2008 to fund the purchase of equipment, furnishings, software and other fixed assets. As of June 30, 2012, the aggregate outstanding principal balance under the two loan facilities was $2.4 million and there is no additional borrowing capacity remaining available to us.

Cash Flows

	Six Months Ended June 30,		
	2012	2011	Change
	(in thousands)		
Net cash used in operating activities	$(42,235)	$(45,108)	$ 2,873
Net cash provided by (used in) investing activities	7,252	(36,477)	43,729
Net cash (used in) provided by financing activities	(655)	83,873	(84,528)
Net (decrease) increase in cash and cash equivalents	$(35,638)	$ 2,288	

Net cash used in operating activities for the six months ended June 30, 2012 decreased by $2.9 million as compared to the six months ended June 30, 2011. For the six months ended June 30, 2012, net cash used in operating activities was primarily attributable to $41.3 million in payments made for third-party research and development services in connection with clinical-stage product candidates and preclinical programs and personnel and infrastructure costs, as well as $2.3 million in payments made as a result of our reduction in force announced in April 2012. These cash payments were partially offset by $1.1 million of investment-related cash receipts and an aggregate of $440,000 received under a grant awarded to us and under a subcontract under a grant awarded to a collaborator. For the six months ended June 30, 2011, net cash used in operating activities was primarily the result of aggregate payments of $46.1 million for third-party research and development services in connection with clinical-stage product candidates and preclinical programs, as well as personnel and infrastructure costs, partially offset by $717,000 of interest-related cash receipts. The decrease for the 2012 period in payments made for third-party research and development

services and personnel and infrastructure costs was principally due to our focusing our resources on clinical programs and select late preclinical opportunities and a reduction in infrastructure expenses associated with our reduction in force.

Net cash provided by investing activities for the six months ended June 30, 2012 was $7.3 million as compared to net cash used in investing activities of $36.5 million for the six months ended June 30, 2011, a difference of $43.7 million. Cash used in investing activities reflects the portion of our cash that we allocate to, and the timing of purchases and maturities of, our investments in marketable securities and equipment purchases. Our net sales of investments in marketable securities for the six months ended June 30, 2012 were $7.4 million and occurred primarily to fund our short-term liquidity requirements. Our net purchases of investments in marketable securities for the six months ended June 30, 2011 were $35.5 million and occurred following our receipt of $80.8 million in net proceeds from a public stock offering. Our net equipment purchases decreased by $875,000 to $137,000 for the 2012 period, from $1.0 million for the 2011 period.

Net cash used in financing activities for the six months ended June 30, 2012 was $655,000 as compared to the net cash provided by financing activities of $83.9 million for the six months ended June 30, 2011, a difference of $84.5 million. Cash provided by financing activities for the 2011 period reflected $80.8 million in net proceeds from our public stock offering and $2.1 million in borrowing in June 2011 under an existing loan facility.

Funding Requirements

As of June 30, 2012, we had an accumulated deficit of $210.2 million. We may require additional capital in future periods as our clinical-stage and preclinical product candidates advance into later-stage development and as we progress our programs and invest in additional product opportunities. However, we may generate positive cash flow for any particular reporting period as a result of the timing of milestone events that may be achieved under our cognitive disorders agreement with AstraZeneca and the timing and extent of costs incurred related to development of our clinical-stage and preclinical product candidates. Our future capital requirements are difficult to forecast and will depend on many factors, including:

- the scope, progress, duration, results and cost of clinical trials, as well as non-clinical studies and assessments, of our product candidates and programs;
- whether and to what extent milestone events are achieved for either or both of AZD3480 and AZD1446 under our cognitive disorders agreement with AstraZeneca;
- whether we establish additional strategic alliances, collaborations and licensing or other comparable arrangements, or whether we pursue and complete any merger, acquisition or other significant corporate transaction, and, if we do, the associated terms in each case;
- the extent to which we retain development or commercialization rights or responsibilities for our product candidates that are not subject to our cognitive disorders agreement with AstraZeneca and incur associated development costs, manufacturing costs or costs to establish sales and marketing functions;

- our ability to manage any impact of our workforce reduction announced in April 2012 or the departure of three executive officers in the first half of 2012 on our operations;
- the number and characteristics of product candidates that we pursue and programs that we conduct;
- the costs to satisfy our obligations under our cognitive disorders agreement with AstraZeneca and potential future alliances and collaborations;
- the costs of preparing, filing and prosecuting patent applications and maintaining, enforcing and defending patents and other intellectual property rights;
- the costs of manufacturing-related services for our product candidates in clinical and late preclinical development;
- the costs, timing and outcomes of regulatory reviews or other regulatory actions;
- the timing, receipt and amount of sales or royalties, if any, from our potential products;
- the extent and scope of our general and administrative expenses; and
- the rate of technological advancements for the indications that we target.

Our existing capital resources may not be sufficient to enable us to fund the completion of the development of any of our product candidates. We currently expect our existing capital resources to be sufficient to fund our operations through at least the end of 2015, without taking into account any amounts that we would be entitled to receive if milestone events are achieved under our cognitive disorders agreement with AstraZeneca. However, our operating plan may change as a result of many factors, including those described above, and we may need additional funds sooner than planned to meet operational needs and capital requirements. To the extent our capital resources are insufficient to meet future capital requirements or to the extent the conditions for raising capital are favorable, we may seek to finance future cash needs through public or private equity or debt offerings or other financings. Our future access to additional equity or debt financing, on acceptable terms or at all, is uncertain. We may also seek to finance future cash needs through alliances, collaborations or licensing or other comparable arrangements. Strategic alliances, collaborations or licensing or other comparable arrangements may not be available on acceptable terms or at all.

If adequate funds are not available, we may be required to delay, reduce the scope of or eliminate our research and development programs or obtain funds through arrangements with collaborators or others that may require us to relinquish rights to certain product candidates that we might otherwise seek to develop or commercialize independently. Additionally, any future equity funding may significantly dilute the ownership of our stockholders.

We cannot determine precisely the completion dates and related costs of our research and development programs due to inherent uncertainties in outcomes of clinical trials and regulatory approvals of our product candidates. We cannot be certain that we will be able to successfully complete our research and development projects or establish strategic alliances, collaborations or licensing or other arrangements for our product candidates. Our failure, or the failure of any of our

present or future licensees or collaborators, to complete research and development programs for our product candidates could have a material adverse effect on our financial position or results of operations.

To date, inflation has not had a material effect on our business.

Item 3. Quantitative and Qualitative Disclosures About Market Risk

The primary objectives of our investment activities are to preserve our capital and meet our liquidity needs to fund operations. We also seek to generate competitive rates of return from our investments without assuming significant risk. To achieve our objectives, we maintain a portfolio of cash equivalents and investments in a variety of securities that are of high credit quality based on ratings from commonly relied upon rating agencies. As of June 30, 2012, we had cash, cash equivalents and investments in marketable securities of $205.9 million. Our cash equivalents and investments in marketable securities may be subject to interest rate risk and could fall in value if market interest rates increase. However, because our cash equivalents are invested in accounts with market interest rates and are short term in nature and because our investments in marketable securities are traded in active markets, we believe that our exposure to interest rate risk is not significant and estimate that an immediate and uniform 10% increase in market interest rates from levels as of June 30, 2012 would not have a material impact on the total fair value of our portfolio.

We sometimes contract for the conduct of clinical trials or other research and development and manufacturing activities with contract research organizations, clinical trial sites and contract manufacturers in Europe or elsewhere outside of the United States. We may be subject to exposure to fluctuations in foreign currency exchange rates in connection with these agreements. If the average exchange rate between the currency of our payment obligations under any of these agreements and the U.S. dollar were to strengthen or weaken by 10% against the corresponding exchange rate as of June 30, 2012, we estimate that the impact on our financial position, results of operations and cash flows would not be material. We do not hedge our foreign currency exposures.

We have not used derivative financial instruments for speculation or trading purposes.

Item 4. Controls and Procedures

(a) *Evaluation of Disclosure Controls and Procedures*. Our management, with the participation of our interim principal executive officer and our chief financial officer, evaluated the effectiveness of our disclosure controls and procedures in accordance with Rule 13a-15 under the Exchange Act as of the end of the period covered by this quarterly report. In designing and evaluating our disclosure controls and procedures, our management recognized that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving their objectives, and our management necessarily applied its judgment in evaluating the cost-benefit relationship of possible controls and procedures. Based on the evaluation of our disclosure controls and procedures as of the end of the period covered by this quarterly report, our interim principal executive officer and our chief financial officer concluded that, as of such date, our disclosure controls and procedures were effective to provide reasonable assurance that information required to be disclosed by us in the reports that we file or submit under the Exchange Act is (a) accumulated and communicated to our management, including our interim principal executive officer and our chief financial officer, as appropriate to allow timely decisions regarding required disclosure and (b) recorded, processed, summarized and reported within the time periods specified in the SEC’s rules and forms.

(b) *Changes in Internal Controls*. No change in our internal control over financial reporting (as defined in Rule 13a-15(f) under the Exchange Act) occurred during the quarter ended June 30, 2012 that materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

PART II. OTHER INFORMATION

Item 6. Exhibits

The exhibits listed in the accompanying exhibit index are filed as part of this quarterly report.

Targacept® and NNR Therapeutics™ are trademarks of Targacept, Inc. Any other service marks, trademarks and trade names appearing in this quarterly report are the properties of their respective owners.

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 thereunto duly authorized.

TARGACEPT, INC.

Date: August 9, 2012

/s/ Alan A. Musso
Alan A. Musso
Senior Vice President, Finance and Administration, Chief Financial Officer and Treasurer
(*Authorized Officer*)
(*Principal Financial and Accounting Officer*)

EXHIBIT INDEX

Exhibit Number	Description
10.1	Transition Services Agreement, dated June 5, 2012, by and between the Company and Geoffrey C. Dunbar (incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K dated May 31, 2012).
10.2	Separation Agreement, dated June 21, 2012, by and between the Company and J. Donald deBethizy.
31.1	Certification of the Principal Executive Officer (interim) pursuant to Rule 13a-14(a) and 15d-14(a) of the Securities Exchange Act of 1934, as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
31.2	Certification of the Principal Financial Officer pursuant to Rule 13a-14(a) and 15d-14(a) of the Securities Exchange Act of 1934, as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
32.1	Certification of the Principal Executive Officer (interim) pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
32.2	Certification of the Principal Financial Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
101*	The following materials from the Company's Quarterly Report on Form 10-Q for the quarter ended June 30, 2012, formatted in XBRL (eXtensible Business Reporting Language): (i) the Balance Sheets as of June 30, 2012 and December 31, 2011 (Unaudited); (ii) the Statements of Comprehensive Income for the three and six months ended June 30, 2012 and 2011 (Unaudited); (iii) the Statements of Cash Flows for the six months ended June 30, 2012 and 2011 (Unaudited); and (iv) the Notes to Unaudited Financial Statements.

* Pursuant to Rule 406T of Regulation S-T, the Interactive Data Files in Exhibit 101 hereto are deemed not filed or part of a registration statement or prospectus for purposes of Sections 11 or 12 of the Securities Act of 1933, as amended, are deemed not filed for purposes of Section 18 of the Securities Exchange Act of 1934, as amended, and otherwise are not subject to liability under those sections.

SEPARATION AGREEMENT AND RELEASE

This Separation Agreement and Release (this "**Agreement**") is made by and between J. Donald deBethizy, Ph.D. ("**deBethizy**") and Targacept, Inc. ("**Targacept**" or the "**Company**"), including all Targacept predecessor entities and all affiliated entities, and provides as follows.

RECITALS

A. deBethizy was employed by Targacept pursuant to an Employment Agreement dated August 22, 2000, as amended by Amendment No. 1 to Employment Agreement dated March 13, 2008 (the "**Employment Agreement**").

B. deBethizy's employment with the Company terminated as provided herein.

C. The parties wish to separate on amicable terms, deBethizy wishes to cooperate with Targacept in the transition following deBethizy's separation, and Targacept wishes to provide deBethizy with certain benefits in connection with his separation.

NOW, THEREFORE, for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, Targacept and deBethizy hereby covenant and agree as follows:

AGREEMENT

1. TERMINATION OF EMPLOYMENT. deBethizy's employment with the Company terminated on May 31, 2012 (the "**Termination Date**"). deBethizy understands and agrees that the relationship created by this Agreement is purely contractual and that no employment relationship is intended, or should be inferred, from the performance of the Company's obligations under this Agreement.

2. EFFECTIVENESS OF AGREEMENT. This Agreement shall become effective on the eighth (8th) day after the date of signature of the later of deBethizy or Targacept to sign below (the "**Effective Date**"), but only if deBethizy has not exercised the ADEA Revocation Right as defined in and as provided in Section 12. For clarity, if deBethizy exercises the ADEA Revocation Right, this Agreement shall be null and void and of no force or effect.

3. SEVERANCE PAY AND BENEFITS. In consideration and exchange for deBethizy's promises in this Agreement (including, without limitation, the release and waiver set forth in Section 5), subject to Section 14, the Company will provide deBethizy with (a) the pay and benefits set forth in Section 7(d) of the Employment Agreement (the period during which deBethizy receives severance pay as set forth in Section 7(d)(A) of the Employment Agreement, the "**Severance Period**") and (b) solely to the extent expressly set forth on Exhibit A attached hereto, an extension to the period Dr. deBethizy may exercise certain stock options outstanding as of the Termination Date. All severance payments under this Section 3 shall be subject to all statutory and other required deductions and withholdings. Employee agrees that he shall be responsible for his own tax liabilities arising out of the payments and benefits provided to him under this Section 3 (and, for clarity, Section 7(d) of the Employment Agreement), and he agrees to indemnify and hold the Company harmless from any liabilities arising from the payments and benefits made pursuant to this Section 3.

4. NO PRIOR OBLIGATION. deBethizy acknowledges and agrees that: (a) the payments and benefits that deBethizy receives or for which deBethizy is eligible under this Agreement are of value to deBethizy; (b) in the absence of the general release and promises made by deBethizy hereunder, the Company had no prior legal obligation to provide some or all of such payments and benefits; and (c) deBethizy would not be entitled to some or all of such payments and benefits if not for this Agreement.

5. GENERAL RELEASE AND WAIVER OF CLAIMS BY DEBETHIZY. deBethizy, for himself and for his heirs, successors, assigns, or anyone else claiming under or through deBethizy, hereby forever discharges and releases Targacept, its predecessor, affiliated or subsidiary entities, and its and their respective directors, officers, stockholders, affiliates, employees, agents, representatives, and assigns (all of the foregoing, collectively, the "**Releasees**"), and each of them, from any and all claims, liabilities, actions or causes of action of any kind or character whatsoever, whether at law or in equity, whether known or unknown, whether contingent or absolute. This general release and waiver of claims includes, without limitation, claims for personal injuries, back pay, losses or damage to real or personal property, economic loss or damage of any kind, breach of contract (express or implied), defamation, breach of any covenant of good faith (express or implied), tortious interference with contract, wrongful termination, business or personal tort, misrepresentation, or any other losses or expenses of any kind (whether arising in tort, contract or by statute) arising out of deBethizy's employment relationship with Targacept and any other alleged acts or omissions by the Releasees not expressly excluded herein. deBethizy acknowledges that this general release and waiver of claims applies both to known and unknown claims that may exist between deBethizy and any of the Releasees as of the Effective Date.

deBethizy expressly acknowledges and agrees that this release and waiver of claims includes but is not limited to a release of any and all rights, claims, or causes of action arising under any employment, stock option or other agreement (whether written, oral or implied) or under any state or federal constitution, statute, law, rule, regulation, or common-law principle of tort, contract or equity, except for the obligations of Targacept under this Agreement. This waiver of claims specifically includes but is not limited to any action under the Age Discrimination in Employment Act of 1967, 29 U.S.C. § 621, *et seq*. ("**ADEA**"), Title VII of the Civil Rights Act of 1964, as amended, 42 U.S.C. § 2000e, *et seq*., the Americans with Disabilities Act of 1990, 42 U.S.C. § 12101, *et seq*., the Family and Medical Leave Act, 42 U.S.C. § 2601, *et seq.*, any common law or statutory claim of wrongful discharge, the Employment Retirement Income Security Act of 1976, as amended, and any claims for any entitlement to severance, vacation pay, accrued paid leave, commissions, reimbursements or attorney's fees pursuant to any contract or state or federal law.

By entering into this Agreement, deBethizy understands and agrees that deBethizy does not waive any rights or claims that he might have that arise as a result of any conduct that occurs after the Effective Date or any claims for continuation rights under COBRA.

deBethizy acknowledges and agrees that: (i) any and all monies due and owing to deBethizy from Targacept, including, without limitation, any and all compensation, wages, commissions, benefits, expense reimbursements, vacation/leave time, and any other payments due and owing deBethizy from Targacept, have heretofore been unconditionally and timely paid to deBethizy and that Targacept has satisfied each and every obligation owing to deBethizy, except for: (A) deBethizy's regular base salary through the Termination Date, which shall be paid by Targacept in arrears in accordance with its customary payroll practices; (B) deBethizy's eligible, unused floating holiday and vacation days as of Termination Date; (C) the amounts to be paid to deBethizy by Targacept pursuant to this Agreement; and (D) any reimbursable business expenses actually and reasonably incurred prior to the Termination Date, which shall, to the extent consistent with all applicable Company policies and practices and supported by adequate documentation, be paid by Targacept in accordance with its customary practices; and (ii) there are no stock options, stock grants, equity compensation, bonus commitments or incentive compensation of any kind or nature whatsoever which are due and owing to deBethizy and, except to the extent, if any, resulting from Section 7(d) of the Employment Agreement (first sentence), no such payment or entitlement will accrue or become due and owing after the Termination Date.

6. AGREEMENT TO COOPERATE. In addition to, and not in lieu of, his other obligations hereunder, deBethizy agrees to reasonably cooperate with Targacept during the Severance Period in transitioning his responsibilities and duties at Targacept to such other officers or employees of Targacept as Targacept may direct. deBethizy further agrees to cooperate in all reasonable respects (including, without limitation, by providing sworn testimony in affidavits, depositions, or trials) in assisting in the prosecution or defense of any claims, demands, complaints, or lawsuits filed by or against, or threatened against, any of the Releasees that involve facts or decisions in which or about which he had, or is alleged to have had, input or knowledge for so long as Targacept may require. Targacept will reimburse deBethizy for any out-of-pocket expenses that are both approved by Targacept prior to incurrence by deBethizy and actually and reasonably incurred by deBethizy in the performance of this Section 6.

7. NON-DISPARAGEMENT. Employee agrees that he will refrain from any interference with Targacept's business opportunities and from any and all remarks or conduct that are inconsistent with the non-adversarial spirit of this Agreement, including, without limitation, refraining from comments, oral or written, that disparage, defame, libel, slander, or otherwise damage Targacept, its business or products, or any of the Releasees.

8. FULL CAPACITY. deBethizy attests that he possesses sufficient education and experience to understand fully the extent and impact of the provisions of this Agreement. deBethizy affirms that he is fully competent to execute this Agreement and that he does so voluntarily and without any coercion, undue influence, threat or intimidation of any kind or type. deBethizy represents that he has not assigned or transferred any of the claims hereby released.

9. DISPUTED CLAIMS. It is agreed by both parties that this Agreement shall not in any way be construed, directly or indirectly, as an admission by Targacept that it has acted wrongfully with respect to deBethizy or any other person, or that deBethizy has any rights whatsoever against Targacept, other than as herein stated. Targacept expressly disclaims and denies any liability to or wrongful acts against deBethizy or any other person, on the part of Targacept or any agents, directors, officers, attorneys, employees, or representatives of Targacept.

10. ADVICE TO SEEK COUNSEL. deBethizy acknowledges and agrees that he has been encouraged by Targacept to consult with counsel of his choosing prior to executing this Agreement.

11. CONSIDERATION AND REVIEW PERIOD. deBethizy agrees that deBethizy has been provided twenty-one (21) days in which to consider and review this Agreement and to obtain any legal advice deBethizy deems appropriate from the attorney of deBethizy's choice. deBethizy can accept this Agreement only by signing and returning the signed Agreement to Karen Hicks, Vice President, Human Resources, at Targacept, Inc., 200 East First Street, Suite 300, Winston-Salem, NC 27101. deBethizy understands and agrees that this Agreement shall not become effective or enforceable until it has been signed by both parties and received by the Company.

12. REVOCATION PERIOD. After returning the signed Agreement to the Company, deBethizy may revoke his agreement in Section 5 to waive claims arising under the Age Discrimination in Employment Act of 1967 ("**ADEA**") by providing written notice to Targacept within seven (7) days after the date of signature of the later of deBethizy or Targacept to sign below (the "**ADEA Revocation Right**"). The ADEA Revocation Right will be validly exercised by deBethizy only if such written notice is timely received by Peter A. Zorn, Senior Vice President, Legal Affairs and General Counsel, in both of two manners — at Targacept, Inc., 200 East First Street, Suite 300, Winston-Salem, NC 27101 and by email to pete.zorn@targacept.com. deBethizy acknowledges and agrees that, unless he shall have exercised the ADEA Revocation Right, upon expiration of the above-described revocation period, he shall have forever waived and released Releasees from any and all claims as of the Effective Date, including claims under the ADEA.

13. RETURN OF PROPERTY. On or before the Termination Date, deBethizy shall: (i) return to Targacept all property (including, for clarity but without limitation, Proprietary Information) belonging to Targacept, including, without limitation, all keys, badges, virtual private network (vpn) fobs, phones or other handheld devices, computers, equipment, software, documents, handbooks, manuals, files and other materials and information obtained or furnished to deBethizy in connection with his employment with the Company; (ii) provide to Karen A. Hicks, Vice President, Human Resources, all user names, passwords, access codes and the like in his possession or control, or of which he is aware, related to Targacept or any Targacept database or other property or system; and (iii) remove from any personal computer(s) and media any and all information concerning Targacept that he obtained in connection with his employment with the Company, including without limitation, Targacept's Proprietary Information, as that term is defined in Section 5(b) of the Employment Agreement.

14. PERFORMANCE. Targacept will make the payments and provide the benefits set forth in Section 3 provided deBethizy complies with and meets his obligations under this Agreement and Section 5 of the Employment Agreement. In the event that deBethizy breaches any of his covenants or promises, or causes any covenants or promises to be breached, in addition to any other rights or remedies available to Targacept, at law or otherwise, Targacept's obligation to perform under this Agreement shall automatically terminate and Targacept shall have no further liability or obligation to deBethizy. Alternatively, Targacept may seek injunctive relief to enforce the provisions of this Agreement.

15. ENTIRE AGREEMENT; COMPLETE DEFENSE. The parties acknowledge and represent that, with the express exception of Section 5 of the Employment Agreement, which survives the Termination Date and remains in full force and effect, this Agreement contains the entire agreement between them regarding the matters set forth and that it supersedes all previous negotiations, discussions, communications and understandings regarding such matters. The parties further acknowledge that no representations, inducements, promises or agreements, oral or written, have been made by either party or by anyone acting on behalf of either party that are not embodied in this Agreement. The terms of this Agreement are contractual and not a mere recital and the parties agree that the contents of this Agreement may be used in evidence to demonstrate deBethizy's knowing and valid release of claims as stated herein.

The parties agree that the General Release contained in Section 5 may be treated as a complete defense to any legal, equitable or administrative action that may be brought, instituted or taken by deBethizy, or on his behalf, against any of the Releasees and shall forever be a complete bar to the commencement or prosecution of any claim, demand, lawsuit, charge or other legal proceeding of any kind against any of the Releasees relating to Targacept, Targacept's business, deBethizy's employment with Targacept and the termination of deBethizy's employment with Targacept.

16. BINDING AGREEMENT; ASSIGNMENT. This Agreement shall be binding upon and inure to the benefit of deBethizy, on the one hand, and to Targacept and its successors and permitted assigns, on the other hand. This Agreement and any rights or obligations hereunder may be assigned by the Company to the successor of all or substantially all of its business or to an affiliate of the Company. Neither this Agreement nor any of the rights and obligations of deBethizy hereunder may be assigned or delegated by deBethizy without the Company's prior written consent.

17. AMENDMENT AND WAIVER. This Agreement may not be modified or amended except in a writing signed by deBethizy and an authorized representative of the Company. The failure of either party to assert a right hereunder or to insist upon compliance with any term or condition hereof will not constitute a waiver of that right or excuse a similar subsequent failure to perform any such term or condition by the other party.

18. NO THIRD PARTY BENEFICIARIES. This Agreement is for the sole benefit of deBethizy, on the one hand, and the Company and its permitted successors and assigns, on the other hand, and shall not be construed as conferring any rights on any other party.

19. APPLICABLE LAW AND FORUM. North Carolina law shall govern the interpretation and enforcement of this Agreement, without regard to its conflicts of laws provisions. deBethizy agrees that the exclusive and convenient forum for any civil lawsuit relating to this Agreement shall be any proper state court within Forsyth County in the State of North Carolina or, if jurisdiction exists, the United States District Court for the Middle District of North Carolina.

20. PARTIAL INVALIDITY. The parties agree that the provisions of this Agreement shall be deemed severable and that the invalidity or unenforceability of any portion or any provision shall not affect the validity or enforceability of the other portions or provisions. Such provisions shall be appropriately limited and given effect to the extent that they may be enforceable.

21. COUNTERPARTS. This Agreement may be executed in two (2) counterparts, each of which shall be deemed an original and both of which, together, shall constitute a single agreement. An executed signature page of this Agreement delivered by facsimile transmission or in PDF format via email shall be as effective as the manual exchange of an originally executed signature page

IN WITNESS WHEREOF, the parties have set their hands and seals on this Agreement:

/s/ J. Donald deBethizy — Date: June 21, 2012
J. Donald deBethizy, Ph.D.

TARGACEPT, INC.

By: /s/ Peter A. Zorn — Date: June 21, 2012
Name: Peter A. Zorn
Title: SVP, Legal Affairs, General Counsel
and Member, Office of the Chairman

Exhibit A

June 21, 2012

J. Donald deBethizy
2519 Woodbine Rd.
Winston-Salem, NC 27104

Re: Extension of Option Period for Certain Targacept Stock Options

Dear Don:

I refer you to the Amended and Restated Targacept, Inc. 2000 Equity Incentive Plan (the "**2000 Plan**") and the Targacept, Inc. 2006 Stock Incentive Plan, as amended and restated through March 9, 2011 (the "**2006 Plan**" and, together with the 2000 Plan, the "**Plans**"). Capitalized terms used in this letter and not otherwise defined have the respective meanings given to them in the applicable Plan.

As of the date of this letter, you hold certain options to purchase shares of the common stock of Targacept, Inc. ("**Targacept**") granted to you under a Plan on January 14, 2003, January 31, 2003 (limited to the portion of such stock option with an exercise price per share of $5.10 only), October 31, 2003 (limited to the portion of such stock option with an exercise price per share of $5.10 only), January 26, 2004, August 16, 2006, January 19, 2010, March 29, 2011 and May 4, 2012 (each, a "**Subject Option**"). Each of the Subject Options is evidenced by an Incentive Stock Option Agreement between you and Targacept (each, an "**Agreement**"). The Agreement for each Subject Option is subject in all respects to the terms of the Plan under which such Subject Option was granted.

Note: As of the date of this letter, there are other stock options that have been granted to you under the Plans that remain outstanding but are not Subject Options.

Under the terms of the applicable Agreement and Plan, each Subject Option will expire prior to the end of its 10-year option period if any one of several events related to your termination of employment occurs. In particular: (a) Section 5(c) of each Agreement for Subject Options granted under the 2006 Plan provides that, unless the Administrator determines otherwise, if your employment is terminated for any reason other than disability, death or for cause, the Subject Option must be exercised, if at all, prior to the first to occur of (i) the close of the period of three months next succeeding your termination date or (ii) the close of the Option period; and (b) Section 4 of each Agreement for Subject Options granted under the 2000 Plan and Section 6(c)(iii)(D) of the 2000 Plan, together, provide that if your employment is terminated for any reason other than disability, death or for cause, the Subject Option must be exercised, if at all, prior to the first to occur of (i) the close of the period of ninety (90) days next succeeding the termination date or (ii) the close of the option period. Your employment with Targacept ended May 31, 2012 (your "separation date"), and your separation date is your termination date for purposes of the Subject Options. Accordingly, prior to giving effect to this letter, each Subject Option granted under the (x) 2006 Plan must by its terms be exercised, if at all, prior to August 31, 2012 and (y) 2000 Plan must by its terms be exercised, if at all, prior to August 29, 2012.

The Compensation Committee of Targacept's Board of Directors, as Administrator of the Plans, has determined to extend the period during which you can exercise each Subject Option until the earlier of (a) the expiration date of such Subject Option as set forth in the corresponding Agreement or (b) February 28, 2014. Accordingly, each Subject Option must be exercised, if at all, prior to the earlier of those two dates. Targacept assumes no obligation to advise you or remind of you of the pending expiration date for any Subject Option.

In addition, by the terms of your Employment Agreement with Targacept dated August 22, 2000, as amended on March 13, 2008, and a related Separation Agreement and Release dated on or about the date of this letter, effective as of your separation date, the vesting of stock options that you held as of your separation date, including Subject Options, shall be accelerated to the extent not exercisable as of your separation date, but, for each such stock option, only to the extent such stock option would have become exercisable by May 31, 2013 if you had remained employed by Targacept through that date ("**Accelerated Vesting**"). No further vesting will occur after your separation date.

Except as expressly provided above, all terms of the Subject Options remain unchanged. In addition, except for the Accelerated Vesting expressly provided above, all terms of each stock option that you hold that is not a Subject Option (and, with respect to the Subject Options with grant dates of January 31, 2003 and October 31, 2003, the portions of such options with an exercise price per share of $1.75) remain unchanged, unaffected by the Compensation Committee action or this letter.

Please keep in mind that each Subject Option, to the extent designated as an incentive stock option, will cease to be an incentive stock option, and will automatically become a nonqualified stock option, if it is exercised on or after August 31, 2012. We strongly encourage you to consult with your personal legal or tax advisor regarding the tax consequences of the Subject Options (including the impact of the Compensation Committee action and this letter), the exercise of any Subject Option and the timing of any such exercise.

Please sign this letter where indicated below and return it to me as soon as possible. By signing: (1) you acknowledge receipt of this letter and agree to be bound by the terms of the respective Plans, the respective Agreements and this letter; (2) you, for yourself and your heirs, successors, assigns and anyone else claiming under or through you, forever discharge and release Targacept, its predecessor, affiliated or subsidiary entities, if any, and its and their respective directors, officers, stockholders, affiliates, employees, agents, representatives, and assigns, and each of them, from any and all claims, liabilities, actions or causes of action of any kind or character whatsoever, whether at law or in equity, whether known or unknown, whether contingent or absolute, and any other losses or expenses of any kind (whether arising in tort, contract or by statute), arising out of or with respect to the Subject Options, any other stock options that you hold, any of the Agreements or either of the Plans (collectively, "Released Claims"); and (3) acknowledge that the foregoing release applies both to known and unknown Released Claims that may exist as of date you sign this letter.

[continued on next page]

If you have any questions, please do not hesitate to call me.

Sincerely,

Peter A. Zorn
Senior Vice President, Legal Affairs, General Counsel and
Member, Office of the Chairman

Agreed to and accepted by:

_____

J. Donald deBethizy

Date: , 2012

cc: Karen A. Hicks
Mauri K. Hodges

EXHIBIT 31.1

CERTIFICATION PURSUANT TO RULE 13a-14(a) AND 15d-14(a) OF THE SECURITIES EXCHANGE ACT OF 1934, AS ADOPTED PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002

I, Mark Skaletsky, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of Targacept, Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

(a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

(b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

(c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

(d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

(a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

(b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: August 9, 2012

/s/ Mark Skaletsky
Mark Skaletsky
Chairman of the Board of Directors
(Principal Executive Officer (interim))

EXHIBIT 31.2

CERTIFICATION PURSUANT TO RULE 13a-14(a) AND 15d-14(a) OF THE SECURITIES EXCHANGE ACT OF 1934, AS ADOPTED PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002

I, Alan A. Musso, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of Targacept, Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

(a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

(b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

(c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

(d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

(a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

(b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: August 9, 2012

/s/ Alan A. Musso
Alan A. Musso
Senior Vice President, Finance and Administration, Chief Financial Officer and Treasurer
(*Principal Financial and Accounting Officer*)

EXHIBIT 32.1

CERTIFICATION PURSUANT TO 18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

In connection with the Quarterly Report on Form 10-Q of Targacept, Inc. (the "Company") for the period ended June 30, 2012 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, Mark Skaletsky, hereby certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that, to my knowledge:

(1) The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended; and

(2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date: August 9, 2012

/s/ Mark Skaletsky
Mark Skaletsky
Chairman of the Board of Directors
(Principal Executive Officer (interim))

EXHIBIT 32.2

CERTIFICATION PURSUANT TO 18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

In connection with the Quarterly Report on Form 10-Q of Targacept, Inc. (the "Company") for the period ended June 30, 2012 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, Alan A. Musso, hereby certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that, to my knowledge:

(1) The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended; and

(2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date: August 9, 2012

/s/ Alan A. Musso
Alan A. Musso
Senior Vice President, Finance and Administration, Chief Financial Officer and Treasurer
(*Principal Financial and Accounting Officer*)