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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 March 31, 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 April 30, 2012, the registrant had 33,398,823 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, TC-6987, AZD3480 (TC-1734), AZD1446 (TC-6683) 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 completed clinical trials of TC-5619 or TC-6987 will be replicated in any future clinical trials;
- whether the designs and endpoints of any future clinical trials 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 its plans to progress the development of AZD1446 or on any future development of AZD3480;
- our ability to manage any impact of our workforce reduction announced in April 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 success 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. We anticipate that 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)

	March 31, 2012	December 31, 2011
ASSETS		
Current assets:		
Cash and cash equivalents	$ 88,668	$ 107,283
Investments in marketable securities - short term	87,890	87,721
Receivables from collaborations	319	218
Prepaid expenses	2,467	3,471
Total current assets	179,344	198,693
Investments in marketable securities - long term	47,179	54,266
Property and equipment, net	4,453	5,035
Intangible assets	128	132
Total assets	$ 231,104	$ 258,126
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Accounts payable	$ 1,542	$ 3,489
Accrued expenses	9,840	16,167
Current portion of long-term debt	896	1,241
Current portion of deferred revenue	35,917	57,714
Total current liabilities	48,195	78,611
Long-term debt, net of current portion	1,776	1,986
Deferred revenue, net of current portion	2,431	3,241
Total liabilities	52,402	83,838
Commitments and contingencies		
Stockholders' equity:		
Common stock, $0.001 par value, 100,000,000 shares authorized and 33,397,793 and 33,383,403 shares issued and outstanding at March 31, 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 March 31, 2012 and December 31, 2011	—	—
Capital in excess of par value	403,113	401,149
Accumulated other comprehensive income	227	36
Accumulated deficit	(224,671)	(226,930)
Total stockholders' equity	178,702	174,288
Total liabilities and stockholders' equity	$ 231,104	$ 258,126

See accompanying notes.

TARGACEPT, INC.

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

	Three Months Ended March 31,	
	2012	2011
Operating revenues:		
License fees and milestones from collaborations	$22,607	$38,922
Grant revenue	250	72
Net operating revenues	22,857	38,994
Operating expenses:		
Research and development (including stock-based compensation of $1,094 and $1,237 for the three months ended March 31, 2012 and 2011, respectively)	17,801	23,517
General and administrative (including stock-based compensation of $822 and $926 for the three months ended March 31, 2012 and 2011, respectively)	3,070	3,175
Total operating expenses	20,871	26,692
Income from operations	1,986	12,302
Other income (expense):		
Interest income	299	316
Interest expense	(26)	(31)
Total other income (expense)	273	285
Net income	$ 2,259	$12,587
Basic net income per share	$ 0.07	$ 0.43
Diluted net income per share	$ 0.07	$ 0.41
Weighted average common shares outstanding—basic	33,390,286	28,996,060
Weighted average common shares outstanding—diluted	33,822,010	30,399,750
Unrealized gain on available-for-sale securities, net	191	204
Comprehensive income	$ 2,450	$12,791

See accompanying notes.

TARGACEPT, INC.

STATEMENTS OF CASH FLOWS
(in thousands)
(unaudited)

	Three Months Ended March 31,	
	2012	2011
Operating activities		
Net income	$ 2,259	$ 12,587
Adjustments to reconcile net income to net cash used in operating activities:		
Recognition of deferred revenue	(22,857)	(38,994)
Amortization of premium on marketable securities, net	239	137
Depreciation and amortization	632	600
Stock-based compensation expense	1,916	2,163
Changes in operating assets and liabilities:		
Receivables from collaborations	(101)	311
Other current assets	1,036	685
Accounts payable and accrued expenses	(8,274)	466
Deferred revenue	250	—
Net cash used in operating activities	(24,900)	(22,045)
Investing activities		
Purchase of investments in marketable securities	(41,916)	(29,204)
Proceeds from sale of investments in marketable securities	48,754	24,263
Purchase of property and equipment	(46)	(598)
Net cash provided by (used in) investing activities	6,792	(5,539)
Financing activities		
Principal payments on long-term debt	(555)	(420)
Proceeds from issuance of common stock, net	48	987
Net cash (used in) provided by financing activities	(507)	567
Net decrease in cash and cash equivalents	(18,615)	(27,017)
Cash and cash equivalents at beginning of period	107,283	165,854
Cash and cash equivalents at end of period	$ 88,668	$138,837

See accompanying notes.

TARGACEPT, INC.

NOTES TO UNAUDITED FINANCIAL STATEMENTS
March 31, 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 months ended March 31, 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)
March 31, 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 March 31, 2012 and December 31, 2011, respectively:

March 31, 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	$55,159	$ —	$ —
Corporate debt securities	—	75,436	—
Certificates of deposit	13,000	—	—
Accrued interest	473	—	—
Total cash equivalents and marketable securities	$68,632	$ 75,436	$ —

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)
March 31, 2012

2. Summary of Significant Accounting Policies (continued)

Corporate debt securities 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 three months ended March 31, 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)
March 31, 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)
March 31, 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)
March 31, 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 March 31,	
	2012	2011
Basic:		
Net income	$ 2,259	$ 12,587
Weighted average common shares - basic	33,390,286	28,996,060
Basic EPS	$ 0.07	$ 0.43
Diluted:		
Net income	$ 2,259	$ 12,587
Weighted average common shares - basic	33,390,286	28,996,060
Common share equivalents	431,724	1,403,690
Weighted average common shares - diluted	33,822,010	30,399,750
Diluted EPS	$ 0.07	$ 0.41

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. Shares subject to outstanding stock options that were anti-dilutive and consequently not included in the calculation of common share equivalents totaled 2,467,564 and 946,034 for the three months ended March 31, 2012 and 2011, respectively, calculated on a weighted average basis.

TARGACEPT, INC.

NOTES TO UNAUDITED FINANCIAL STATEMENTS (continued)
March 31, 2012

2. Summary of Significant Accounting Policies (continued)

Common Stock and Stock-Based Compensation

The Company issued 14,390 shares of common stock upon the exercise of stock options during the three months ended March 31, 2012. The Company issued 305,395 shares of common stock upon the exercise of stock options during the year ended December 31, 2011.

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 following reflects changes in accumulated other comprehensive income or loss for the three months ended March 31, 2012.

	(in thousands)
Accumulated other comprehensive income, December 31, 2011	$ 36
Unrealized gain on available-for-sale securities, net	191
Accumulated other comprehensive income, March 31, 2012	$ 227

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)
March 31, 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 March 31, 2012 and December 31, 2011:

March 31, 2012	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Fair Value
		(in thousands)		
Security type				
Cash Equivalents				
Corporate debt securities	$ 8,999	$ —	$ —	$ 8,999
Marketable Securities - Short term				
U.S. Treasury and U.S. or state government agency-backed securities	36,910	45	—	36,955
Corporate debt securities	37,701	27	(1)	37,727
Certificates of deposit	13,000	—	—	13,000
Accrued interest	208	—	—	208
Marketable Securities - Long term				
U.S. Treasury and U.S. or state government agency-backed securities	18,141	65	(2)	18,204
Corporate debt securities - long term	28,617	121	(28)	28,710
Accrued interest	265	—	—	265
Total available-for-sale marketable securities	$143,841	$ 258	$ (31)	$144,068

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

TARGACEPT, INC.

NOTES TO UNAUDITED FINANCIAL STATEMENTS (continued)
March 31, 2012

3. Investments in Marketable Securities (continued)

As of March 31, 2012, the Company held investments in marketable securities with unrealized gains of $258,000 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 March 31, 2012, the Company's investments in marketable securities, including those classified on its balance sheet as cash equivalents, reach maturity between April 2012 and March 2015, with a weighted average maturity date of March 31, 2013.

4. Income Taxes

For each of the three month periods ended March 31, 2012 and 2011, the Company did not recognize any income tax expense. Exercises of stock options during the three months ended March 31, 2012 and 2011 resulted 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 March 31, 2012, the Company had $7,534,000 of cumulative tax deductions from exercises of stock options in periods of net loss 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 March 31, 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)
March 31, 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 $145,000 of the initial fee as revenue for each of the three-month periods ended March 31, 2012 and 2011. The Company recognized $666,000 and $63,000 of the payments received under the amendment for the three months ended March 31, 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.

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.

TARGACEPT, INC.

NOTES TO UNAUDITED FINANCIAL STATEMENTS (continued)
March 31, 2012

5. Strategic Alliance and Collaboration Agreements (continued)

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 development for any indication other than Alzheimer's disease. 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.

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 was recognized into revenue. The Company recognized $43,000 of the payment into revenue for the three months ended March 31, 2011.

TARGACEPT, INC.

NOTES TO UNAUDITED FINANCIAL STATEMENTS (continued)
March 31, 2012

5. Strategic Alliance and Collaboration Agreements (continued)

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 was recognized into revenue. The Company recognized $2,357,000 of the payment into revenue for the three months ended March 31, 2011. 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 March 31, 2012, $5,672,000 of the amounts received remained to be recognized into revenue in future periods.

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.

TARGACEPT, INC.

NOTES TO UNAUDITED FINANCIAL STATEMENTS (continued)
March 31, 2012

5. Strategic Alliance and Collaboration Agreements (continued)

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 $3,411,000 and $7,096,000 for the three months ended March 31, 2012 and 2011, respectively. AstraZeneca's allocable portion of the program costs paid by the Company was $122,000 and $60,000 for the three months ended March 31, 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.

The global development program for TC-5214 as an adjunct therapy for major depressive disorder included four Phase 3 efficacy and tolerability studies and a fifth study designed primarily to evaluate safety. In the fourth quarter of 2011, the Company and AstraZeneca reported that neither of the first two Phase 3 clinical trials of TC-5214 met its primary endpoint. In the first quarter of 2012, the Company and AstraZeneca reported that neither of the remaining two Phase 3 clinical trials of TC-5214 met its primary endpoint and that 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 $21,797,000 and $17,893,000 of the upfront payment as revenue for the three months ended March 31, 2012 and 2011, respectively. As of March 31, 2012, $32,676,000 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 becomes 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.

TARGACEPT, INC.

NOTES TO UNAUDITED FINANCIAL STATEMENTS (continued)
March 31, 2012

5. Strategic Alliance and Collaboration Agreements (continued)

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.

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. Subsequent Event

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 is scheduled to be completed by the end of the second quarter of 2012. The Company recorded $2,386,000 in severance and other charges related to the reduction in force in April 2012. Upon the completion of the restructuring, the Company's workforce will be 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.
- *TC-6987*. TC-6987 is a novel small molecule that modulates the activity of the a7 NNR. We have completed two separate Phase 2 exploratory clinical trials of TC-6987 that were designed to guide the selection of indications for which TC-6987 is best suited for later-stage development and are currently evaluating potential additional development of TC-6987 as a treatment for asthma.
- *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. AstraZeneca has completed various early stage clinical studies of AZD1446, and we announced in January 2012 that we had been informed that AstraZeneca plans to progress the development of AZD1446 as a treatment for Alzheimer's disease.

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 becomes 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 March 31, 2012, we had an accumulated deficit of $224.7 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 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 March 31, 2012, we had $32.7 million of the upfront payment remaining to be 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 March 31, 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 March 31, 2012, we had $5.7 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 March 31, 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. 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 85% and 88% of our total operating expenses for the three months ended March 31, 2012 and 2011, respectively.

We utilize our research and development personnel and infrastructure resources across several programs. We currently have clinical, preclinical and discovery-stage programs, and many of our costs are not specifically attributable to a single program. Instead, these costs are directed to broadly applicable research efforts. 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 preclinical and clinical 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 March 31, 2012 and have not paid federal, state or foreign income taxes for any period. For each of the three-month periods ended March 31, 2012 and 2011, we did not recognize any income tax expense. Exercises of stock options during the three months ended March 31, 2012 and 2011 resulted 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 March 31, 2012, we had $7.5 million of cumulative tax deductions from exercises of stock options in periods of net loss 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 March 31, 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 March 31, 2012, we had net operating loss carryforwards of $152.7 million for federal income tax purposes and $143.2 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 March 31, 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 $144.1 million at March 31, 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 March 31, 2012 and 2011

Net Operating Revenues

	Three Months Ended March 31,		
	2012	2011	Change
	(in thousands)		
Operating revenues:			
License fees and milestones from collaborations	$22,607	$38,922	$(16,315)
Grant revenue	250	72	178
Net operating revenues	$22,857	$38,994	$(16,137)

Net operating revenues for the three months ended March 31, 2012 decreased by $16.1 million as compared to the three months ended March 31, 2011. The lower net operating revenues for the 2012 period were primarily attributable to a decrease of $16.3 million in license fees and milestones from collaborations, partially offset by an increase of $178,000 in grant revenue for the 2012 period. The lower license fees and milestones from collaborations for the 2012 period primarily resulted from decreases of $18.4 million in recognition of payments previously received from GlaxoSmithKline, as all amounts that had yet to be recognized as of the time we received notice

of termination of our agreement with GlaxoSmithKline were recognized for the first quarter of 2011, and $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. These decreases were partially offset by increases of $3.9 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 a change in the estimated period of our substantive performance obligations under that agreement. The higher grant revenue for the 2012 period resulted from a greater amount of grant-funded research performed.

We expect our net operating revenues for the year ended December 31, 2012 to decrease as compared to the year ended December 31, 2011, primarily due to 2012 including recognition of a portion of the upfront payment received under our TC-5214 agreement with AstraZeneca for only a part of the year, as the upfront payment will become fully recognized in mid 2012.

Research and Development Expenses

	Three Months Ended March 31,		
	2012	2011	Change
	(in thousands)		
Research and development expenses	$17,801	$23,517	$(5,716)

Research and development expenses for the three months ended March 31, 2012 decreased by $5.7 million as compared to the three months ended March 31, 2011. The lower research and development expenses were principally attributable to decreases of:

- $5.0 million in costs incurred for third-party services associated with our clinical-stage product candidates to $8.4 million for the 2012 period, from $13.4 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 conclusion of activities conducted to enable potential Phase 2 development of TC-5619 in Alzheimer's disease; for each of TC-5619 and TC-6987, research and development expenses for both periods included comparable spending for Phase 2 clinical trials of such product candidate; and
- $646,000 in costs incurred for third-party research and development services in connection with preclinical programs to $885,000 for the 2012 period, from $1.5 million for the 2011 period.

The costs that we incurred for the three months ended March 31, 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 March 31, 2012	2011	Change
	(in thousands)		
TC-5214	$3,411	$7,096	$(3,685)
TC-6987	2,153	2,217	(64)
TC-5619	2,087	3,092	(1,005)
AZD3480	769	925	(156)
TC-6499	—	62	(62)
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 recently announced reduction in workforce as part of a plan to focus our resources on clinical programs and select preclinical opportunities. 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 March 31, 2012	2011	Change
	(in thousands)		
General and administrative expenses	$3,070	$3,175	$ (105)

General and administrative expenses for the three months ended March 31, 2012 decreased by $105,000 as compared to the three months ended March 31, 2011. The lower general and administrative expenses were primarily attributable to a decrease of $103,000 in stock-based compensation, salary and other compensation-related expenses for general and administrative personnel. The largest component of the decrease was stock-based compensation expense, primarily due to stock option grants made in the first quarter of 2011 with no comparable stock option grants made in the first quarter of 2012.

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 $223.7 million as of March 31, 2012 and $249.3 million as of December 31, 2011. As of March 31, 2012, we had $64.2 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 March 31, 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.

In April 2012, we received notice of termination of our TC-5214 agreement with AstraZeneca, and the agreement 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 March 31, 2012, the aggregate outstanding principal balance under the two loan facilities was $2.7 million and there is no additional borrowing capacity remaining available to us.

Cash Flows

	Three Months Ended March 31,		
	2012	2011	Change
	(in thousands)		
Net cash used in operating activities	$(24,900)	$(22,045)	$ (2,855)
Net cash provided by (used in) investing activities	6,792	(5,539)	12,331
Net cash (used in) provided by financing activities	(507)	567	(1,074)
Net decrease in cash and cash equivalents	$(18,615)	$(27,017)	

Net cash used in operating activities for the three months ended March 31, 2012 increased by $2.9 million as compared to the three months ended March 31, 2011. For the three months ended March 31, 2012, net cash used in operating activities was primarily attributable to $25.6 million in payments made 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 $570,000 of investment related cash receipts and $250,000 received from MJFF under a grant awarded in the third quarter of 2011. For the three months ended March 31, 2011, net cash used in operating activities was also primarily the result of aggregate payments of $22.4 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. The increase in payments made for third-party research and development services primarily resulted from higher fourth quarter 2011 activity for TC-5214 giving rise to amounts payable in the first quarter of 2012, as compared to fourth quarter 2010 activity for TC-5214 giving rise to amounts payable in the first quarter of 2011.

Net cash provided by investing activities for the three months ended March 31, 2012 was $6.8 million as compared to net cash used in investing activities of $5.5 million for the three months

ended March 31, 2011, a difference of $12.3 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 three months ended March 31, 2012 were $6.8 million and occurred primarily to fund our short-term liquidity requirements. Our net purchases of investments in marketable securities for the three months ended March 31, 2011 were $4.9 million and occurred primarily as a result of the timing of maturities and subsequent reinvestment in marketable securities. Our net equipment purchases decreased by $552,000 to $46,000 for the 2012 period, from $598,000 for the 2011 period.

Net cash used in financing activities for the three months ended March 31, 2012 was $507,000 as compared to the net cash provided by financing activities of $567,000 for the three months ended March 31, 2011, a difference of $1.1 million. The change was primarily attributable to a decrease of $939,000 in proceeds received from the exercise of employee stock options to $48,000 for the 2012 period, from $987,000 for the 2011 period.

Funding Requirements

As of March 31, 2012, we had an accumulated deficit of $224.7 million. We may incur operating losses or 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 operating income for any particular reporting period as a result of the recognition into revenue of amounts previously received under our agreements with AstraZeneca, 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 transactions, 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 on our operations and corporate culture;
- the number and characteristics of product candidates that we pursue and programs that we conduct;

- the costs to satisfy our obligations under existing 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 March 31, 2012, we had cash, cash equivalents and investments in marketable securities of $223.7 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 March 31, 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 March 31, 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 chief executive officer and 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 chief executive officer and 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 chief executive officer and 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 March 31, 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: May 9, 2012

/s/ J. Donald deBethizy
J. Donald deBethizy
President and Chief Executive Officer
(Principal Executive Officer)

Date: May 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)

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EXHIBIT INDEX

Exhibit Number	Description
31.1	Certification of the Chief Executive 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.
31.2	Certification of the Chief 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 Chief Executive Officer 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 Chief 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 March 31, 2012, formatted in XBRL (eXtensible Business Reporting Language): (i) the Balance Sheets as of March 31, 2012 and December 31, 2011 (Unaudited); (ii) the Statements of Comprehensive Income for the three months ended March 31, 2012 and 2011 (Unaudited); (iii) the Statements of Cash Flows for the three months ended March 31, 2012 and 2011 (Unaudited); and (iv) the Notes to Unaudited Financial Statements, tagged as blocks of text.

* 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.

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, J. Donald deBethizy, 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: May 9, 2012

/s/ J. Donald deBethizy
J. Donald deBethizy
President and Chief Executive Officer
(Principal Executive Officer)

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: May 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 March 31, 2012 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, J. Donald deBethizy, President and Chief Executive Officer of the Company, 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: May 9, 2012

/s/ J. Donald deBethizy
J. Donald deBethizy
President and Chief Executive Officer
(Principal Executive Officer)

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 March 31, 2012 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, Alan A. Musso, Senior Vice President, Finance and Administration, Chief Financial Officer and Treasurer of the Company, 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: May 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)