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UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, DC 20549

FORM 10-Q

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

For The Quarterly Period Ended June 30, 2010

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** **(Address of Principal Executive Offices)**	**27101** **(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. (Check one):

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

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

As of July 31, 2010, the registrant had 28,618,412 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-5214, AZD3480 (TC-1734), AZD1446 (TC-6683), TC-5619, TC-6987, TC-6499 or any of our other product candidates or programs, such as the size, design, population, conduct, objective or endpoints of any clinical trial, the timing for initiation or completion of or availability of results from any clinical trial, for submission or approval of any regulatory filing (including a new drug application for TC-5214 with the U.S. Food and Drug Administration) or for meeting with regulatory authorities, or the target indication(s) for development;
- the benefits that may be derived from any of our product candidates;
- any payments that AstraZeneca or GlaxoSmithKline may make to us;
- the impact on our alliance of GlaxoSmithKline's shift in discovery research focus announced in February 2010;
- our operations, financial position, taxable income, 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 for many reasons, including our critical accounting policies and risks and uncertainties relating to:

- our dependence on the success of our collaborations with AstraZeneca;
- the control or significant influence that AstraZeneca has over the development of TC-5214, 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 AZD3480 in ADHD or AZD1446 in Alzheimer's disease or ADHD;
- the conduct and results of clinical trials and non-clinical studies and assessments of TC-5214, TC-5619, AZD1446, TC-6987, TC-6499 or any of our other product candidates, including the performance of third parties engaged to execute them and difficulties or delays in subject enrollment and data analysis;

- our ability to establish additional strategic alliances, collaborations and licensing or other arrangements on favorable terms;
- our ability to protect our intellectual property; and
- the timing and success of submission, acceptance and approval of regulatory filings.

You should also review the risks and uncertainties 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, 2009 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 subsequent 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)

	June 30, 2010 (unaudited)	December 31, 2009
ASSETS		
Current assets:		
Cash and cash equivalents	$ 221,626	$ 83,909
Investments in marketable securities - short term	19,450	27,157
Receivables from collaborations	557	201,801
Prepaid expenses and inventories	2,975	1,562
Total current assets	244,608	314,429
Investments in marketable securities - long term	42,650	—
Property and equipment, net	5,367	4,783
Intangible assets, net of accumulated amortization of $138 and $129 at June 30, 2010 and December 31, 2009, respectively	158	167
Total assets	$ 292,783	$ 319,379
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Accounts payable	$ 2,985	$ 1,275
License fee payable	—	16,000
Accrued expenses	5,470	5,267
Current portion of long-term debt	1,481	1,442
Current portion of deferred revenue	86,336	77,243
Total current liabilities	96,272	101,227
Long-term debt, net of current portion	1,215	1,966
Deferred revenue, net of current portion	109,269	147,195
Total liabilities	206,756	250,388
Commitments and contingencies		
Stockholders' equity:		
Common stock, $0.001 par value, 100,000,000 shares authorized; 28,600,506 and 28,226,829 shares issued and outstanding at June 30, 2010 and December 31, 2009, respectively	29	28
Preferred stock, $0.001 par value, 5,000,000 shares authorized; 0 shares issued and outstanding at June 30, 2010 and December 31, 2009	—	—
Capital in excess of par value	304,690	298,263
Accumulated other comprehensive income	31	—
Accumulated deficit	(218,723)	(229,300)
Total stockholders' equity	86,027	68,991
Total liabilities and stockholders' equity	$ 292,783	$ 319,379

See accompanying notes.

TARGACEPT, INC.

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

	Three Months Ended June 30,		Six Months Ended June 30,	
	2010	2009	2010	2009
Operating revenues:				
Milestones and license fees from collaborations	$ 20,704	$ 1,605	$ 39,793	$ 5,725
Collaboration research and development	—	1,121	—	2,665
Product sales, net	—	104	—	355
Grant revenue	198	—	627	226
Net operating revenues	20,902	2,830	40,420	8,971
Operating expenses:				
Research and development (including stock-based compensation of $748 and $293 for the three months ended June 30, 2010 and 2009, respectively, and $1,515 and $580 for the six months ended June 30, 2010 and 2009, respectively)	14,122	11,049	24,729	20,544
General and administrative (including stock-based compensation of $493 and $279 for the three months ended June 30, 2010 and 2009, respectively, and $963 and $566 for the six months ended June 30, 2010 and 2009, respectively)	1,814	1,377	3,636	2,848
Cost of product sales	—	258	—	485
Total operating expenses	15,936	12,684	28,365	23,877
Income (loss) from operations	4,966	(9,854)	12,055	(14,906)
Other income (expense):				
Interest income, net	366	258	740	620
Interest expense	(38)	(57)	(80)	(117)
Total other income (expense)	328	201	660	503
Income (loss) before income taxes	5,294	(9,653)	12,715	(14,403)
Income tax (expense) benefit	(1,512)	—	(2,138)	73
Net income (loss)	$ 3,782	$ (9,653)	$ 10,577	$ (14,330)
Basic net income (loss) per share	$ 0.13	$ (0.39)	$ 0.37	$ (0.57)
Diluted net income (loss) per share	$ 0.13	$ (0.39)	$ 0.35	$ (0.57)
Weighted average common shares outstanding—basic	28,509,619	24,966,347	28,411,083	24,965,632
Weighted average common shares outstanding—diluted	30,152,309	24,966,347	30,082,275	24,965,632

See accompanying notes.

TARGACEPT, INC.

STATEMENTS OF CASH FLOWS
(in thousands)
(unaudited)

	Six Months Ended June 30,	
	2010	2009
Operating activities		
Net income (loss)	$ 10,577	$(14,330)
Adjustments to reconcile net income (loss) to net cash provided by (used in) operating activities:		
Recognition of deferred revenue	(40,154)	(3,025)
Amortization of premium on marketable securities, net	115	—
Depreciation and amortization	928	947
Stock-based compensation expense	2,478	1,146
Excess tax benefits from stock-based compensation	(2,118)	—
Changes in operating assets and liabilities:		
Receivables from collaborations	201,244	386
Prepaid expenses, inventories and accrued interest receivable	(1,421)	8
Accounts payable, license fees payable and accrued expenses	(11,970)	359
Deferred license fee revenue	11,321	—
Net cash provided by (used in) operating activities	171,000	(14,509)
Investing activities		
Purchase of investments	(80,519)	(18,000)
Proceeds from sale of investments	45,500	28,000
Purchase of property and equipment	(1,503)	(122)
Net cash (used in) provided by investing activities	(36,522)	9,878
Financing activities		
Principal payments on long-term debt	(712)	(699)
Proceeds from issuance of common stock, net	1,833	47
Excess tax benefits from stock-based compensation	2,118	—
Net cash provided by (used in) financing activities	3,239	(652)
Net increase (decrease) in cash and cash equivalents	137,717	(5,283)
Cash and cash equivalents at beginning of period	83,909	51,202
Cash and cash equivalents at end of period	$221,626	$ 45,919

See accompanying notes.

TARGACEPT, INC.

NOTES TO UNAUDITED FINANCIAL STATEMENTS
June 30, 2010

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 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, 2009. In the opinion of the Company's management, all adjustments, consisting of normal recurring adjustments, necessary for a fair presentation of its financial position, operating results and cash flows for the periods presented have been included. Operating results for the three and six months ended June 30, 2010 and 2009 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 and Reclassifications

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.

Certain reclassifications have been made to the financial statements for the three months ended June 30, 2009 to conform to the presentation in the financial statements for the three months ended June 30, 2010. These reclassifications had no impact on previously reported net loss for any period.

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 ASC Topic 718, *Compensation – Stock Compensation*).

TARGACEPT, INC.

NOTES TO UNAUDITED FINANCIAL STATEMENTS (continued)
June 30, 2010

2. Summary of Significant Accounting Policies (continued)

The valuation techniques of ASC 820 are based on both observable and unobservable inputs. Observable inputs reflect readily obtainable data from independent sources, and unobservable inputs reflect the Company's market assumptions. ASC 820 classifies these inputs 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.

Level 3 Inputs– unobservable inputs for the asset.

The following tables present the Company's investments in marketable securities that are measured at fair value on a recurring basis as of June 30, 2010 and December 31, 2009, respectively:

June 30, 2010	Quoted Prices in Active Markets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
		(in thousands)	
U.S. Federal Treasury and U.S. government and state government agency securities	$21,198	$ —	$ —
Corporate debt securities	27,425	—	—
Certificates of deposit	13,000	—	—
Accrued interest	477	—	—
Total cash equivalents and marketable securities	$62,100	$ —	$ —

December 31, 2009	Quoted Prices in Active Markets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
		(in thousands)	
Certificates of deposit	$27,000	$ —	$ —
Accrued interest	157	—	—
Total cash equivalents and marketable securities	$27,157	$ —	$ —

TARGACEPT, INC.

NOTES TO UNAUDITED FINANCIAL STATEMENTS (continued)
June 30, 2010

2. Summary of Significant Accounting Policies (continued)

Investments in Marketable Securities

Consistent with the Company's investment policy, the Company's cash is invested with prominent financial institutions in bank depository accounts, certificates of deposit and institutional money market funds and cash that the Company does not expect to need to fund its short-term liquidity requirements is invested in U.S. Treasury notes and bonds, U.S. federal and state agency-backed certificates and corporate debt securities that are rated at least A quality or equivalent.

The Company determines the appropriate classification of marketable securities at the time of purchase and reevaluates such designation as of each balance sheet date. All marketable securities owned during the three and six months ended June 30, 2010 and 2009 were classified as available for sale. Interest and dividend income on investments in marketable securities are included in "Interest income." 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 in stockholders' equity. Accretion of discounts and amortization of premiums and realized gains and losses are included in interest income in the statement of operations.

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 below cost basis is other-than-temporary using available evidence regarding the Company's investments in marketable securities. In the event that the cost basis of a security exceeds its fair value, the Company evaluates, among other factors, the duration of the period that, and the extent to which, the fair value is less than the cost basis, the financial health of and business outlook for the issuer, including industry and sector performance, and 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 operations and establishes a new cost basis in the security.

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 Subtopic 25, *Multiple Element Arrangements*, of ASC 605, 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 this 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, a revenue recognition policy must be determined for each unit. If the arrangement constitutes a single unit of accounting, the revenue recognition policy must be determined for the entire arrangement.

TARGACEPT, INC.

NOTES TO UNAUDITED FINANCIAL STATEMENTS (continued)
June 30, 2010

2. Summary of Significant Accounting Policies (continued)

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 an initial payment upon commencement 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 milestones and license fees from collaborations on a straight-line basis over (1) the estimated development period, to the extent such fees are attributable to a specific licensed product candidate, or otherwise (2) the estimated period of the Company's performance obligations or, where the Company's collaborator has substantially all research and development responsibility, over the estimated research and development period.

Revenue for non-refundable payments based on the achievement of collaboration milestones is recognized as revenue when the milestones are achieved if all of the following conditions are met: (1) achievement of the milestone event was not reasonably assured at the inception of the arrangement; (2) substantive effort is involved to achieve the milestone event; and (3) the amount of the milestone payment appears reasonable in relation to the effort expended, the other milestone payments in the arrangement and the related risk associated with achievement of the milestone event. 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*. Reimbursable amounts received under a cost-sharing arrangement are reflected as a reduction of research and development expense.

Product sales revenue is recognized when goods are shipped, at which point title has passed, net of allowances for returns and discounts. Revenue from a grant is recognized as the Company performs the work and incurs reimbursable costs in accordance with the objectives of the award. 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

TARGACEPT, INC.

NOTES TO UNAUDITED FINANCIAL STATEMENTS (continued)
June 30, 2010

2. Summary of Significant Accounting Policies (continued)

than not that such 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. The Company's effective income tax rates for each of the three and six months ended June 30, 2010 was the Company's actual year-to-date effective 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.

Net Income (Loss) Per Share

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

	Three Months Ended June 30,		Six Months Ended June 30,	
	2010	2009	2010	2009
Basic:				
Net income (loss)	$ 3,782	$ (9,653)	$ 10,577	$ (14,330)
Weighted average common shares - basic	28,509,619	24,966,347	28,411,083	24,965,632
Basic EPS	$ 0.13	$ (0.39)	$ 0.37	$ (0.57)
Diluted:				
Net income (loss)	$ 3,782	$ (9,653)	$ 10,577	$ (14,330)
Weighted average common shares - basic	28,509,619	24,966,347	28,411,083	24,965,632
Common share equivalents	1,642,690	—	1,671,192	—
Weighted average common shares - diluted	30,152,309	24,966,347	30,082,275	24,965,632
Diluted EPS	$ 0.13	$ (0.39)	$ 0.35	$ (0.57)

Common share equivalents consist of the incremental common shares issuable upon the exercise of stock options. For the three and six months ended June 30, 2009, the Company has excluded all common share equivalents from the calculation of Diluted EPS because their effect is antidilutive. As a result, Diluted EPS is identical to Basic EPS for the three and six months ended June 30, 2009.

TARGACEPT, INC.

NOTES TO UNAUDITED FINANCIAL STATEMENTS (continued)
June 30, 2010

2. Summary of Significant Accounting Policies (continued)

For the three and six months ended June 30, 2009, shares subject to dilutive outstanding stock options may have been included in the calculation of common share equivalents using the treasury stock method if the Company had been in a net income position. Shares subject to potentially dilutive outstanding stock options totaled 867,173 and 3,826,598 for the three months ended June 30, 2010 and 2009, respectively, and 773,912 and 3,791,707 for the six months ended June 30, 2010 and 2009, respectively, calculated on a weighted-average basis.

Common Stock and Stock-Based Compensation

The Company issued 255,799 and 373,677 shares of common stock upon the exercise of stock options during the three and six months ended June 30, 2010, respectively. The Company issued 1,062,456 shares of common stock upon the exercise of stock options during the year ended December 31, 2009.

On January 19, 2010, the Company granted to employees options to purchase 841,072 shares of common stock with an estimated aggregate fair value using the Black-Scholes-Merton formula of $11,230,000. The Company is recording this amount, as adjusted for forfeitures, as stock-based compensation on a straight line basis over a period of 16 quarters.

Comprehensive Income (Loss)

Comprehensive income (loss) is comprised of net income (loss) and other comprehensive income. Other comprehensive income includes unrealized gains and losses on the Company's available-for-sale securities, which are excluded from net loss. The following is a reconciliation of net income (loss) to comprehensive income (loss) for the periods presented.

	Three Months Ended June 30,		Six Months Ended June 30,	
	2010	2009	2010	2009
	(in thousands)			
Net income (loss)	$3,782	$(9,653)	$10,577	$(14,330)
Unrealized gain on marketable securities, net	31	—	31	—
Comprehensive income (loss)	$3,813	$(9,653)	$10,608	$(14,330)

TARGACEPT, INC.

NOTES TO UNAUDITED FINANCIAL STATEMENTS (continued)
June 30, 2010

2. Summary of Significant Accounting Policies (continued)

Recent Accounting Pronouncements

In April 2010, the FASB issued Accounting Standards Update No. 2010-17, *Milestone Method of Revenue Recognition*, or ASU 2010-17. ASU 2010-17 defines a milestone event and permits an entity to make an accounting policy election to recognize a payment that is contingent upon achievement of a substantive milestone in its entirety in the period in which the milestone is achieved. ASU 2010-17 is effective for fiscal years beginning on or after June 15, 2010, and for interim periods within those years, and may be applied prospectively to milestones achieved after the adoption date or retrospectively for all periods presented. Early adoption is permitted. The Company does not expect ASU 2010-17 to have a material impact on its financial results.

3. Investments in Marketable Securities

The following is a reconciliation of amortized cost to fair value of available-for-sale marketable securities held at June 30, 2010:

June 30, 2010 *Security type*	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Fair Value
		(in thousands)		
U.S. Federal Treasury and U.S. government and state government agency securities	$ 21,145	$ 57	$ (4)	$ 21,198
Corporate debt securities - short term	5,977	2	(6)	5,973
Corporate debt securities - long term	21,470	31	(49)	21,452
Certificates of deposit	13,000	—	—	13,000
Accrued interest	477	—	—	477
Total available-for-sale marketable securities	$ 62,069	$ 90	$ (59)	$ 62,100

As of June 30, 2010, several of the Company's investments in marketable securities were in an unrealized loss position and had been for less than 12 months. As of December 31, 2009, the Company's investments in marketable securities consisted of certificates of deposit of $27,000,000 and accrued interest of $157,000 for which amortized cost approximated fair value. The Company's investments in marketable securities reach maturity between July 28, 2010 and April 15, 2013, with a weighted average maturity date of approximately November 30, 2011.

TARGACEPT, INC.

NOTES TO UNAUDITED FINANCIAL STATEMENTS (continued)
June 30, 2010

4. Income Taxes

For the three and six months ended June 30, 2010, the Company recognized $1,512,000 and $2,138,000, respectively, of income tax expense primarily as a result of the application of ASC 740 to stock-based compensation. Exercises of stock options during the three and six months ended June 30, 2010 resulted in tax deductions for stock-based compensation in excess of expense recorded for the stock options under GAAP, resulting in income tax benefits of $1,496,000 and $2,118,000, respectively. The Company recognized 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 resulted in an offsetting charge in the same amount to income tax expense. Exercises of stock options in prior periods resulted in $5,716,000 in tax deductions in excess of expense recorded for the stock options under GAAP. Because these excess deductions occurred in periods for which there were no income taxes payable, the tax benefit will not be recognized as an increase to capital in excess of par value unless and until the excess deductions are used to reduce income taxes payable.

For the six months ended June 30, 2010, gross unrecognized tax benefits decreased $134,000 as a result of settlements with taxing authorities. Because the Company has incurred cumulative net operating losses since inception, all tax years remain open to examination by major jurisdictions. An examination of the Company's 2006 federal income tax return was completed in 2009 with no adjustments. An examination of the Company's 2007, 2006 and 2005 North Carolina income tax returns was completed in March 2010 and did not result in any adjustments that have a material impact on the Company's financial statements for any prior period.

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 known as AZD3480 (TC-1734) as a treatment for specified conditions characterized by cognitive impairment, including 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 development, regulatory, first commercial sale and first detail milestone events.

TARGACEPT, INC.

NOTES TO UNAUDITED FINANCIAL STATEMENTS (continued)
June 30, 2010

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 following the completion of additional clinical and non-clinical studies that AstraZeneca conducted during 2006. On December 27, 2006, AstraZeneca communicated its decision to proceed with further development of AZD3480 to the Company. 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 five-year development period for AZD3480. In July 2009, the Company announced that it had been informed by AstraZeneca of AstraZeneca's plans to conduct further development of AZD3480 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 as revenue on a straight-line basis over the remaining estimated development period. The Company recognized $145,000 and $457,000 of the initial fee as revenue for the three months ended June 30, 2010 and 2009, respectively, and $394,000 and $1,020,000 of the initial fee as revenue for the six months ended June 30, 2010 and 2009, respectively.

Under the agreement, the Company is also eligible to receive (1) additional payments of up to $103,000,000 if development, regulatory and first commercial sale milestone events for AZD3480 are achieved only for ADHD, (2) other payments if development, regulatory, first commercial sale and first detail milestone events for AZD3480 are achieved for any other target indication under the agreement and (3) if regulatory approval is achieved for AZD3480 for any particular indication, stepped double-digit royalties on any sales of AZD3480 for that indication or any other indication.

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.

With respect to AZD1446, the most advanced product candidate that arose out of the parties' preclinical research collaboration described below, the Company is also eligible to receive payments of up to $108,000,000, if development, regulatory, first commercial sale and first detail milestone events for AZD1446 are achieved for two target indications under the agreement, and, if regulatory approval is achieved for AZD3480 for any particular indication, stepped royalties on any sales of AZD1446 for that indication or any other indication.

The Company would recognize any revenue based on the achievement of any milestone event under the agreement upon achievement of the milestone event if the Company determines that the revenue satisfies the requirements for immediate recognition under its revenue recognition policy (see Note 2).

TARGACEPT, INC.

NOTES TO UNAUDITED FINANCIAL STATEMENTS (continued)
June 30, 2010

5. Strategic Alliance and Collaboration Agreements (continued)

The Company and AstraZeneca also conducted a multi-year preclinical research collaboration under the agreement. The term of the research collaboration expired in January 2010. While the research collaboration was ongoing, the Company was eligible to receive payments from AstraZeneca for research services performed. The Company recognized collaboration research and development revenue as the research was performed and related expenses were incurred. As a result of the expiration of the research collaboration in January 2010, the Company did not recognize any collaboration research and development revenue for the three or six months ended June 30, 2010. The Company recognized collaboration research and development revenue $1,121,000 and $2,665,000 for the three and six months ended June 30, 2009, respectively.

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. The Company is recognizing the $2,000,000 payment as revenue on a straight-line basis over the estimated development period for TC-5619 to reach Phase 2 clinical proof of concept. Accordingly, the Company recognized $70,000 and $122,000 of the payment as revenue for the three months ended June 30, 2010 and 2009, respectively, and $191,000 and $353,000 of the payment as revenue for the six months ended June 30, 2010 and 2009, respectively.

In April 2010, the Company and AstraZeneca amended the agreement to modify the terms applicable to TC-5619. In conjunction with the amendment, the Company and AstraZeneca agreed to an expanded development program for TC-5619 and the Company received a payment of $11,000,000 to maintain AstraZeneca’s future option to license TC-5619. The Company recorded the $11,000,000 payment as deferred revenue and is recognizing it as revenue on a straight-line basis over the estimated period of the Company’s research and development obligations related to TC-5619. The Company recognized $1,571,000 of the payment as revenue for the three and six months ended June 30, 2010, respectively.

As part of the expanded TC-5619 development program, the Company agreed to conduct a Phase 2 clinical proof of concept trial in adults with ADHD in addition to its ongoing Phase 2 clinical proof of concept trial in cognitive dysfunction in schizophrenia, or CDS. The Company also agreed to conduct specified clinical and non-clinical studies, and AstraZeneca agreed to conduct other specified non-clinical studies, to support the potential advancement of TC-5619 into Phase 2 clinical development for Alzheimer’s disease. A decision as to whether to conduct Phase 2 clinical development of TC-5619 for Alzheimer’s disease would be made in the future. If TC-5619 has been licensed by AstraZeneca or remains subject to AstraZeneca’s license option, any such development for Alzheimer’s disease would be funded by AstraZeneca.

TARGACEPT, INC.

NOTES TO UNAUDITED FINANCIAL STATEMENTS (continued)
June 30, 2010

5. Strategic Alliance and Collaboration Agreements (continued)

Under the amended terms of the agreement, AstraZeneca has an option for an exclusive license to TC-5619 for various cognitive disorders the first time that TC-5619 achieves clinical proof of concept, whether in CDS, ADHD or Alzheimer's disease. The amended terms also allow AstraZeneca to exercise its option to license TC-5619 upon completion of the other clinical and non-clinical studies related to Alzheimer's disease if TC-5619 does not achieve clinical proof of concept in CDS or ADHD. If AstraZeneca exercises its option, it would pay the Company an exercise fee of $30,000,000 and assume responsibility for and fund all future development and commercialization for TC-5619 beyond the currently agreed upon development program. In that event, the Company would be eligible to receive additional payments of up to $212,000,000, if development, regulatory, first commercial sale and first detail milestone events for TC-5619 are achieved in three indications, and stepped double-digit royalties on any future TC-5619 product sales for any indication. If AstraZeneca does not exercise its option the first time that TC-5619 achieves clinical proof of concept, whether in CDS, ADHD or Alzheimer's disease, or if TC-5619 achieves clinical proof of concept in neither CDS nor ADHD and AstraZeneca disclaims any further interest, the Company would retain all of its rights in TC-5619.

In July 2009, the Company received a $10,000,000 payment from AstraZeneca 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. In December 2009, the Company made a payment of $350,000 to UKRF as a result of the $10,000,000 payment received from AstraZeneca. The Company has also received cumulative payments from AstraZeneca of $2,400,000 based on the achievement of milestone events related to the development of product candidates arising under the parties' preclinical research collaboration, including AZD1446. The Company recognized the full amount of each of these payments as revenue upon achievement of the corresponding milestone event because the event met each of the conditions required for immediate recognition under its revenue recognition policy (see Note 2).

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 and the Company is eligible to receive cumulative payments of up to an additional $540,000,000 if specified development, regulatory and first commercial sale milestone events for TC-5214 are achieved, cumulative payments of up to an additional $500,000,000 if specified sales related milestone events for TC-5214 are achieved and significant stepped double-digit royalties on net sales of TC-5214 worldwide. The Company recorded the upfront payment made by AstraZeneca as deferred revenue and is recognizing the payment as revenue on a straight-line basis over the estimated development period for TC-5214 to submission of a new drug application to the U.S. Food and Drug Administration. As of June 30, 2010, the Company forecasts the new drug application submission date to be approximately September 30, 2012. The Company recognized $18,091,000 and $35,984,000 of the upfront payment as revenue for the three and six months ended June 30, 2010,

TARGACEPT, INC.

NOTES TO UNAUDITED FINANCIAL STATEMENTS (continued)
June 30, 2010

5. Strategic Alliance and Collaboration Agreements (continued)

respectively. The Company would recognize any revenue based on the achievement of milestones under the agreement upon achievement of the milestone event if the Company determines that the revenue satisfies the requirements for immediate recognition under its revenue recognition policy (see Note 2).

The Company and AstraZeneca have jointly designed a program for the global development of TC-5214. The initial program is planned to include development of TC-5214 as an adjunct therapy and as a second-line "switch" monotherapy, in each case in patients with major depressive disorder who do not respond adequately to first-line antidepressant treatment. AstraZeneca is responsible for 80% and the Company is responsible for 20% of the costs of the initial program, except that AstraZeneca is responsible for 100% of development costs that are required only to obtain or maintain regulatory approval in countries outside the United States and the European Union. The Company has the right to terminate its obligation to fund its share of the costs of the initial program once it has funded a specified amount. In addition, for each of the Company and AstraZeneca, internal costs that were not contemplated at execution to be part of the initial program may in some cases be excluded from the cost-sharing arrangement. If the Company funds the specified amount and terminates its obligation to fund its share of further costs of the initial program, any future milestones and royalties payable to the Company under this agreement would be reduced by the amount of the Company's unfunded share plus interest at a specified rate, subject to a maximum reduction that may be applied to any one payment. In addition, if the Company and AstraZeneca mutually agree to develop TC-5214 for any indication other than major depressive disorder or in any formulation other than those contemplated by the initial program, the same cost sharing arrangement would apply, except that the Company would have the immediate right to terminate its obligation to fund its share of development costs for the other indication or formulation. If the Company terminates its obligation to fund its share of these other development costs, any future milestones and royalties payable to the Company under this agreement would be reduced by the amount of the Company's unfunded share plus interest at a specified rate, subject to a maximum reduction that may be applied to any one payment, but only from and after the occurrence of a specified event to be agreed upon by the parties.

The Company's portion of the costs of the initial program for the three and six months ended June 30, 2010 was $1,136,000 and $1,537,000, respectively. AstraZeneca's allocable portion of those initial program costs for the three and six months ended June 30, 2010 paid by the Company was $272,000 and $882,000, respectively, which is reflected in the Company's financial statements as a reduction to research and development expense.

AstraZeneca is responsible under the agreement for executing and funding the costs of global commercialization of TC-5214. The Company has retained an option to co-promote TC-5214 to a specified target physician audience in the United States. If the Company exercises its co-promotion option, AstraZeneca would compensate the Company on a per detail basis. AstraZeneca is also responsible under the agreement for the manufacture and supply of TC-5214.

TARGACEPT, INC.

NOTES TO UNAUDITED FINANCIAL STATEMENTS (continued)
June 30, 2010

5. Strategic Alliance and Collaboration Agreements (continued)

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 and would be required to pay to USFRF a percentage of each milestone payment that may be received from AstraZeneca, after deducting from the milestone payment the remaining portion of the Company's projected share of the costs of the initial development program for TC-5214, as well as royalties on any future product sales. The percentage of each milestone payment, net of any deduction, that the Company would be required to pay would be at least 10% and could be greater in specified circumstances. Based on the terms of the license agreement with USFRF and the terms of another existing license agreement with Yale University, the Company expects to pay royalties at an effective worldwide rate in the low single digits and that such effective royalty rate could in some circumstances reach the mid single digits.

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 sets forth the terms of an alliance designed to discover, develop and market product candidates that selectively target specified NNR subtypes in five therapeutic focus areas: pain, smoking cessation, addiction, obesity and Parkinson's disease. In February 2010, GlaxoSmithKline announced plans to cease discovery research in selected neuroscience areas, specifically including pain. Discussions between the Company and GlaxoSmithKline regarding the effects of its strategic change on the alliance are ongoing. Until these discussions are completed, the overall impact is uncertain, but the Company currently anticipates that at least several of the therapeutic focus areas in the alliance will be discontinued. Because the overall impact has not yet been determined, the remainder of this discussion describes the current terms of the alliance.

With respect to each therapeutic focus area in the alliance, if the Company achieves clinical proof of concept with respect to a lead product candidate, GlaxoSmithKline would have an exclusive option for an exclusive license to that lead product candidate and up to two other product candidates in development in the alliance for the same therapeutic focus area on a worldwide basis. If GlaxoSmithKline exercises its option and pays the applicable exercise fee, GlaxoSmithKline would become responsible for using diligent efforts to conduct later-stage development and commercialization of the lead product candidate at its sole expense. GlaxoSmithKline's exclusive license would include all fields of use other than those indications for which the Company has granted development and commercialization rights for product candidates under its collaboration agreement with AstraZeneca focused in cognitive disorders.

TARGACEPT, INC.

NOTES TO UNAUDITED FINANCIAL STATEMENTS (continued)
June 30, 2010

5. Strategic Alliance and Collaboration Agreements (continued)

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 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 is recognizing both amounts into revenue on a straight-line basis over the estimated nine-year period of the Company's research and early development obligations under the agreement. The Company recognized $653,000 of the initial payment and deemed premium as revenue for each of the three-month periods ended June 30, 2010 and 2009 and $1,307,000 of the initial payment and deemed premium as revenue for each of the six-month periods ended June 30, 2010 and 2009.

The terms of the alliance provide for the Company to conduct its research and development activities under the agreement at its sole expense. The Company is, however, eligible to receive additional payments from GlaxoSmithKline, contingent upon the achievement of specified discovery, development, regulatory and commercial milestones as well as stepped double-digit royalties dependent on any future sales for any product licensed by GlaxoSmithKline. The Company would recognize any revenue based on the achievement of milestones under the agreement upon achievement of the milestone event if the Company determines that the revenue satisfies the requirements for immediate recognition under its revenue recognition policy (see Note 2). The amounts that the Company may receive depend on the success of the Company's research and development activities, the timing and achievement of the discovery, development, regulatory and commercial milestone events, the extent to which the specified therapeutic focus areas remain subject to the alliance and whether GlaxoSmithKline exercises any options that are triggered under 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 of this product candidate as of inception of the agreement, achievement of this milestone was reasonably assured within the meaning of the Company's revenue recognition policy. Accordingly, the Company recorded the payment as deferred revenue and is recognizing it into revenue on a straight-line basis over the estimated period of the Company's research and early development obligations under the agreement. The Company recognized $173,000 of the payment as revenue for each of the three-month periods ended June 30, 2010 and 2009 and $346,000 of the payment as revenue for each of the six-month periods ended June 30, 2010 and 2009.

TARGACEPT, INC.

NOTES TO UNAUDITED FINANCIAL STATEMENTS (continued)
June 30, 2010

5. Strategic Alliance and Collaboration Agreements (continued)

Beyond the $6,000,000 payment discussed above, the Company has received an aggregate of $4,000,000 in payments from GlaxoSmithKline for achievement of various milestone events under the agreement related to progress in the Company's preclinical programs, including $2,500,000 for the six months ended June 30, 2009. The Company immediately recognized the full amount of each payment as revenue upon achievement of the corresponding milestone event because each event met each of the conditions required for immediate recognition under its revenue recognition policy (see Note 2).

6. Subsequent Events

Loan Agreement

In July 2010, the Company entered into a loan agreement with a bank that provides aggregate borrowing capacity of $4,000,000 to be provided in up to three individual term loans that the Company may take at any time on or prior to June 30, 2011 to fund the purchase of equipment, furnishings, software and other fixed assets. The Company has not yet borrowed any amount under the loan agreement. Any loan would bear interest, at the Company's discretion on a loan-by-loan basis, at either a variable rate equal to the thirty-day LIBOR plus 2.15%, adjusted monthly on the first day of each month, or a fixed rate equal to the bank's fixed rate cost of funds index corresponding to the term of the loan plus 2.15%. Any loan that the Company takes during 2010 would be interest only through 2010 and then would be re-payable in equal monthly installments of principal and interest over 48 months. Any loan that the Company takes during the first half of 2011 would be interest only through June 30, 2011 and then would be re-payable in equal monthly installments of principal and interest over the next 48 months. Pursuant to the loan agreement, the Company granted a first priority security interest in favor of the bank in the assets acquired with the proceeds of the loan facility.

License Agreement

In August 2010, the Company entered into an exclusive worldwide license agreement with Cornerstone Therapeutics Inc., or Cornerstone. Under the agreement, Cornerstone granted Targacept an exclusive license to exploit pharmaceutical or medicinal products covered by specified patent rights owned or licensed by Cornerstone, as well as Cornerstone's library of preclinical compounds that act on the a7 or other nicotinic receptors. The Company made an upfront payment of $1,500,000 to Cornerstone and Cornerstone will be eligible for additional payments from the Company contingent upon achievement of specified milestones, as well as royalties on any future net sales of products covered by the licensed patents. The Company's accounting policy is to record as research and development expense the acquisition price of in-process research and development if, as of the acquisition date, the extent of its future use cannot be reasonably estimated. The Company is in the process of determining whether a portion of the upfront payment should be capitalized. To the extent not capitalized, the Company will record as research and development expense the upfront payment in the third quarter of 2010.

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, 2009, 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 and under "Risk Factors" in Item 1A of Part I of our Annual Report on Form 10-K for the year ended December 31, 2009 and 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 where we believe there are significant medical need and commercial potential, as well as proprietary drug discovery technologies. We have two collaboration agreements with AstraZeneca, one that we entered into in December 2009 for the global development and commercialization of TC-5214 as a treatment of major depressive disorder, or MDD, and refer to in this quarterly report as our "TC-5214 agreement with AstraZeneca" and the other focused in cognitive disorders that we entered into in December 2005 and refer to in this quarterly report as our "cognitive disorders agreement with AstraZeneca." We also have an alliance agreement with GlaxoSmithKline. Our most advanced product candidates are described below:

- *TC-5214*. TC-5214 is a nicotinic channel blocker that is thought to derive antidepressant activity by modulating the activity of various NNR subtypes. We are co-developing TC-5214 with AstraZeneca under our TC-5214 agreement with AstraZeneca as an adjunct (or add-on) therapy for patients with MDD who do not respond adequately to first-line antidepressant treatment. Phase 3 clinical trials of TC-5214 are ongoing. In addition, we expect a Phase 2 clinical trial of TC-5214 as a second-line "switch" monotherapy to initiate in the second half of 2010.
- *TC-5619*. TC-5619 is a novel small molecule that modulates the activity of the a7 NNR. We have two Phase 2 clinical trials of TC-5619 ongoing, one in cognitive dysfunction in schizophrenia, or CDS, and one in adults with attention deficit/hyperactivity disorder, or ADHD. We are also conducting non-clinical studies to support the potential advancement of

TC-5619 into Phase 2 clinical development for Alzheimer's disease. A decision as to whether to conduct Phase 2 clinical development of TC-5619 for Alzheimer's disease would be made in the future. AstraZeneca has the future right to license TC-5619 for various cognitive disorders on specified terms.

- *AZD3480 (TC-1734).* AZD3480 is a novel small molecule that modulates the activity of the a4ß2 NNR and is in development for ADHD under our cognitive disorders agreement with AstraZeneca. AstraZeneca is continuing to assess AZD3480 in non-clinical studies to support further development across the broad ADHD patient population. If AstraZeneca determines that AZD3480 is suitable for advancement as a potential ADHD therapy, we expect the next trial would be a Phase 2b clinical trial in adults with ADHD and would initiate in the first quarter of 2011.
- *AZD1446 (TC-6683).* AZD1446 is a novel small molecule that modulates the activity of the a4ß2 NNR and, like AZD3480, is in development under our cognitive disorders agreement with AstraZeneca. We discovered and advanced AZD1446 as part of a multi-year research collaboration conducted under the agreement. AstraZeneca has a number of clinical trials of AZD1446 ongoing, including among others a clinical trial designed to assess safety and tolerability in subjects with Alzheimer's disease and a Phase 2 clinical trial in adults with ADHD. We expect AstraZeneca to conduct further development of AZD1446 in either or both of Alzheimer's disease and ADHD.
- *TC-6987.* TC-6987 is a novel small molecule that modulates the activity of the a7 NNR. We have completed a Phase 1 single rising dose clinical trial and are currently conducting a Phase 1 multiple rising dose clinical trial of TC-6987. We are considering multiple indications characterized by inflammation for potential Phase 2 clinical development of TC-6987 and we expect to initiate the first Phase 2 trial in the fourth quarter of 2010.
- *TC-6499.* TC-6499 is a product candidate that we previously evaluated and are no longer developing as a pain treatment. Based on the activity of TC-6499 at certain NNR subtypes located in the gastrointestinal tract, we believe it may have potential as a treatment for certain gastrointestinal disorders. We initiated an exploratory Phase 2a study of TC-6499 as a treatment for constipation-predominant irritable bowel syndrome in the second quarter of 2010.

Under our TC-5214 agreement with AstraZeneca, we and AstraZeneca have jointly designed an initial development program that is planned to include development of TC-5214 as an adjunct therapy and as a second-line "switch" monotherapy, in each case in patients with MDD who do not respond adequately to first-line antidepressant treatment. AstraZeneca is responsible for 80% and we are responsible for 20% of the costs of the initial program, except that AstraZeneca is responsible for 100% of development costs that are required only to obtain or maintain regulatory approval in countries outside the United States and the European Union. We have the right to terminate our obligation to fund our share of the costs of the initial program once we have funded a specified amount. In addition, for each of us and AstraZeneca, internal costs that were not contemplated at execution to be part of the initial program may in some cases be excluded from the cost-sharing arrangement. If we fund the specified amount and terminate our obligation to fund our share of further costs of the initial program, any future milestones and royalties payable to us under the agreement would be reduced by the amount of our unfunded share plus interest at a specified rate, subject to a maximum reduction that may be applied to any one payment. AstraZeneca is responsible for executing and funding the costs of global commercialization of TC-5214.

Under our cognitive disorders agreement with AstraZeneca:

- we are responsible for conducting and funding the ongoing Phase 2 clinical trials of TC-5619 in CDS and in adults with ADHD, as well as specified clinical and non-clinical studies to support the potential advancement of TC-5619 into Phase 2 clinical development for Alzheimer's disease; AstraZeneca is responsible for conducting and funding other specified non-clinical studies to support the potential advancement of TC-5619 into Phase 2 clinical development for Alzheimer's disease;
- 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; 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, subject to specified limits.

In addition to our two collaboration agreements with AstraZeneca, we have an alliance agreement with GlaxoSmithKline that is designed to discover, develop and market product candidates that selectively target specified NNR subtypes in specified therapeutic focus areas. In February 2010, GlaxoSmithKline announced plans to cease discovery research in selected neuroscience areas. Although the overall impact of GlaxoSmithKline's strategic change on our alliance has not yet been finally determined, we currently anticipate that at least several therapeutic focus areas in the alliance will be discontinued.

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 RJR. 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 the sale of equity securities, revenue from collaboration agreements, grants and equipment and building lease incentive 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.

We generated net income for the three and six months ended June 30, 2010 due primarily to recognition into revenue of a portion of the upfront payment received under our TC-5214 agreement with AstraZeneca. We have also generated net income for two other quarterly periods since our inception, in each case due primarily to the achievement in each period of a single milestone event related to AZD3480 under our cognitive disorders agreement with AstraZeneca. Except for these periods, we have not been profitable and 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, invest in additional product opportunities and expand our research and development infrastructure. As of June 30, 2010, we had an accumulated deficit of $218.7 million. Clinical trials and preclinical studies are time-consuming, expensive and may never yield a product that will generate revenue.

As a development-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 are recognizing into revenue on a straight-line basis over the estimated development period for TC-5214 to submission of a new drug application to the U.S. Food and Drug Administration, or FDA. We are eligible under our TC-5214 agreement with AstraZeneca to receive additional payments of over $1.0 billion if development, regulatory, first commercial sale and specified sales related milestone events for TC-5214 are achieved and stepped double-digit royalties on any future TC-5214 product sales. As of June 30, 2010, we had $163.6 million of the deferred portion of the upfront payment remaining to be recognized into revenue. Pursuant to the April 2010 amendment to our cognitive disorders agreement with AstraZeneca, we received an $11.0 million payment in May 2010, which we recorded as deferred revenue and are recognizing into revenue on a straight-line basis over the estimated period of our research and development obligations related to TC-5619.

As of June 30, 2010 we had received $55.4 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 under the agreement. As of June 30, 2010, we had also received $45.0 million in aggregate payments under our alliance agreement with GlaxoSmithKline. We initially deferred recognition of an aggregate of $52.5 million received under our cognitive disorders agreement with AstraZeneca and from GlaxoSmithKline and are recognizing these deferred amounts into revenue over the periods discussed in Note 5 to our unaudited financial statements included in this quarterly report. As of June 30, 2010, we had $31.7 million of the deferred amounts remaining to be recognized in future periods.

We acquired rights to Inversine, which is our only product approved for marketing by the FDA, in August 2002. Effective September 30, 2009, we discontinued Inversine. Sales of Inversine generated net revenue of $104,000 and $355,000 for the three and six months ended June 30, 2009, respectively.

From time to time we seek and are awarded grants or work to be performed under grants awarded to third-party collaborators from which we derive revenue. As of June 30, 2010, we have been awarded two grants from The Michael J. Fox Foundation for Parkinson’s Research, or MJFF. One of the grants is to fund preclinical research involving the use of compounds that modulate NNRs to address Levodopa-induced abnormal involuntary movements, known as dyskinesias, and we have received aggregate payments of $641,000 from MJFF since August 2009 in connection with this grant. The other grant is to fund research to identify NNR-related biomarkers relevant to Parkinson’s disease, and we expect to receive an aggregate of $304,000 from MJFF over a one-year period that

began in December 2009 in connection with this grant. In addition, as of June 30, 2010, 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. We have received approximately $1.1 million in the aggregate over a five-year research term that began in July 2006 in connection with the NIDA grant. 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 89% and 87% of our total operating expenses for the three months ended June 30, 2010 and 2009, respectively, and 87% and 86% of our total operating expenses for the six months ended June 30, 2010 and 2009, respectively.

We utilize our research and development personnel and infrastructure resources across several programs. We currently have clinical, preclinical and early research 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 that are in development. Our current and future expenditures on preclinical and clinical development programs are subject to numerous uncertainties in timing and cost to completion. In particular, 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 preclinical 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 certainty whether AstraZeneca will exercise any options to license particular product candidates that become exercisable under the terms of our cognitive disorders agreement with AstraZeneca, whether GlaxoSmithKline will exercise any options to license particular product candidates that become exercisable under the terms of our alliance agreement with GlaxoSmithKline, 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 in development.

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 net operating losses through December 31, 2009 and have not paid federal, state or foreign income taxes for any period through December 31, 2009. We expect that we may incur taxable income, before giving effect to net operating loss carryforwards, for the year ending December 31, 2010. Accordingly, for the three and six months ended June 30, 2010, we recognized $1.5 million and $2.1 million, respectively, of income tax expense primarily as a result of the application of Accounting Standards Codification Topic 740, *Income Taxes*, or ASC 740, to stock-based compensation. Exercises of stock options during the three and six months ended June 30, 2010 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, resulting in income tax benefits of $1.5 million and $2.1 million, respectively. We recognized 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 resulted in an offsetting charge in the same amount to income tax expense. As of June 30, 2010, we had net operating loss carryforwards of $100.4 million for federal income tax purposes and $100.2 million for state income tax purposes. We also had research and development income tax credit carryforwards of $7.4 million for federal income tax purposes and $1.3 million for state income tax purposes as of June 30, 2010. The federal net operating loss carryforwards begin to expire in 2020. The state net operating loss carryforwards begin to expire in 2015. 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. As a result of a series of stock issuances, we had such an ownership change in November 2002. Consequently, an annual limitation is imposed on our use of net operating loss and credit carryforwards that are attributable to periods before November 2002. 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 asset related to these carryforwards and the tax credits because the likelihood that we will be eligible to use or realize any benefit from them is uncertain.

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 nature 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 need to fund our short-term liquidity requirements is invested in U.S. Treasury notes and bonds, U.S. federal and state agency-backed certificates and corporate debt securities that are rated at least A quality or equivalent. Our investments in marketable securities of $62.1 million at June 30, 2010 are recorded at fair value using quoted market prices.

Critical Accounting Policies and Estimates

Our management's discussion and analysis of our financial condition and results of operations are based on our unaudited financial statements, which have been prepared in accordance with U.S. generally accepted accounting principles 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, 2009 and in the notes to our 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 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, 2009.

Results of Operations

Three Months ended June 30, 2010 and 2009

Net Operating Revenues

	Three Months ended June 30,		
	2010	2009	Change
		(in thousands)	
Operating revenues:			
Milestones and license fees from collaborations	$20,704	$1,605	$19,099
Collaboration research and development	—	1,121	(1,121)
Product sales, net	—	104	(104)
Grant revenue	198	—	198
Net operating revenues	$20,902	$2,830	$18,072

Net operating revenues for the three months ended June 30, 2010 increased by $18.1 million as compared to the three months ended June 30, 2009. The higher net operating revenues were primarily attributable to an increase of $19.1 million in milestones and license fees from collaborations revenue, partially offset by a decrease of $1.1 million in collaboration research and

development revenue. The increase in milestones and license fees from collaborations revenue reflected recognition of $18.1 million of the $200.0 million upfront payment received under our TC-5214 agreement with AstraZeneca, which we entered into in December 2009, and $1.6 million of the $11.0 million payment received under an April 2010 amendment to our cognitive disorders agreement with AstraZeneca to modify the terms applicable to TC-5619, partially offset by a decrease of $313,000 of license fees derived from the cognitive disorders agreement as a result of the expiration of the term of the research collaboration in January 2010. The decrease in collaboration research and development revenue for the 2010 period resulted from the completion of the preclinical research collaboration under our cognitive disorders agreement. We plan to recognize the remaining $163.6 million of the upfront payment received under the TC-5214 agreement on a straight-line basis over the estimated development period for TC-5214 to submission of a new drug application to the FDA and expect that such recognition will result in increased net operating revenues for future 2010 reporting periods as compared to the corresponding 2009 periods. As of June 30, 2010, we forecast the new drug application submission date for TC-5214 to be approximately September 30, 2012. We do not expect to record any collaboration research and development revenue from the cognitive disorders agreement for 2010 or any future period.

Research and Development Expenses

	Three Months ended June 30,		
	2010	2009	Change
	(in thousands)		
Research and development expenses	$14,122	$11,049	$3,073

Research and development expenses for the three months ended June 30, 2010 increased by $3.1 million as compared to the three months ended June 30, 2009. The higher research and development expenses were principally attributable to increases of:

- $2.0 million in costs incurred for third-party research and development services in connection with our clinical-stage product candidates (including costs for clinical trial activities, formulation activities, production of clinical trial materials, and pharmacology, toxicology and other non-clinical studies) to $5.8 million for the 2010 period from $3.8 million for the 2009 period; this increase was principally due to the advancement of TC-5619 into Phase 2 clinical development for two indications and the advancement of TC-6987 into later-stage Phase 1 clinical development, partially offset by reduced spending for TC-5214 and AZD3480 as a result of the completion of Phase 2 clinical trials in 2009;
- $808,000 in stock-based compensation, salary and other compensation-related expenses for research and development personnel to $4.3 million for the 2010 period from $3.5 million for the 2009 period; the largest component of this increase was stock-based compensation expense and was primarily due to a significantly higher fair value calculated for each stock option granted during 2010 as compared to the fair value calculated for stock options granted during and prior to the 2009 period; and
- $649,000 in other research and development expenses, including infrastructure costs, to $3.4 million for the 2010 period from $2.8 million for the 2009 period; this increase was primarily due to increases in the number of employees and depreciable equipment utilized in our research and development function.

These increases were partially offset by a decrease of $383,000 in costs incurred for third-party research and development services in connection with our preclinical programs to $673,000 for the 2010 period from $1.1 million for the 2009 period. The reduced spending for the 2010 period in connection with our preclinical programs primarily resulted from the uncertainty surrounding the continuation of some of the therapeutic focus areas of our alliance with GlaxoSmithKline.

The costs that we incurred for the three months ended June 30, 2010 and 2009 for third-party services in connection with research and development of clinical-stage product candidates are shown in the table below:

	Three months ended June 30,		
	2010	2009	Change
	(in thousands)		
TC-5619	$ 2,604	$ 687	$1,917
TC-5214	1,482	2,025	(543)
TC-6987	1,432	606	826
TC-6499	202	246	(44)
AZD3480 (TC-1734)	18	191	(173)

We expect our research and development expenses to increase for future 2010 reporting periods as compared to the corresponding 2009 periods, principally due to our cost sharing obligations for the ongoing Phase 3 development program for TC-5214 and anticipated development activities for TC-5619 and TC-6987.

General and Administrative Expenses

	Three months ended June 30,		
	2010	2009	Change
	(in thousands)		
General and administrative expenses	$ 1,814	$ 1,377	$ 437

General and administrative expenses for the three months ended June 30, 2010 increased by $437,000 as compared to the three months ended June 30, 2009. The higher general and administrative expenses were primarily attributable to an increase of $467,000 before routine overhead reclassifications in stock-based compensation, salary and other compensation-related expenses for general and administrative personnel. The largest component of the increase was stock-based compensation expense and was primarily due to a significantly higher fair value calculated for each stock option granted during 2010 as compared to the fair value calculated for stock options granted during and prior to the 2009 period.

Other Income and Expense

	Three months ended June 30, 2010	2009	Change
	(in thousands)		
Interest income	$ 366	$ 258	$ 108
Interest expense	38	57	(19)

Interest income for the three months ended June 30, 2010 increased by $108,000 as compared to the three months ended June 30, 2009. The increase reflected a significantly increased cash balance and the changes in our investment portfolio to include U.S. Treasury notes and bonds, U.S. federal and state agency-backed certificates and corporate debt securities, partially offset by lower market interest rates. Interest expense for the three months ended June 30, 2010 decreased by $19,000 as compared to the three months ended June 30, 2009.

Income Tax Expense

	Three months ended June 30, 2010	2009	Change
	(in thousands)		
Income tax expense	$ 1,512	$ —	$1,512

Income tax expense for the three months ended June 30, 2010 increased by $1.5 million as compared to the three months ended June 30, 2009. The change was primarily due to tax deductions for stock-based compensation for the 2010 period in excess of expense recorded under GAAP for the corresponding stock options as a result of an increase in the number of stock options exercised during the 2010 period and our net income position for the 2010 period. Tax deductions in excess of recorded expense are only recognized for periods with net income.

Six Months ended June 30, 2010 and 2009

Net Operating Revenues

	Six Months ended June 30, 2010	2009	Change
	(in thousands)		
Operating revenues:			
Milestones and license fees from collaborations	$39,793	$5,725	$34,068
Collaboration research and development	—	2,665	(2,665)
Product sales, net	—	355	(355)
Grant revenue	627	226	401
Net operating revenues	$40,420	$8,971	$31,449

Net operating revenues for the six months ended June 30, 2010 increased by $31.4 million as compared to the six months ended June 30, 2009. The higher net operating revenues were primarily attributable to an increase of $34.1 million in milestones and license fees from collaborations revenue, partially offset by a decrease of $2.7 million in collaboration research and development revenue. The increase in milestones and license fees from collaborations revenue reflected recognition of $36.0 million of the $200.0 million upfront payment received under our TC-5214

agreement with AstraZeneca and $1.6 million of the $11.0 million payment received under the April 2010 amendment to our cognitive disorders agreement with AstraZeneca, partially offset by decreases of $2.5 million in aggregate payments received from GlaxoSmithKline upon achievement of milestone events under our alliance agreement and $521,000 in license fees derived from the cognitive disorders agreement as a result of the expiration of the term of the research collaboration in January 2010. The decrease in collaboration research and development revenue for the 2010 period resulted from the completion of the preclinical research collaboration under the cognitive disorders agreement.

Research and Development Expenses

	Six Months ended June 30,		
	2010	2009	Change
		(in thousands)	
Research and development expenses	$24,729	$20,544	4,185

Research and development expenses for the six months ended June 30, 2010 increased by $4.2 million as compared to the six months ended June 30, 2009. The higher research and development expenses were principally attributable to increases of:

- $2.6 million in costs incurred for third-party research and development services in connection with our clinical-stage product candidates to $8.6 million for the 2010 period from $6.0 million for the 2009 period; this increase was principally due to the advancement of TC-5619 into Phase 2 clinical development for two indications and the advancement of TC-6987 into later-stage Phase 1 clinical development, partially offset by reduced spending for TC-5214 as a result of the completion of a Phase 2 clinical trial in 2009;
- $1.5 million in stock-based compensation, salary and other compensation-related expenses for research and development personnel to $8.5 million for the 2010 period from $7.0 million for the 2009 period; the largest component of this increase was stock-based compensation expense and was primarily due to a significantly higher fair value calculated for each stock option granted during 2010 as compared to the fair value calculated for stock options granted during and prior to the 2009 period; and
- $1.2 million in other research and development expenses, including infrastructure costs, to $6.7 million for the 2010 period from $5.5 million for the 2009 period; this increase was primarily due to increases in the number of employees and depreciable equipment utilized in our research and development function.

These increases were partially offset by a decrease of $1.2 million in costs incurred for third-party research and development services in connection with our preclinical programs to $927,000 for the 2010 period from $2.2 million for the 2009 period. The reduced spending for the 2010 period in connection with our preclinical programs primarily resulted from the uncertainty surrounding the continuation of some of the therapeutic focus areas of our alliance with GlaxoSmithKline.

The costs that we incurred for the six months ended June 30, 2010 and 2009 for third-party research and development services in connection with clinical-stage product candidates are shown in the table below:

	Six months ended June 30,		
	2010	2009	Change
	(in thousands)		
TC-5619	$3,975	$1,566	$ 2,409
TC-6987	2,237	613	1,624
TC-5214	2,028	3,368	(1,340)
TC-6499	340	226	114
AZD3480 (TC-1734)	18	208	(190)

General and Administrative Expenses

	Six months ended June 30,		
	2010	2009	Change
	(in thousands)		
General and administrative expenses	$3,636	$2,848	$ 788

General and administrative expenses for the six months ended June 30, 2010 increased by $788,000 as compared to the six months ended June 30, 2009. The higher general and administrative expenses were primarily attributable to an increase of $822,000 before routine overhead reclassifications in stock-based compensation, salary and other compensation-related expenses for general and administrative personnel. The largest component of the increase was stock-based compensation expense and was primarily due to a significantly higher fair value calculated for each stock option granted during 2010 as compared to the fair value calculated for stock options granted during and prior to the 2009 period.

Other Income and Expense

	Six months ended June 30,		
	2010	2009	Change
	(in thousands)		
Interest income	$ 740	$ 620	$ 120
Interest expense	80	117	(37)

Interest income for the six months ended June 30, 2010 increased by $120,000 as compared to the six months ended June 30, 2009. The increase reflected a significantly increased cash balance and the changes in our investment portfolio to include U.S. Treasury notes and bonds, U.S. federal and state agency-backed certificates and corporate debt securities, partially offset by lower interest rates. Interest expense for the six months ended June 30, 2010 decreased by $37,000 as compared to the six months ended June 30, 2009.

Income Tax Expense

	Six months ended June 30,		
	2010	2009	Change
	(in thousands)		
Income tax (expense) benefit	$(2,138)	$73	$(2,211)

Income tax expense for the six months ended June 30, 2010 increased by $2.2 million as compared to the six months ended June 30, 2009. The change was primarily due to tax deductions for stock-based compensation for the 2010 period in excess of expense recorded under GAAP for the corresponding stock options as a result of the increase in the number of stock options exercised during the 2010 period and our net income position for the 2010 period.

Liquidity and Capital Resources

Sources of Liquidity

We have historically financed our operations and internal growth primarily through public and private offerings of our securities, payments under collaborations and alliances, including upfront fees, payments for research and development services and payments upon achievement of milestone events, equipment and building lease incentive financing, government grants and interest income. We discontinued our only approved product, Inversine, effective as of September 30, 2009. The net contribution from Inversine sales was not historically a significant source of cash.

In December 2009, we entered into a collaboration and license agreement with AstraZeneca for the global development and commercialization of TC-5214. We received a $200.0 million upfront payment from AstraZeneca in January 2010. Under the terms of an existing license agreement, we paid $16.0 million to University of South Florida Research Foundation, or USFRF, in January 2010 based on our receipt of the upfront payment from AstraZeneca.

As discussed above under the caption “—Overview— Revenue,” we are eligible to receive substantial additional payments from AstraZeneca, contingent on the achievement of specified milestone events related to TC-5214, AZD3480, AZD1446, and, if AstraZeneca licenses TC-5619, TC-5619 and from GlaxoSmithKline, contingent on the achievement of specified milestone events in the specified therapeutic focus areas of the alliance. There is no assurance that we will achieve any particular milestone event in 2010, in any future period or at all. In particular, in February 2010, GlaxoSmithKline announced plans to cease discovery research in selected neuroscience areas. Although the overall impact of GlaxoSmithKline’s strategic change on our alliance has not yet been finally determined, we currently anticipate that at least several therapeutic focus areas in the alliance will be discontinued. In that event, we would no longer be eligible to receive milestone payments from GlaxoSmithKline for those therapeutic focus areas, which would diminish the alliance as a potential source of future funds.

In July 2010, we entered into a loan agreement with a bank that provides aggregate borrowing capacity of $4,000,000 to be provided in up to three individual term loans that we may take at any time on or prior to June 30, 2011 to fund the purchase of equipment, furnishings, software and other fixed assets. We have not yet borrowed any amount under the loan agreement. Any loan would bear interest, at our discretion on a loan-by-loan basis, at either a variable rate equal to the thirty-day LIBOR plus 2.15%, adjusted monthly on the first day of each month, or a fixed rate equal

to the bank's fixed rate cost of funds index corresponding to the term of the loan plus 2.15%. Any loan that we take during 2010 would be interest only through 2010 and then would be re-payable in equal monthly installments of principal and interest over 48 months. Any loan that we take during the first half of 2011 would be interest only through June 30, 2011 and then would be re-payable in equal monthly installments of principal and interest over the next 48 months. Pursuant to the loan agreement, we have agreed to grant to the bank a first priority security interest in the assets acquired with the proceeds of the loan facility.

In March 2008, we entered into a loan agreement with a bank that provided borrowing capacity of $5.3 million to fund the purchase of equipment, furnishings, software and other fixed assets and enable the refinancing of our then-existing loan facility with RJRT. We borrowed $4.8 million upon entering into the loan agreement and borrowed the remaining $489,000 in September 2008. Pursuant to the loan agreement, we granted a first priority security interest in favor of the bank in the assets acquired with the proceeds of the loan facility or the previous facility that it replaced. The March 2008 loan bears interest at a fixed rate of 5.231% per annum and is repayable in equal monthly installments of $112,000 beginning April 1, 2008 and continuing through the maturity date of March 1, 2012. The September 2008 loan bears interest at a fixed rate of 6.131% per annum and is repayable in equal monthly installments of $11,000 beginning October 1, 2008 and continuing through the maturity date of September 1, 2012. As of June 30, 2010, the outstanding principal balance under the loan facility was $2.5 million. There is no additional borrowing capacity remaining available to us under the loan agreement.

In April 2002, we received a $500,000 loan from the City of Winston-Salem. Under the terms of the loan, there was no interest accrual or payment due until the fifth anniversary of the loan. Following expiration of the five-year grace period in April 2007, the outstanding principal balance of the loan began to bear interest at an annual interest rate of 5% and became payable in 60 equal monthly installments of $9,000. As of June 30, 2010, the outstanding principal balance under the loan was $187,000.

Our cash, cash equivalents and investments in marketable securities were $283.7 million as of June 30, 2010 and $111.1 million as of December 31, 2009. As of June 30, 2010, the majority of our cash, cash equivalents and investments were invested in bank depository accounts, certificates of deposit, and institutional money market funds at Branch Banking and Trust Company, RBC Bank and Wells Fargo & Company. In addition, as of June 30, 2010, we had cash of $62.1 million that we do not expect to need to fund our short-term liquidity requirements invested in U.S. Treasury notes and bonds, U.S. federal and state agency-backed certificates, corporate debt securities that are rated at least A quality or equivalent and certificates of deposit.

Cash Flows

	Six Months ended June 30,		
	2010	2009	Change
		(in thousands)	
Net cash provided by (used in) operating activities	$171,000	$(14,509)	$185,509
Net cash (used in) provided by investing activities	(36,522)	9,878	(46,400)
Net cash provided by (used in) financing activities	3,239	(652)	3,891
Net increase (decrease) in cash and cash equivalents	$137,717	$ (5,283)	

Net cash provided by operating activities for the six months ended June 30, 2010 was $171.0 million and net cash used in operating activities for the six months ended June 30, 2009 was $14.5 million, a difference of $185.5 million. The change reflected net income of $10.6 million for the 2010 period as compared to a net loss of $14.3 million for the 2009 period, a difference of $24.9 million. The remaining change was principally due to:

- a difference of $200.9 million in the change in our receivables from collaborations balance for the 2010 period (a decrease of $201.2 million) as compared to the 2009 period (a decrease of $386,000); the change for the 2010 period was primarily due to our receipt of the $200.0 million upfront payment under our 2009 collaboration agreement with AstraZeneca and the change for the 2009 period was primarily due to the timing of our performance of preclinical research services under our cognitive disorders agreement with AstraZeneca and our receipt of related payments;
- an increase of $37.1 million in recognition of deferred revenue for the 2010 period as compared to the 2009 period, primarily due to our recognition during the 2010 period of $36.0 million of the $200.0 million upfront payment received under our TC-5214 agreement with AstraZeneca and $1.6 million of the $11.0 million payment received under the April 2010 amendment to our cognitive disorders agreement with AstraZeneca;
- a difference of $12.3 million in the change in our accounts payable, license fees payable and accrued expenses for the 2010 period (a decrease of $12.0 million) as compared to the 2009 period (an increase of $359,000); the change for the 2010 period was primarily due to license fees of $16.0 million paid in January 2010 upon the receipt of the $200.0 million upfront payment received under our TC-5214 agreement with AstraZeneca; and
- an increase of $11.3 million in deferred license fees for the 2010 period as compared to the 2009 period, primarily related to the $11.0 million payment received under the April 2010 amendment to our cognitive disorders agreement with AstraZeneca; no deferred license fees were received during the 2009 period.

Net cash used in investing activities for the six months ended June 30, 2010 was $36.5 million and net cash provided by investing activities for the six months ended June 30, 2009 was $9.9 million, a difference of $46.4 million. Cash used in investing activities primarily reflects the portion of our cash that we allocate to, and the timing of purchases and maturities of, our investments in marketable securities. The net purchases of investments in marketable securities for the six months ended June 30, 2010 were $35.0 million and occurred primarily as a result of our receipt of the upfront payment under our 2009 collaboration agreement with AstraZeneca. The net sales of

investments in marketable securities for the six months ended June 30, 2009 were $10.0 million. Additionally, we purchased $1.5 million of property and equipment for the 2010 period, an increase of $1.4 million from $122,000 for the 2009 period, to expand our internal research and development capabilities.

Net cash provided by financing activities for the six months ended June 30, 2010 was $3.2 million and net cash used in financing activities for the six months ended June 30, 2009 was $652,000, a difference of $3.9 million. The change was primarily attributable to our receipt during the 2010 period of $1.8 million in proceeds from the issuance of common stock upon the exercise of stock options and the related income tax effect of $2.1 million.

Funding Requirements

As of June 30, 2010, we had an accumulated deficit of $218.7 million. We may incur operating losses in future periods as our clinical-stage and preclinical product candidates advance into later-stage development and as we progress our programs, invest in additional product opportunities and expand our research and development infrastructure. 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 and GlaxoSmithKline, including in particular our TC-5214 agreement with AstraZeneca, the timing of milestone events that may be achieved under those agreements and the timing 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:

- whether and to what extent milestone events are achieved for TC-5214 under our TC-5214 agreement with AstraZeneca and for AZD3480 and AZD1446 under our cognitive disorders agreement with AstraZeneca;
- the progress of, and outcomes from, Phase 3 clinical development of TC-5214 and the amount and timing of development costs for TC-5214 payable by us;
- whether AstraZeneca exercises its right to license TC-5619 when exercisable;
- the scope, progress, duration, results and cost of clinical trials, as well as non-clinical studies and assessments, of our other product candidates;
- the impact on our alliance of GlaxoSmithKline’s shift in discovery research focus announced in February 2010 and whether and to what extent our programs in the therapeutic focus areas of the alliance continue and research and development-related milestone events are achieved;
- the extent to which we retain development or commercialization rights or responsibilities for our product candidates that are not subject to our collaborations with AstraZeneca or our alliance with GlaxoSmithKline and incur associated development costs, manufacturing costs or costs to establish sales and marketing functions;

- whether we establish strategic alliances, collaborations and licensing or other arrangements on terms favorable to us;
- the costs, timing and outcomes of regulatory reviews or other regulatory actions;
- the number and characteristics of product candidates that we pursue;
- 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 rate of technological advancements for the indications that we target;
- the costs to satisfy our obligations under existing and potential future alliances and collaborations;
- the timing, receipt and amount of sales or royalties, if any, from our potential products; and
- the extent and scope of our general and administrative expenses.

Implementing our strategy may require additional capital as our clinical-stage and preclinical product candidates advance into later-stage development and as we progress our programs, invest in additional product opportunities and expand our research and development infrastructure. 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 at least through the end of 2013, without taking into account any amounts that we would be entitled to receive if milestone events are achieved under either of our collaboration agreements with AstraZeneca or our alliance agreement with GlaxoSmithKline. 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 for product development.

To the extent our capital resources are insufficient to meet future capital requirements, we may need to finance future cash needs through alliances, collaborations or licensing or other arrangements, public or private equity or debt offerings or other financings. The global credit and financial markets continue to be negatively impacted by the recessionary environment. This, coupled with other factors, may dramatically limit our access to additional equity or debt financing in the future on acceptable terms or at all. Also, additional strategic alliances, collaborations or licensing or other 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 dilute the ownership of our stockholders.

We cannot accurately determine 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 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.

Recent Accounting Pronouncements

In April 2010, the Financial Accounting Standards Board issued Accounting Standards Update No. 2010-17, *Milestone Method of Revenue Recognition*, or ASU 2010-17. ASU 2010-17 defines a milestone event and permits an entity to make an accounting policy election to recognize a payment that is contingent upon achievement of a substantive milestone in its entirety in the period in which the milestone is achieved. ASU 2010-17 is effective for fiscal years beginning on or after June 15, 2010, and for interim periods within those years, and may be applied prospectively to milestones achieved after the adoption date or retrospectively for all periods presented. Early adoption is permitted. We do not expect ASU 2010-17 to have a material impact our financial results.

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 our 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 marketable securities that are of high credit quality. As of June 30, 2010, we had cash, cash equivalents and investments in marketable securities of $283.7 million. Our investments 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 short term in nature and our investments in marketable securities are traded in active markets, we believe that our exposure to interest rate risk is not significant and estimate that an immediate and uniform 10% increase in market interest rates from levels as of June 30, 2010 would not have a material impact on the total fair value of our portfolio.

We contract for the conduct of some of our clinical trials and other research and development and manufacturing activities with contract research organizations, clinical trial sites and contract manufacturers in Europe and India. We may be subject to exposure to fluctuations in foreign currency exchange rates in connection with these agreements. If the average Euro/U.S. dollar or Indian Rupee/U.S. dollar exchange rate were to strengthen or weaken by 10% against the corresponding exchange rate as of June 30, 2010, 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 June 30, 2010 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.

Our trademarks include Targacept®, Pentad™, NNR Therapeutics™, TRIDMAC™ and Building Health, Restoring Independence™. Any other service marks, trademarks and trade names appearing in this quarterly report are the property of their respective owners.

SIGNATURES

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

TARGACEPT, INC.

Date: August 9, 2010

/s/ J. DONALD DEBETHIZY

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

Date: August 9, 2010

/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
10.1	Amendment No. 3, effective as of April 30, 2010, to Collaborative Research and License Agreement between the Company and AstraZeneca AB dated as of December 27, 2005^
10.2	Sixth Lease Amendment, effective as of June 30, 2010, to Lease effective August 1, 2002, by and between the Company and Wake Forest University Health Sciences
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.

^ Portions of this Exhibit have been omitted and filed separately with the Securities and Exchange Commission as part of an application for confidential treatment pursuant to the Exchange Act.

The registrant hereby undertakes to furnish to the SEC, upon its request, a copy of any instrument defining the rights of holders of indebtedness of the registrant incurred during the second quarter ended June 30, 2010 and not filed herewith pursuant to Item 601(b)(4)(v) of Regulation S-K.

Exhibit 10.1

[********] Certain confidential information contained in this document, marked by brackets, has been omitted and filed separately with the Securities and Exchange Commission pursuant to Rule 24b-2 promulgated under the Securities Exchange Act of 1934, as amended.

AMENDMENT NO. 3 TO
COLLABORATIVE RESEARCH AND LICENSE AGREEMENT

This Amendment No. 3 to Collaborative Research and License Agreement (this "**Amendment**"), effective as of the date of signature of the last Party to sign below, amends the Collaborative Research and License Agreement entered into as of December 27, 2005 by and between AstraZeneca AB, a company limited by shares organized and existing under the laws of Sweden ("**AstraZeneca**"), and Targacept, Inc., a Delaware (USA) corporation ("**Targacept**"), as amended by Amendment No. 1 dated November 10, 2006 and Amendment No. 2 effective July 8, 2009 (the "**Agreement**"). Capitalized terms used herein and not otherwise defined shall have the meanings ascribed to them in the Agreement.

WHEREAS Targacept's product candidate that it refers to as TC-5619 has previously become an Option Compound (i) for which the Option Indication is CDS, (ii) for which AstraZeneca and Targacept agreed to an Option Compound Development Plan dated on or about November 5, 2007 (the "**Original 5619 OCDP**") that provided for, among other things, Targacept to conduct a Phase 2 clinical proof of concept study of TC-5619 in CDS and (iii) that has not yet been determined to be an Option Compound Candidate Drug, a Terminated Compound or an Unexercised Option Compound;

WHEREAS AstraZeneca and Targacept intend to amend and restate the Original 5619 OCDP effective on or about the date of this Amendment to, among other things: (i) modify various aspects of the Original 5619 OCDP as applied to CDS; (ii) provide for Targacept also to conduct and fund (A) a Phase 2 clinical proof of concept study of TC-5619 in ADHD (in adults) and (B) various activities in preparation of a potential Phase 2 clinical proof of concept study of TC-5619 in AD; (iii) provide for AstraZeneca to conduct and fund various other activities in preparation of a potential Phase 2 clinical proof of concept study of TC-5619 in AD; and (iv) provide for a potential Phase 2 clinical proof of concept study of TC-5619 in AD; and

WHEREAS AstraZeneca and Targacept desire to amend, in accordance with Section 17.6 of the Agreement, various aspects of the Agreement as applied to TC-5619.

NOW, THEREFORE, in consideration of the mutual covenants contained herein and for other good and valuable consideration, AstraZeneca and Targacept, intending to be legally bound, hereby agree as follows:

1. The Agreement is hereby amended by adding the following new Section 5.10.2(h).

"(h) Special TC-5619 Provisions. The following provisions shall apply solely to TC-5619. Except as otherwise expressly provided in this Section 5.10.2(h), the terms and conditions of the Agreement as applied to TC-5619 and any TC-5619 Product shall remain in full force and effect; provided that, for clarity, in the event of any conflict between this Section 5.10.2(h) and any other provision of this Agreement as applied to TC-5619 or any TC-5619 Product, this Section 5.10.2(h) shall control.

(i) *Limited License Grant*. Subject to the other terms of this Agreement, Targacept shall, and hereby does, grant to AstraZeneca, conditional on and effective as of effectiveness of the amendment and restatement of the original Option Compound Development Plan for TC-5619 (as so amended and restated and as may be further amended from time to time by written agreement of the Parties, the "**Amended 5619 OCDP**" and, the effective date of such amendment and restatement, the "**Amended 5619 OCDP Date**"), a co-exclusive (with Targacept and its Affiliates), royalty-free, worldwide license, without the right to grant sublicenses, under Targacept Technology and Targacept Patent Rights, and Targacept's interest in Joint Technology and Joint Patent Rights, in each case that would be infringed by the conduct by AstraZeneca of (A) those activities identified in the Amended 5619 OCDP as enabling activities supporting development in AD (collectively, the "**AD Enabling Activities**") to be conducted by or on behalf of AstraZeneca (collectively, the "**AZ AD Enabling Activities**") or (B) the potential Phase 2 clinical proof of concept study of TC-5619 in AD contemplated by the Amended 5619 OCDP (the "**5619 AD POC Study**") in the absence of a license, such license to:

(1) be solely to conduct, or have conducted, the AZ AD Enabling Activities and the 5619 AD POC Study; and

(2) expire and be of no further force or effect upon the first to occur of:

(x) the exercise by AstraZeneca of the POC Option for TC-5619 as permitted by this Section 5.10.2(h);

(y) an agreement by the Parties that Targacept shall conduct the 5619 AD POC Study;

(z) such time as a POC Option Period expires with the POC Option unexercised; provided that this clause (z) shall not apply in the case of a Decision Trigger Notice provided under clause (z) of Section 5.10.2(h)(iii)(B)(1) if AstraZeneca provides a certification under Section 5.10.2(h)(iv)(A); or

(aa) such time as AstraZeneca gives (or is deemed to have given) a certification to Targacept pursuant to Section 5.10.2(h)(iv)(C).

For clarity: (I) the co-exclusivity granted by Targacept under this Section 5.10.2(h)(i) is limited to the sole purpose referenced in clause (1) above and shall have no effect on Targacept's ability to Exploit Targacept Technology, Targacept Patent Rights and Targacept's interest in Joint Technology and Joint Patent Rights for any other purpose, to the extent permitted by Section 8.6 and consistent with the exclusive and co-exclusive grants set forth in this Agreement; (II) this Section 5.10.2(h)(i) shall not affect the applicability of Section 8.1.2(b) in the event that AstraZeneca elects to complete the Amended 5619 OCDP pursuant to, and to the extent permitted by, Section 5.10.2(b)(5); and (III) the **[********]** for, and the **[********]** with respect to, the 5619 AD POC Study are to be agreed upon by the Parties as provided in Section 5.10.2(h)(v)(B).

(ii) *Interplay with Section 5.10.2(c)*. It is acknowledged and agreed that, solely for purposes of:

(A) clause (i) of Section 5.10.2(c)(1), the IND-Ready Notice for TC-5619 shall be deemed to have specified each of CDS and ADHD; and

(B) clause (i) of each of Section 5.10.2(c)(2) through Section 5.10.2(c)(5), CDS shall be considered the Principal Indication for TC-5619; and

(C) clause (ii) of each of Section 5.10.2(c)(1) through Section 5.10.2(c)(5), if and to the extent any such clause becomes applicable, the Principal Indication for TC-5619 and any TC-5619 Product shall be whichever one of CDS, ADHD or AD for which TC-5619 achieves Option Compound Proof of Concept; provided that, if TC-5619 achieves Option Compound Proof of Concept for more than one of CDS, ADHD and AD, the Principal Indication shall be the Initial Principal Indication determined pursuant to clause (1) of Section 5.10.2(h)(vii) (and such Principal Indication shall not change as a result of the application of any of clauses (2), (3) or (4) of Section 5.10.2(h)(vii)).

(iii) *Progress of Amended 5619 OCDP; POC Option*.

(A) For so long as either Party (the "**Performing Party**") is performing activities under the Amended 5619 OCDP, the Performing Party shall, subject to Section 5.10.2(h)(iii)(F):

(1) provide to the other Party on at least **[********]** a written report that summarizes the status of all activities conducted by the Performing Party under the Amended 5619 OCDP, to the extent not summarized in a previous report, and the results achieved;

(2) make available such additional information in its possession or control with respect to the activities that it conducts under the Amended 5619 OCDP as may be reasonably requested by the other Party from time to time; and

(3) with respect to each of the activities conducted by the Performing Party under the Amended 5619 OCDP, (x) within a reasonable time after completion of such activity, prepare or have prepared a final written report of the results of such activity and, within a reasonable time after such report is prepared by or provided to the Performing Party, provide such report to the other Party and (y) make available to the other Party upon request the data generated in such activity at U.S. offices of Performing Party or one of its Affiliates, the site of any Third Party contracted to perform such activity or another mutually acceptable location within a reasonable time after such data is finalized by or provided to the Performing Party. Notwithstanding the reference to "final written report" in clause (x) of this Section 5.10.2(h)(iii)(A)(3), Targacept shall, after completion of each of the **[********]** included in the AD Enabling Activities (together, the "**Enabling Toxicology Studies**"), provide AstraZeneca, within a reasonable time after Targacept's receipt thereof, with (aa) an audited draft report (which audit has been performed by quality assurance personnel of Targacept or the contract research organization(s) contracted by Targacept to conduct such Enabling Toxicology Study) of the outcome of such Enabling Toxicology Study (for each such Enabling Toxicology Study, the "**Audited Enabling Toxicology Report**") and (bb) a final written report of the outcome of such Enabling Toxicology Study (for each such Enabling Toxicology Study, the "**Final Enabling Toxicology Report**").

As of the Amended 5619 OCDP Date, clause (4) of Section 5.10.2(b)(3) shall cease to apply to TC-5619 and Section 5.10.2(h)(iii)(A) shall apply to TC-5619 in its place; provided that, for clarity, it is the intent of Targacept and AstraZeneca that each provision of the Agreement that references clause (4) of Section 5.10.2(b)(3) (or Section 5.10.2(b)(3) and thereby includes said clause (4)) shall be deemed also to reference Section 5.10.2(h)(iii)(A) as such provision applies to TC-5619, *mutatis mutandis*.

(B) Without limitation of Section 5.10.2(h)(iii)(A), Targacept shall provide AstraZeneca with written notice (each, a "**Decision Trigger Notice**") within a reasonable time following each of:

(1) the first of (x) Targacept's completion of the Phase 2 clinical proof of concept study of TC-5619 in CDS contemplated by the Amended 5619 OCDP (the "**5619 CDS POC Study**") if TC-5619 achieves Option Compound Proof of Concept for CDS, (y) Targacept's completion of the Phase 2 clinical proof of concept study of TC-5619 in ADHD contemplated by the Amended 5619 OCDP (the "**5619 ADHD POC Study**") if TC-5619 achieves Option Compound Proof of Concept for ADHD, and (z) the latest of (I) Targacept's completion of the 5619 CDS POC Study if TC-5619 does not achieve Option Compound Proof of Concept for CDS, (II) Targacept's completion of the 5619 ADHD POC Study if TC-5619 does not achieve Option Compound Proof of Concept for ADHD and (III) the earlier of (aa) the Parties' completion of all of the AD Enabling Activities (including the Enabling Toxicology Studies) and (bb) if at **[********]** the only AD Enabling Activities that have not yet been completed are one or more of the AZ AD Enabling Activities, **[********]** or **[********]** thereafter on which the only AD Enabling Activities that have not yet been completed are one or more of the AZ AD Enabling Activities; and

(2) if AstraZeneca provides a certification pursuant to Section 5.10.2(h)(iv)(A) and thereafter conducts and satisfies its resulting obligation with respect to the 5619 AD POC Study (for clarity, under the circumstances described in Section 5.10.2(h)(iv) and not following the exercise by AstraZeneca of the POC Option for TC-5619), the completion of the 5619 AD POC Study.

Each Decision Trigger Notice shall: (x) include a summary of the results of activities completed under the Amended 5619 OCDP as of the date of such Decision Trigger Notice; (y) include a summary of the status of existing Patent Rights with respect to TC-5619, whether Controlled by Targacept or controlled by a Third Party, Known to Targacept; (z) include a description of all license agreements regarding, and all other agreements relating to Targacept's Control of (including any financial or other obligations with respect thereto), TC-5619; (aa) specify, with respect to a Decision Trigger Notice in respect of the 5619 CDS POC Study, the 5619 ADHD POC Study or the 5619 AD POC Study, whether TC-5619 has achieved Option Compound Proof of Concept for CDS, ADHD or AD, as applicable; and (bb) with respect to a Decision Trigger Notice provided under clause (z) of Section 5.10.2(h)(iii)(B)(1), if not already provided, include or be accompanied by, for each Enabling Toxicology Study, the Final Enabling Toxicology Report or, if not yet available, the Audited Enabling Toxicology Report for each Enabling Toxicology Study. For clarity, each Decision Trigger Notice shall also constitute a POC Notice, except that a Decision Trigger Notice provided under clause (z) of Section 5.10.2(h)(iii)(B)(1): (I) shall not constitute a POC Notice unless and until AstraZeneca provides a certification under Section 5.10.2(h)(iv)(B); and (II) shall when provided be treated as a POC Notice solely for purposes of Section 12.3, notwithstanding the foregoing clause (I) and without regard to whether AstraZeneca subsequently provides a certification under Section 5.10.2(h)(iv)(B).

(C) At such time as Targacept has given (1) the Decision Trigger Notice under Section 5.10.2(h)(iii)(B)(1) or (2) the Decision Trigger Notice under Section 5.10.2(h)(iii)(B)(2), if

any and if such Decision Trigger Notice specifies that TC-5619 has achieved Option Compound Proof of Concept for AD, AstraZeneca shall thereupon have the POC Option for TC-5619. It is understood and agreed that (x) notwithstanding Section 5.10.2(d), the POC Option for TC-5619 shall arise solely under this Section 5.10.2(h)(iii) and, in the case of a Decision Trigger Notice provided under clause (z) of Section 5.10.2(h)(iii)(B)(1), would arise without Option Compound Proof of Concept having been achieved and (y) in the case of a Decision Trigger Notice provided under Section 5.10.2(h)(iii)(B)(2), would arise for the second time.

(D) The first and, unless Targacept provides a Decision Trigger Notice under Section 5.10.2(h)(iii)(B)(2) and such Decision Trigger Notice specifies that TC-5619 has achieved Option Compound Proof of Concept for AD, only POC Option Period for TC-5619 shall expire, subject to the last paragraph of this clause (D), on:

(1) the latest of:

(x) **[********]** following the date on which the Decision Trigger Notice is delivered to AstraZeneca;

(y) **[********]** following the date on which AstraZeneca has been provided for each of the Enabling Toxicology Studies with the Audited Enabling Toxicology Report; and

(z) **[********]** following the date on which AstraZeneca has been provided for each of the Enabling Toxicology Studies with the Final Enabling Toxicology Report; or

(2) such other date, if any, as the Parties may agree in writing

(such expiration date, the "**5619 Option Primary Expiration Date**").

If Targacept provides a Decision Trigger Notice under Section 5.10.2(h)(iii)(B)(2) and such Decision Trigger Notice specifies that TC-5619 has achieved Option Compound Proof of Concept for AD, there shall be a second POC Option Period for TC-5619, which shall expire on the later of **[********]** following the date on which such Decision Trigger Notice is delivered to AstraZeneca, subject to the last paragraph of this clause (D), or such other date, if any, as the Parties may agree in writing.

Notwithstanding the foregoing, if AstraZeneca requests further information relating to TC-5619 as permitted by Section 5.10.2(h)(iii)(E) and all such information is not provided within **[********]** of such request, then the then-operative POC Option Period for TC-5619 shall be extended for any such delay in responding to such request (for example, if AstraZeneca requests certain information and that information is not completely provided until **[********]** after the request, then the then-operative POC Option Period would be extended by **[********]**).

(E) Following receipt of each Decision Trigger Notice (a maximum of two), AstraZeneca shall notify Targacept if it desires to conduct due diligence at Targacept's offices with respect to TC-5619 and, if so, the Business Day(s) on which it will do so during normal business hours; provided that such date(s) shall be at least **[********]** following the date of Targacept's

receipt of such notice from AstraZeneca. Without limiting the foregoing but subject to Section 5.10.2(h)(iii)(F), Targacept shall: (A) provide to AstraZeneca for review at Targacept's offices during normal business hours in a reasonable and prompt manner such data, documentation and other information in Targacept's possession or control regarding TC-5619, including the activities conducted pursuant to the Amended 5619 OCDP and the results achieved, as AstraZeneca reasonably requests (provided such request is made at least **[********]** before the expiration of the then-operative POC Option Period) for purposes of evaluating the POC Option for TC-5619 (including true, complete and correct copies of all license agreements (with financial terms redacted to the extent AstraZeneca has no responsibility therefor) regarding, and other agreements relating to Targacept's Control of (including any financial or other obligations with respect thereto), TC-5619 and applications for Patent Rights, results of freedom to operate analyses and other information with respect to the intellectual property status of TC-5619; provided that Targacept shall not be required to provide privileged information with respect to such intellectual property status unless and until procedures reasonably acceptable to Targacept are in place to protect such privilege); and (B) respond in a prompt and reasonable manner to all reasonable queries raised by AstraZeneca in connection with its evaluation of such POC Option.

(F) For clarity, in no event will either Performing Party be required by any provision of this Section 5.10.2(h)(iii) to amend or modify, suspend or terminate prior to the planned conclusion of, unblind, obtain or produce interim results from, or prepare or have prepared any written report regarding interim results of any study or activity; provided, however, that nothing in this Section 5.10.2(h)(iii)(F) is intended to limit or restrict: (1) a Party's right to request of a Performing Party or such Performing Party's obligation to provide or make available, as the context requires under this Section 5.10.2(h)(iii), to the other Party interim results from any study or activity or written reports with respect thereto that the Performing Party has in its possession and control, if any; or (2) AstraZeneca's right to request or Targacept's obligation to provide, written reports filed by Targacept with the applicable Regulatory Authority(ies) for any study or activity for which Targacept is the Performing Party, even if such study or activity is incomplete.

(G) If AstraZeneca does not agree with Targacept's determination, as specified in the POC Notice, as to whether (1) TC-5619 has or has not achieved Option Compound Proof of Concept for CDS, ADHD or AD, as applicable, or (2) the Enabling Toxicology Studies have actually been completed or the content of the Final Enabling Toxicology Reports is adequate, AstraZeneca shall, prior to the end of the POC Option Period for TC-5619, refer such matter (clause (1) or clause (2)) in writing to the ESC for resolution pursuant to Section 2.1.5 (and, if necessary, Section 14.3 (accelerated arbitration)) and, in such event, all relevant time periods pursuant to this Section 5.10.2(h)(iii) shall be tolled pending such resolution and the Decision Trigger Notice shall be deemed to be amended to reflect such resolution.

(H) Without limitation of Section 5.10.2(h)(vi)(E), to the extent applicable, the failure of TC-5619 to achieve Option Compound Proof of Concept for either or both of CDS and ADHD shall not give rise to the application of Section 5.10.2(e).

(I) If AstraZeneca exercises the POC Option for TC-5619 as permitted by this Section 5.10.2(h)(iii), then Targacept and AstraZeneca shall continue to use Commercially Reasonable Efforts to execute their respective remaining obligations under the Amended 5619 OCDP, if any, to completion (except that, without limitation of any other provision hereof, AstraZeneca shall not be required by this Section 5.10.2(h)(iii)(I) to use Commercially Reasonable

Efforts to execute the 5619 AD POC Study to completion) and, as between Targacept and AstraZeneca, Targacept shall have and retain all rights and licenses necessary to satisfy its remaining obligations under the Amended 5619 OCDP.

For clarity, it is the intent of Targacept and AstraZeneca that compliance by a Party with this Section 5.10.2(h)(iii) shall constitute compliance by such Party with Section 5.10.2(d) (but not, for clarity, Section 5.10.2(d)(1) or Section 5.10.2(d)(2)) as such Section 5.10.2(d) applies to TC-5619 or any TC-5619 Product (including as to the content of the POC Notice) and that each provision of the Agreement that references Section 5.10.2(d) (or Section 5.10.2 and thereby includes Section 5.10.2(d)) shall be deemed also to reference this Section 5.10.2(h)(iii) as such provision applies to TC-5619 or a TC-5619 Product, *mutatis mutandis*.

(iv) *No Option Compound Proof of Concept for CDS and no Option Compound Proof of Concept for ADHD*. In the case of a Decision Trigger Notice provided under clause (z) of Section 5.10.2(h)(iii)(B)(1), AstraZeneca shall provide Targacept with written certification, prior to the 5619 Option Primary Expiration Date, that, intending to be legally bound and having received good and valuable consideration, AstraZeneca:

(A) commits to conducting the 5619 AD POC Study, in which case Section 5.10.2(h)(vi) shall apply;

(B) commits to conducting a human clinical trial of TC-5619 (1) in furtherance of its development for AD **[********]** a **[********]** of **[********]** the **[********]** or (2) in **[********]**, in either case (clause (1) or (2)):

(x) the Decision Trigger Notice provided under clause (z) of Section 5.10.2(h)(iii)(B)(1) shall thereafter also constitute a POC Notice;

(y) such certification shall be deemed a notice of exercise of the POC Option, shall specify the **[********]** for which AstraZeneca commits to conducting a human clinical trial of TC-5619 and shall be accompanied by payment by AstraZeneca of the Option Exercise Fee required by Section 5.10.2(h)(ix)(A); and

(z) for clarity, TC-5619 shall be a POC Option Candidate Drug and subject to AstraZeneca's obligations pursuant to Section 5.10.2(h)(vii) and AstraZeneca shall use Commercially Reasonable Efforts to initiate such human clinical trial as soon as reasonably practicable; or

(C) disclaims any interest in a potential license to further Exploit TC-5619, in which case Section 5.10.2(h)(xii) shall apply;

provided that, if AstraZeneca does not give such written certification to Targacept on or before the 5619 Option Primary Expiration Date, AstraZeneca shall thereupon be deemed to have given a certification to Targacept pursuant to clause (C) above.

(v) *AZ AD Enabling Activities and 5619 AD POC Study* **[********]**.

(A) AstraZeneca shall fund the AZ AD Enabling Activities and shall conduct the AZ AD Enabling Activities either itself or with or through such subcontractors as it may elect to engage; provided that, for clarity, AstraZeneca shall have no obligation to fund or conduct any other AD Enabling Activities. Subject to clauses (1) and (4) of this Section 5.10.2(h)(v)(A), Targacept shall own all right, title and interest in and to all data and other work product and all intellectual property, made, conceived, developed, generated or reduced to practice in the conduct of the AD Enabling Activities (including the AZ AD Enabling Activities) and AstraZeneca shall have no rights to any such data and other work product or intellectual property unless and until TC-5619 becomes an Option Compound Candidate Drug pursuant to the terms of this Agreement (in which case and at which time AstraZeneca would have such rights to such data and other work product and intellectual property as are provided in the Agreement). Accordingly, if and to the extent AstraZeneca contracts with any Third Party to conduct any AZ AD Enabling Activity, AstraZeneca shall ensure that ownership of all data and other work product and all intellectual property, made, conceived, developed, generated or reduced to practice in, or arising from, the conduct of each such AZ AD Enabling Activity ("**AZ AD Enabling Activity Work Product**" and "**AZ AD Enabling Activity Intellectual Property**," respectively) is assigned solely to Targacept, subject to the following provisions of this Section 5.10.2(h)(v)(A).

(1) Notwithstanding the foregoing clause (A), if and to the extent AstraZeneca wishes to contract with any Third Party that is an academic or non-profit institution to conduct any AZ AD Enabling Activity and AstraZeneca is unable to secure from such Third Party for Targacept ownership of all AZ AD Enabling Activity Work Product or AZ AD Enabling Activity Intellectual Property, AstraZeneca shall:

(x) consult with Targacept with respect to the terms and conditions of any such agreement with such Third Party;

(y) consider and address in good faith any comments provided by Targacept and, in any event, provide Targacept with a copy of any agreement AstraZeneca proposes to enter into with such Third Party for Targacept's review, it being understood that the Parties shall use good faith efforts to secure from such Third Party (I) for Targacept and its licensees and sublicensees (through multiple tiers) to **[********]** to **[********]** AZ AD Enabling Activity Work Product and (II) for Targacept to **[********]** and **[********]**, and a **[********]** a and **[********]**, in and to AZ AD Enabling Activity Intellectual Property (a "**Third Party IP [********]**"), subject in each case (clauses (I) and (II)) to any rights reserved by the U.S. federal government and, to the extent customary, such Third Party and any obligations imposed under Applicable Law; and

(z) not enter into any such agreement unless Targacept shall have approved the form and content thereof in writing (such approval not to be withheld unless the intellectual property, **[********]** or **[********]** rights or work product provisions thereof are not satisfactory to Targacept, acting in good faith), it being understood that, notwithstanding any other provision of this Agreement or the Amended 5619 OCDP, if Targacept shall not have provided such approval, AstraZeneca shall not have the right to proceed with such AZ AD Enabling Activity and such AZ AD Enabling Activity shall be deemed stricken from the Amended 5619 OCDP.

(2) Targacept shall consult with AstraZeneca with respect to the terms and conditions of any **[********]** of a Third Party IP **[********]** and consider and address in good faith any comments provided by AstraZeneca and, in any event, provide AstraZeneca with a copy of any agreement Targacept proposes to enter into with such Third Party with respect to such AZ AD Enabling Intellectual Property (a "**Third Party License Agreement**") for AstraZeneca's review. If,

after good faith discussions, Targacept and AstraZeneca are not able to agree that such **[********]** is necessary or reasonably useful to Develop TC-5619 in the Field or Commercialize any TC-5619 Product in the Field or that the terms and conditions of such Third Party License Agreement are commercially reasonable, then AstraZeneca shall have the right, exercisable within **[********]** after delivery of such Third Party License Agreement, to deliver written notice of objection to Targacept and to refer such matter to the ESC for resolution pursuant to Section 2.1.5 (and, if necessary, arbitration in accordance with terms and conditions of Section 14.2 (full arbitration)); provided that, for clarity, Targacept shall nevertheless have the right to enter into such Third Party License Agreement, subject to clause (3) below.

(3) If Targacept enters into a Third Party License Agreement and AstraZeneca exercises the POC Option for TC-5619, AstraZeneca shall be responsible for all financial and non-financial obligations to such Third Party in connection with such Third Party License Agreement unless and until TC-5619 becomes a Terminated Compound; provided that, if AstraZeneca timely provided a notice of objection and initiated arbitration as provided in clause (2) above and in such arbitration proceeding such **[********]** is found not to be necessary or reasonably useful to Develop TC-5619 in the Field or Commercialize any TC-5619 Product in the Field or the terms of such Third Party License Agreement are found not to be commercially reasonable, then (x) Targacept shall be responsible for all financial and non-financial obligations to such Third Party in connection with such Third Party License Agreement and (y) notwithstanding anything in this Agreement to the contrary, Targacept shall have the right in its sole discretion to terminate such Third Party License Agreement. For clarity, Targacept shall be responsible for all financial and non-financial obligations to such Third Party in connection with such Third Party License Agreement if AstraZeneca does not exercise the POC Option for TC-5619 and when and if TC-5619 becomes a Terminated Compound.

(4) With respect to any AZ AD Enabling Activity Intellectual Property that both (x) does not apply solely to TC-5619 or **[********]** and (y) Targacept acquires ownership of or obtains a license to pursuant to this Section 5.10.2(h)(v), Targacept shall, and hereby does, grant to AstraZeneca a perpetual, irrevocable, fully paid-up, royalty-free, worldwide, non-exclusive right and license, with right to grant sublicenses, in each case to the extent Targacept has such right and license, to use and practice such AZ AD Enabling Activity Intellectual Property for all purposes other than the Exploitation in any respect of TC-5619, any salt form, polymorph, crystalline form, prodrug, Major Metabolite, hydrate, solvate or formulation of TC-5619 or any Product that consists of or contains any of the foregoing (each, a "**TC-5619 Product**"). The term "**[********]**" as used in this clause (4) shall mean the **[********]** as described in **[********]** of **[********]**.

(5) Each Party shall duly execute and deliver, or cause to be duly executed and delivered, such instruments and shall do and cause to be done such acts and things, including the filing of such assignments, agreements, documents and instruments, as may be necessary for, or as the other Party may reasonably request, to carry out more effectively the purpose of this Section 5.10.2(h)(v)(A).

(B) AstraZeneca and Targacept shall collaborate in good faith and work diligently to devise and agree in writing upon (1) **[********]** for the 5619 AD POC Study and (2) the **[********]** for TC-5619 for AD not later than **[********]**, such **[********]** and **[********]** to be upon such agreement deemed incorporated in, and part of, the Amended 5619 OCDP and subject to modification from time to time thereafter only by mutual written agreement of the Parties. AstraZeneca shall ensure that the **[********]** for the 5619 AD POC Study is true to and accurately

reflects the agreed upon **[********]**. Targacept shall have the same rights and AstraZeneca shall have the same obligations with respect to any written embodiment of the agreed upon **[********]** and with respect to such **[********]** as Targacept and AstraZeneca have with respect to AZ AD Enabling Activity Work Product pursuant to Section 5.10.2(h)(v)(A).

(vi) *5619 AD POC Study*. Solely to the extent AstraZeneca makes a certification under Section 5.10.2(h)(iv)(A) (it being understood that, in all other circumstances, this Section 5.10.2(h)(vi) shall not be operative):

(A) unless the Parties shall agree in a signed written document for Targacept to conduct the 5619 AD POC Study, AstraZeneca shall initiate the 5619 AD POC Study as soon as reasonably practicable after the later of (1) the date on which it has provided its certification pursuant to Section 5.10.2(h)(iv)(A) and (2) without limitation of Section 5.10.2(h)(v)(B), agreement by the Parties as to **[********]** and **[********]** for the 5619 AD POC Study pursuant to Section 5.10.2(h)(v)(B), and in any case prior to conducting any other Development activities for TC-5619 (other than the production of clinical trial material, necessary regulatory matters and other matters related directly to the 5619 AD POC Study) and shall conduct the 5619 AD POC Study;

(B) Each Party shall have the same rights and obligations with respect to the 5619 AD POC Study as such Party has with respect to AZ AD Enabling Activities pursuant to Section 5.10.2(h)(v)(A);

(C) all costs incurred in connection with the conduct of the 5619 AD POC Study (whether conducted by AstraZeneca or Targacept) shall be borne by AstraZeneca and shall be non-refundable and non-creditable; provided that, if Targacept conducts all or any portion of the 5619 AD POC Study, the Parties shall mutually agree on a budget for the 5619 AD POC Study and as to their respective responsibilities, if any, for any costs incurred in connection with the conduct of the 5619 AD POC Study in excess of such budget;

(D) for clarity, the 5619 AD POC Study shall be conducted under the Amended 5619 OCDP and therefore subject, without limitation, to Section 5.10.2(h)(iii)(A); and

(E) following completion of the 5619 AD POC Study (whether conducted by AstraZeneca or Targacept), if the Decision Trigger Notice provided under Section 5.10.2(h)(iii)(B)(2) specifies that TC-5619 has not achieved Option Compound Proof of Concept for AD, Section 5.10.2(e) shall thereupon apply; provided that, in such circumstance, the **[********]** terms on which AstraZeneca could designate TC-5619 as an Option Compound Candidate Drug, as contemplated by Section 5.10.2(e), shall be **[********]** from the **[********]** terms that would have been applicable had Option Compound Proof of Concept been achieved for each of CDS, ADHD and AD.

(vii) *AstraZeneca's Diligence Obligation for TC-5619*. If AstraZeneca exercises the POC Option for TC-5619 as permitted by this Section 5.10.2(h) (including pursuant to Section 5.10.2(h)(iv)(B)), AstraZeneca shall use Commercially Reasonable Efforts to Develop TC-5619 and Commercialize one TC-5619 Product in **[********]** for the 5619 Principal Indication (defined and determined as provided below); provided that, notwithstanding anything in this Agreement to the contrary, AstraZeneca shall have no obligation to Develop TC-5619 or to Commercialize any TC-5619 Product until the results of each of the 5619 CDS POC Study and the 5619 ADHD POC Study

and the Final Enabling Toxicology Report for each of the Enabling Toxicology Studies have been made available to AstraZeneca. Notwithstanding anything in this Agreement to the contrary, if Option Compound Proof of Concept is achieved **[*********]**, AstraZeneca shall **[*********]** have a diligence obligation with respect to the 5619 Principal Indication. If Regulatory Approval is obtained for a TC-5619 Product for the 5619 Principal Indication in **[*********]**, AstraZeneca shall use Commercially Reasonable Efforts to (A) Commercialize such TC-5619 Product for the 5619 Principal Indication in **[*********]** and (B) obtain Regulatory Approval for such TC-5619 Product for the 5619 Principal Indication in **[*********]**. If such Regulatory Approval is obtained in any **[*********]**, AstraZeneca shall use Commercially Reasonable Efforts to Commercialize such TC-5619 Product for the 5619 Principal Indication in **[*********]**. Subject to the determination from time to time of the 5619 Principal Indication as described below, if, notwithstanding exercise by AstraZeneca of Commercially Reasonable Efforts following the designation of TC-5619 as a POC Option Candidate Drug, the exercise of Commercially Reasonable Efforts would not require AstraZeneca to continue to Develop TC-5619 for the 5619 Principal Indication, AstraZeneca shall have no further obligations pursuant to this Section 5.10.2(h)(vii) (or, for clarity, Section 5.5.1(c)) with respect to TC-5619 or any TC-5619 Product; provided that, if AstraZeneca, in its sole discretion, elects to do so, the exercise by AstraZeneca of Commercially Reasonable Efforts to Develop TC-5619 or Commercialize a TC-5619 Product for **[*********]** (other than the 5619 Principal Indication) shall, after such failure, be sufficient to satisfy AstraZeneca's diligence obligation set forth in Section 5.5.1(b). Notwithstanding anything in this Agreement to the contrary, (x) AstraZeneca shall have no obligation to Develop TC-5619 or Commercialize any TC-5619 Product **[*********]** and (y) if TC-5619 is Developed or a TC-5619 Product is Commercialized **[*********]** in at least **[*********]**, but AstraZeneca's not Developing TC-5619 and not Commercializing a TC-5619 Product in **[*********]** would not breach its obligations to use Commercially Reasonable Efforts as provided above, AstraZeneca shall have no obligation to Develop TC-5619 or Commercialize any such TC-5619 Product in such **[*********]**. For purposes of clarity, the diligence obligations in this paragraph shall not apply to, and shall not be satisfied by, any Other Licensed Compound or Other Licensed Product.

The "**5619 Principal Indication**" from time to time shall be determined as provided below.

(1) The initial 5619 Principal Indication (the "**Initial Principal Indication**") shall be **[*********]**, except that:

(x) if TC-5619 achieves Option Compound Proof of Concept in both CDS and ADHD, AstraZeneca shall have the right by written notice to Targacept, given at any time prior to Initiation by AstraZeneca of the first human clinical trial of TC-5619 following the later of (A) AstraZeneca's exercise of the POC Option and (B) the date that TC-5619 achieves Option Compound Proof of Concept for the later of CDS and ADHD, to **[*********]** to **[*********]**;

(y) notwithstanding clause (x), if TC-5619 achieves Option Compound Proof of Concept in one or both of CDS and ADHD, and TC-5619 subsequently Achieves Proof of Concept for AD in the 5619 AD POC Study, then AstraZeneca shall have the right by written notice to Targacept, given at any time prior to Initiation by AstraZeneca of the first human clinical trial of TC-5619 for AD following the date that TC-5619 Achieves Proof of Concept for AD, to **[*********]**; and

(z) if AstraZeneca gives a certification to Targacept pursuant to Section 5.10.2(h)(iv)(B), the Initial Principal Indication shall be **[********]** specified in such certification;

(2) AstraZeneca shall have the right, upon written notice to Targacept, to **[********]** (as determined pursuant to clause (1) above) to **[********]**, in its sole discretion, following the completion of any Phase II Clinical Trial, but before the Initiation of the first Phase III Clinical Trial, of TC-5619.

(3) The Initial Principal Indication (as determined pursuant to clause (1) or clause (2) above, as applicable) shall remain the 5619 Principal Indication thereafter unless (x) TC-5619 Achieves Proof of Concept (in the 5619 AD POC Study in the case of AD) or achieves Option Compound Proof of Concept, collectively, in two or more of CDS, ADHD and AD (each such indication, a "**POC Indication**"), and (y) both (A) the failure by AstraZeneca to diligently progress the Development of TC-5619 to obtain Regulatory Approval for **[********]** in **[********]** would nevertheless constitute the use of Commercially Reasonable Efforts and (B) the failure by AstraZeneca to diligently progress the Development of TC-5619 to obtain Regulatory Approval for **[********]** (the "**Replacement Principal Indication**") in **[********]** would not constitute the use of Commercially Reasonable Efforts, in which case such Replacement Principal Indication shall thereupon become the 5619 Principal Indication; provided that (i) in no event shall there be **[********]** and (ii) if there are **[********]**, then the **[********]** for which AstraZeneca uses Commercially Reasonable Efforts to Develop TC-5619 to obtain Regulatory Approval shall be the 5619 Principal Indication and if AstraZeneca uses Commercially Reasonable Efforts to Develop TC-5619 to obtain Regulatory Approval for **[********]**, AstraZeneca shall have the right, on written notice to Targacept given promptly following request therefor, to designate **[********]** Replacement Principal Indication shall become the 5619 Principal Indication; and

(4) Except where **[********]** is the 5619 Principal Indication and except for so long as Development or Commercialization of TC-5619 or a TC-5619 Product for **[********]** continues, the **[********]** for which TC-5619 obtains Product Regulatory Approval (and, in the case of **[********]** approval) in **[********]** shall become (if not already) the 5619 Principal Indication.

For clarity, it is the intent of Targacept and AstraZeneca that compliance by AstraZeneca with this Section 5.10.2(h)(vii) shall constitute compliance by AstraZeneca with Section 5.5.1(c) as such Section 5.5.1(c) applies to TC-5619 or any TC-5619 Product and that each provision of the Agreement that references Section 5.5.1(c) (or Section 5.5.1 and thereby includes Section 5.5.1(c)) shall be deemed also to reference this Section 5.10.2(h)(vii) as such provision applies to TC-5619 or a TC-5619 Product, *mutatis mutandis*.

(viii) *Option Expansion Fee for TC-5619.* AstraZeneca shall pay to Targacept the sum of Eleven Million Dollars (US $11,000,000) (the "**5619 Option Expansion Fee**") in immediately available funds at a time to be agreed upon by the Parties. The 5619 Option Expansion Fee shall be non-refundable and non-creditable.

(ix) *Option Exercise Fee for TC-5619*. Subject, for clarity, to Section 6.3, if AstraZeneca exercises the Option for TC-5619 (other than if AstraZeneca had assumed from Targacept and completed the Amended 5619 OCDP pursuant to Section 5.10.2(b)(5), in which case clause (a)(ii) of Section 6.2 and Section 5.10.2(b)(5) shall be operative), the Option Exercise Fee that AstraZeneca shall pay Targacept shall be:

(A) in the amount of Thirty-Two Million Dollars (US $32,000,000), if AstraZeneca exercises the POC Option for TC-5619 upon achievement of Option Compound Proof of Concept in any one of CDS, ADHD or AD or pursuant to Section 5.10.2(h)(iv)(B); or

(B) in an amount to be negotiated by the Parties pursuant to Section 5.10.2(e) if AstraZeneca desires to designate TC-5619 as an Option Compound Candidate Drug under the circumstances set forth in, and subject to, Section 5.10.2(h)(vi)(E).

For clarity, it is the intent of Targacept and AstraZeneca that compliance by AstraZeneca with this Section 5.10.2(h)(ix) shall constitute compliance by AstraZeneca with clauses (b) and (c) of Section 6.2 as such clauses apply to TC-5619 or any TC-5619 Product and that each provision of the Agreement that references clause (b) or clause (c) of Section 6.2 (or Section 6.2 and thereby includes said clauses (b) and (c)) shall be deemed also to reference this Section 5.10.2(h)(ix) as such provision applies to TC-5619 or a TC-5619 Product, *mutatis mutandis*.

(x) *Milestone Payments for TC-5619*.

(A) Subject to Section 5.10.2(b)(5), if TC-5619 becomes a POC Option Candidate Drug, then, with respect to each of milestone event 5 through milestone event 9 (five milestone events) under the heading "Milestone Event" in Section 6.5.1(a) for POC Option Candidate Drugs/POC Option Products (column C) (reproduced under the heading "Milestone Event" below), the amount payable to Targacept by AstraZeneca with respect to such milestone event shall instead be the amount shown below corresponding to such milestone event (and, for clarity, not the amount shown in the table in Section 6.5.1(a), column C, corresponding to such milestone event).

Milestone Event	**TC-5619/TC-5619 Products**
5. Initiation of **[********]**	**[********]**
6. **[********]** of **[********]**	**[********]**
7. First Commercial Sale **[********]**	**[********]**
8. First Commercial Sale **[********]**	**[********]**
9. First Commercial Sale **[********]**	**[********]**

(B) For clarity: (1) Section 5.10.2(h)(x)(A) shall apply solely to the application of Section 6.5.1(a) to TC-5619 and TC-5619 Products and for no other purpose (for further clarity, Sections 6.5.1(b) and 6.5.1(c) and the amounts payable to Targacept by AstraZeneca thereunder, if

any, are not intended to be affected by this Section 5.10.2(h)(x)); (2) any payment obligation of AstraZeneca that arises under Section 5.10.2(h)(x)(A) shall be deemed to arise under Section 6.5.1(a) and therefore subject to, without limitation, Sections 6.5.1(a) (excluding the dollar amounts shown in the table therein), 6.5.2, 6.6.1(d)(2), 10.2.4 and 10.2.6 (in each case if and to the extent applicable); and (3) amounts paid to Targacept by AstraZeneca under Section 5.10.2(h)(x)(A) shall be deemed paid under Section 6.5.1(a).

(xi) *Payment of Royalties by AstraZeneca for TC-5619*.

(A) Subject to Section 5.10.2(b)(5), if TC-5619 becomes a POC Option Candidate Drug, then, with respect to the royalty tiers under the heading "AZ Net Sales of Such Product in the Territory" in Section 6.6.1(a)(1) for POC Option Products (column C) (reproduced under the heading "AZ Net Sales of Such Product in the Territory" below), the amount payable to Targacept by AstraZeneca with respect to AZ Net Sales of TC-5619 Products shall instead be the amount shown below corresponding to such tier (and, for clarity, not the amount shown in the table in Section 6.6.1(a)(1), column C, corresponding to such tier).

AZ Net Sales of such Product in the Territory	**TC-5619/TC-5619 Products**
For that portion of AZ Net Sales of such Product that are less than or equal to **[********]**	**[********]**
For that portion of AZ Net Sales of such Product that exceed **[********]** **[********]** and are less than or equal to **[********]**	**[********]**
For that portion of AZ Net Sales of such Product that exceed **[********]** and are less than or equal to **[********]**	**[********]**
For that portion of AZ Net Sales of such Product that exceed **[********]** and are less than or equal to **[********]**	**[********]**
For that portion of AZ Net Sales of such Product that exceed **[********]**	**[********]**

(B) For clarity, any royalty obligation of AstraZeneca that arises under Section 5.10.2(h)(xi)(A) shall be deemed to arise under Section 6.6.1(a) and amounts paid to Targacept by AstraZeneca under Section 5.10.2(h)(xi)(A) shall be deemed paid under Section 6.6.1(a).

(xii) *Failure to Exercise POC Option; Disclaimed Interest*. If AstraZeneca (x) has the POC Option for TC-5619 pursuant to Section 5.10.2(h)(iii)(C) (other than in the case of a Decision Trigger Notice provided under clause (z) of Section 5.10.2(h)(iii)(B)(1)) and does not exercise such POC Option within the POC Option Period, or (y) gives (or is deemed to have given) a certification to Targacept pursuant to Section 5.10.2(h)(iv)(C):

(A) Section 5.10.2(d)(2) shall apply;

(B) Targacept shall have the right to continue to conduct, but shall have no further obligation to continue to conduct, all or any portion of the activities remaining under the Amended 5619 OCDP;

(C) AstraZeneca shall have no further right (except to the extent Targacept shall otherwise agree in writing) or obligation to continue to conduct all or any portion of the activities remaining under the Amended 5619 OCDP;

(D) TC-5619 shall be, for clarity, an Unexercised Option Compound and shall not be a Terminated Compound or, notwithstanding anything in the Agreement to the contrary, an Additional Compound or Excluded Zone Compound, it being the intent of Targacept and AstraZeneca that, in the circumstances described in this Section 5.10.2(h)(xii) and notwithstanding anything in the Agreement to the contrary, Targacept and its Affiliates and licensees (and sublicensees, through multiple tiers) shall have (1) the exclusive and unrestricted worldwide right to Exploit TC-5619, including any salt form, polymorph, crystalline form, prodrug, Major Metabolite, hydrate, solvate or formulation thereof, in all respects and (2) the non-exclusive and unrestricted worldwide right to Exploit **[********]** TC-5619 in all respects; and

(E) if and to the extent requested in writing by Targacept, AstraZeneca shall promptly: (1) where permitted by law, transfer to Targacept all of its right, title and interest in all Regulatory Filings then in its name applicable to TC-5619 in the Territory, if any, and all material aspects of Confidential Information in its possession (or that can be obtained without undue effort or expense) and Control as of the date of termination solely to the extent relating to such Regulatory Filings; (2) notify the applicable Regulatory Authorities and take any other action reasonably necessary to effect such transfer; (3) provide Targacept with copies of all correspondence between AstraZeneca and such Regulatory Authorities relating to such Regulatory Filings; (3) provide Targacept with all supplies of TC-5619 in the possession (or that can be obtained without undue effort or expense) and Control of AstraZeneca or any Affiliate or contractor of AstraZeneca; and (4) provide Targacept with copies of all reports and data generated or Controlled by, and in the possession of, AstraZeneca or its Affiliates pursuant to this Agreement that relate to TC-5619. For purposes of clarity, nothing in this Section 5.10.2(h)(xii)(E) shall require AstraZeneca to make any payments or provide any other consideration to any Third Party."

2. The Agreement is hereby amended by deleting the text of Section 11.2.5(a)(3) in its entirety and replacing it with the following.

"Develop a particular Option Compound Candidate Drug for a Principal Indication in **[********]** as provided in Section 5.5.1(c) (or TC-5619 for the 5619 Principal Indication in **[********]** as provided in Section 5.10.2(h)(vii)), to terminate in the Territory such Option Compound Candidate Drug (including TC-5619, if applicable) and all Option Compound Products that contain such Option Compound Candidate Drug (including TC-5619 Products, if applicable), and all Licensed Derivatives (other than Working Licensed Derivatives and products containing Working Licensed Derivatives) with respect to any of the foregoing, in each case as of the effective date of such termination; provided, however, that this Section 11.2.5(a)(3) shall not apply if AstraZeneca (whether itself or with or through one or more of its Affiliates, Sublicensees or Distributors) is using Commercially Reasonable Efforts to Commercialize a Product that contains such Option Compound Candidate Drug or any Licensed Derivative with respect thereto."

3. Except as expressly amended by this Amendment, all of the terms and conditions of the Agreement shall remain in full force and effect.

4. AstraZeneca shall pay to Targacept the 5619 Option Expansion Fee on or before the fifth (5th) Business Day after the effective date of this Amendment.

[remainder of page intentionally left blank]

IN WITNESS WHEREOF AstraZeneca and Targacept have executed this Amendment as of the respective dates set forth below.

TARGACEPT, INC.		ASTRAZENECA AB (publ.)	
By:	/s/ J. Donald deBethizy	By:	/s/ Anders Burén
Name:	J. Donald deBethizy	Name:	Anders Burén
Title:	President & CEO	Title:	Authorised Signatory
Date:	April 30, 2010	Date:	April 30, 2010

Exhibit 10.2

NORTH CAROLINA)
)
FORSYTH COUNTY)

SIXTH LEASE AMENDMENT

This Sixth Lease Amendment (this "**Sixth Amendment**"), made effective as of the date of signature of the last party to sign below (the "**Amendment Date**"), by and between Wake Forest University Health Sciences, a North Carolina non-profit corporation having its principal office in Winston-Salem, North Carolina ("**Landlord**"), and Targacept, Inc., a Delaware corporation having its principal office in Winston-Salem, North Carolina ("**Tenant**"), amends that certain Lease effective August 1, 2002, as amended by the First Lease Amendment effective January 1, 2005, the Second Lease Amendment effective March 31, 2006, the Third Lease Amendment effective January 1, 2007, the Fourth Lease Amendment effective August 1, 2007 and the Fifth Lease Amendment effective October 1, 2009 (the "**Lease**"). Unless otherwise defined herein, all of the capitalized terms of this Sixth Amendment shall have the respective meanings ascribed to them in the Lease.

WITNESSETH:

WHEREAS Tenant has previously exercised its Renewal Option for the Renewal Term (i.e., August 1, 2007 to July 31, 2012) and, pursuant to paragraphs 2.3.3 and 3.1 of the Lease, Tenant has an Option to Lease the Second Floor Option Space at a specified rental rate; and

WHEREAS, as an incentive for Tenant to exercise its Option to Lease the Second Floor Option Space, Landlord and Tenant desire to amend the Lease to decrease the rental rate that would be payable by Tenant with respect to the Second Floor Option Space;

NOW, THEREFORE, for and in consideration of the premises, of the rents reserved and to be paid by Tenant to Landlord, and of the additional mutual covenants of the parties, Landlord and Tenant hereby agree as follows:

1. The Lease shall be amended by:

a. deleting paragraph 2.3.3 in its entirety and substituting the following in lieu thereof:

"2.3.3 Second Floor Option

Landlord hereby grants to Tenant the option to lease an additional 20,669 rentable square feet of space, being all of the second floor of the Building (the "Second Floor Option Space"), the exercise of such Option to Lease being conditional on Tenant's exercise of the Renewal Option for the Renewal Term (it being understood that such Option to Lease is not conditional on Tenant's exercise of the Renewal Option for the Second Renewal Term). Tenant will exercise this Option to Lease, if it elects exercise, by giving written notice to Landlord specifying Tenant's intended occupancy date of such space (the "Second Floor Occupancy Effective Date"); provided that in no event shall the Second Floor Occupancy Effective Date be prior to July 31, 2007. Unless

Landlord otherwise agrees, Tenant may exercise this Option to Lease only with respect to all of the Second Floor Option Space. Exercise of this Option to Lease shall effect a lease of the Second Floor Option Space from the Second Floor Occupancy Effective Date through the balance of the Renewal Term and, if applicable, Second Renewal Term and the Second Floor Option Space shall thereupon become part of the Demised Premises. Tenant will pay Rent for such Second Floor Option Space during the Renewal Term and, if applicable, Second Renewal Term as set forth in paragraphs 3.1 and 3.2."; and

b. deleting the last row of the table under the heading "Renewal Term" in paragraph 3.1 and substituting the following in lieu thereof, with the remainder of paragraph 3.1 remaining unchanged:

"Second Floor*^	20,669	$17.50/rsf	$ 361,707.50	$ 361,707.50
			($ 30,142.29)	($ 30,142.29)

* if corresponding Option to Lease is exercised by Tenant
^ from the Second Floor Occupancy Effective Date to 7/31/12"

2. Except as amended herein, all of the terms and conditions of the Lease remain in full force and effect and, without limiting the generality of the foregoing, Landlord affirms and acknowledges its obligations pursuant to paragraph 6.5 of the Lease; and

3. This Sixth Amendment shall, as of the Amendment Date, constitute Tenant's written notice of the exercise of its Option to Lease the Second Floor Option Space contemplated by paragraph 2.3.3 of the Lease, with a Second Floor Occupancy Effective Date to be specified by Tenant within 30 days after Tenant's receipt of written notice from Landlord that the Second Floor Option Space has been vacated; provided that Landlord agrees: (i) to keep Tenant regularly informed about Landlord's progress towards vacating the Second Floor Option Space, with the objective of enabling Tenant to plan successfully for the occupation of the Second Floor Option Space promptly after it has been vacated; (ii) to provide written notice to Tenant as soon as the Second Floor Option Space has been vacated; (iii) to use its best efforts to vacate or cause to be vacated the Second Floor Option Space before October 1, 2010; (iv) without limiting the foregoing clause (iii), to vacate or cause to be vacated the Second Floor Option Space in any event before December 1, 2010; (v) that this written notice of the exercise of its Option to Lease the Second Floor Option Space meets the requirements of paragraph 2.3.3 of the Lease and is valid and effective as of the Amendment Date; and (vi) Tenant has reasonably relied on the foregoing agreements by Landlord in providing its written notice of the exercise of its Option to Lease the Second Floor Option Space.

[signature page follows]

IN WITNESS WHEREOF, Landlord and Tenant have caused this Sixth Amendment to be executed, pursuant to authority duly granted, effective as of the Amendment Date.

LANDLORD:

Wake Forest University Health Sciences

By: /s/ Douglas L. Edgeton
Name: Douglas L. Edgeton
Title: Executive Vice President & COO

Date: 6/25/10

TENANT:

Targacept, Inc.

By: /s/ J. Donald deBethizy
Name: J. Donald deBethizy, Ph.D.
Title: President & CEO

Date: June 30, 2010

Exhibit 31.1

CERTIFICATION

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

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

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

Date: August 9, 2010

/s/ J. Donald deBethizy

J. Donald deBethizy
President and Chief Executive Officer

Exhibit 31.2

CERTIFICATION

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

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

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

Date: August 9, 2010

/s/ Alan A. Musso

Alan A. Musso
Senior Vice President, Finance and Administration, Chief Financial Officer and Treasurer

Exhibit 32.1

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

In connection with the Quarterly Report on Form 10-Q of Targacept, Inc. (the "Company") for the period ended June 30, 2010 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: August 9, 2010

/s/ J. Donald deBethizy

J. Donald deBethizy
President and Chief 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 June 30, 2010 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: August 9, 2010

/s/ Alan A. Musso

Alan A. Musso
Senior Vice President, Finance and Administration, Chief Financial Officer and Treasurer