

Overview

Targacept, Inc. is a clinical-stage biopharmaceutical company with a vision of building health and restoring independence for patients. Targacept has leveraged its leadership position in the research of neuronal nicotinic receptors, which it refers to as NNRs, to build a diverse pipeline of NNR Therapeutics™ in development to treat an array of central nervous system diseases and disorders. NNR Therapeutics selectively target NNRs, which serve as key regulators of nervous system activity. With more than 20 years of focused NNR research and a proprietary drug design platform known as Pentad™, Targacept's leadership position in the NNR space is well established.

Deep Pipeline - Areas of Large Unmet Medical Need

		Preclinical	Phase 1	Phase 2	Phase 3	Market
Major Depressive Disorder	TC-5214	[Progress bar from Preclinical to Phase 3]				AstraZeneca
Cognitive Disorders						
ADHD	AZD3480 (TC-1734)	[Progress bar from Preclinical to Phase 2]				AstraZeneca
Alzheimer's Disease/ADHD	AZD1446 (TC-6683)	[Progress bar from Preclinical to Phase 1]				AstraZeneca
Cognitive Dysfunction in Schizophrenia	TC-5619*	[Progress bar from Preclinical to Phase 1]				
ADHD	TC-5619*	[Progress bar from Preclinical to Phase 1]				
Inflammatory Disorders	TC-6987	[Progress bar from Preclinical to Phase 1]				
TBD	TC-5685	[Progress bar from Preclinical to Phase 1]				
Parkinson's Disease	TBD**	[Progress bar from Preclinical to Phase 1]				
Pain/Smoking Cessation/Addiction/Obesity	TBD**	[Progress bar from Preclinical to Phase 1]				

* AstraZeneca has rights to obtain a global license at clinical proof of concept
 ** GlaxoSmithKline has rights to obtain a global license at clinical proof of concept

Company Highlights

- Clinical-stage pipeline of first-in-class small molecule product candidates targeting large commercial opportunities

TC-5214

- Primary outcome measure and all secondary outcome measures achieved with statistical significance in Phase 2b clinical trial as an adjunct to antidepressant therapy for major depressive disorder; global Phase 3 clinical program expected to begin mid 2010, with a goal of an NDA filing in 2012
- Co-developing TC-5214 under a collaboration agreement with AstraZeneca that provided a \$200 million upfront payment and provides eligibility for an additional >\$1.0 billion in future contingent milestones and significant stepped double digit royalties on net sales worldwide

AZD3480

- Primary outcome measure achieved with statistical significance in a Phase 2 clinical trial in adults with ADHD
- AstraZeneca expected to begin a Phase 2b study in adults with ADHD in the second half of 2010

TC-5619

- Parallel Phase 2 development ongoing in cognitive dysfunction in schizophrenia and ADHD in adults, with the potential for additional Phase 2 development in Alzheimer's disease
- Received \$11.0 million from AstraZeneca as part of an amendment to a 2005 collaboration agreement related to the expanded development program

AZD1446

- AstraZeneca is currently conducting a number of clinical trials, including, among others, a safety and tolerability study as an add-on treatment to donepezil in subjects with Alzheimer's disease and a Phase 2 study in adults with ADHD

TC-6987

- Completed a Phase 1 single rising dose trial and currently conducting a Phase 1 multiple rising dose trial, with further development in various indications characterized by inflammation under consideration

- Leader in the development of selective NNR Therapeutics primarily for CNS disorders
 - 20+ year investment in well validated targets with broad therapeutic application
 - Industry-leading 450+ issued and pending patents worldwide in NNR space
- Alliances with leading global pharmaceutical companies affirm the therapeutic and commercial potential of NNR Therapeutics

PRIMARY THERAPEUTIC FOCUS

Central nervous system diseases and disorders

THERAPEUTIC TARGETS

Neuronal nicotinic receptors

STRATEGIC ALLIANCES

AstraZeneca AB (two alliances)

- TC-5214 (major depressive disorder)
- Cognitive disorders (includes ADHD, Alzheimer's disease, cognitive dysfunction in schizophrenia, etc.)

GlaxoSmithKline

SENIOR LEADERSHIP TEAM

J. Donald deBethizy, Ph.D.

President and Chief Executive Officer

Merouane Bencherif, M.D., Ph.D.

Senior Vice President, Preclinical Research

Jeffrey P. Brennan

Senior Vice President, Business and Commercial Development and Chief Business Officer

William S. Caldwell, Ph.D.

Senior Vice President, Drug Discovery and Development

Geoffrey C. Dunbar, M.D.

Senior Vice President, Clinical Development and Regulatory Affairs

Karen A. Hicks

Vice President, Human Resources

Mauri K. Hodges, C.P.A., C.C.P.

Vice President, Finance and Corporate Systems and Controller

Alan A. Musso, C.P.A., C.M.A.

Senior Vice President, Finance and Administration, Chief Financial Officer and Treasurer

Peter A. Zorn, Esq.

Senior Vice President, Legal Affairs, General Counsel and Secretary

INVESTOR INFORMATION

NASDAQ Symbol: TRGT

Shares Outstanding at 3/31/10:
28.3 million

Cash and Investments at 3/31/10:
\$285.1 million

Pentad™ – Proprietary Drug Design Platform to Sustain Pipeline

Pentad combines sophisticated computer-based molecular design methodologies and extensive biological data from a library of diverse compounds developed and collected over more than 20 years. This information is used to identify and prioritize NNR Therapeutics predicted to have a greater likelihood of clinical success to enhance research and development efficiency.

About NNRs

NNRs are receptors located throughout the brain and nervous system on nerve cells that act as the 'volume knobs' of the nervous system. NNRs play a key role in a variety of biological processes including memory, attention, mood, pain, inflammation, movement and cell survival.

Target Indications for Targacept's NNR Therapeutics

- Major depressive disorder
- ADHD
- Alzheimer's disease
- Cognitive dysfunction in schizophrenia
- Inflammatory disorders
- Parkinson's disease
- Anxiety disorders
- Pain
- Smoking cessation
- Addiction
- Obesity

Targacept's NNR Therapeutics Target Significant Underserved Medical Needs

	Prevalence ¹	Global Sales
Major Depressive Disorder	42.4 million	\$ 20 billion ²
ADHD	44.9 million	\$ 4.2 billion ³
Alzheimer's Disease	9.7 million	\$ 5.6 billion ³
Cognitive Dysfunction in Schizophrenia	3.4 million ⁴	No approved products

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Forward-Looking Statements

This Corporate Fact Sheet includes "forward-looking statements" made under the provisions of the Private Securities Litigation Reform Act of 1995. Forward-looking statements include statements, other than statements of historical fact, regarding, without limitation: the progress or scope of development of TC-5214, AZD3480, AZD1446, TC-5619, TC-6987 or any other Targacept product candidate or program, the timing for initiation or completion of any clinical trial or program, for availability of results from any clinical trial or for submission or approval of any regulatory filing (including an NDA for TC-5214), or the target indication(s) for development; the competitive position of any Targacept product candidate or the commercial opportunity in any target indication; any payments that AstraZeneca or GlaxoSmithKline may make to Targacept; or Targacept's plans, expectations or future operations, financial position, revenues, costs or expenses. Actual results, performance or experience may differ materially from those expressed or implied by any forward-looking statement as a result of various important factors, including without limitation the risks and uncertainties described under the heading "Risk Factors" in Targacept's most recent Annual Report on Form 10-K and in other filings that it makes with the Securities and Exchange Commission. As a result of the risks and uncertainties, the results or events indicated by the forward-looking statements may not occur. Targacept cautions you not to place undue reliance on any forward-looking statement. Any forward-looking statement in this Corporate Fact Sheet represents Targacept's views only as of the date of this Corporate Fact Sheet and should not be relied upon as representing its views as of any subsequent date. Targacept disclaims any obligation to update any forward-looking statement, except as required by applicable law. In addition, market and industry statistics contained in this Corporate Fact Sheet are based on information available to us that we believe to be reliable but have not independently verified.

BOARD OF DIRECTORS

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Duke Professor of Medicine
Duke University

¹ In world's seven major pharmaceutical markets (France, Germany, Italy, Japan, Spain, the United Kingdom and the United States) in 2009 (*Patient Base*, a database of epidemiology available through Decision Resources, Inc., May 2010).

² Report of Datamonitor (October 2009) (amount shown includes all antidepressant sales in absence of estimates for sales as adjunct therapy or as second-line monotherapy).

³ *The CNS Market Outlook to 2013* (Business Insights, September 2008).

⁴ Derived based on (1) a reported prevalence for schizophrenia of 4.6 million¹ and (2) an estimate of 75% of schizophrenics that have cognitive dysfunction (O'Carroll, R. (2000) Cognitive impairment in schizophrenia. *Advances in Psychiatric Treatment*).