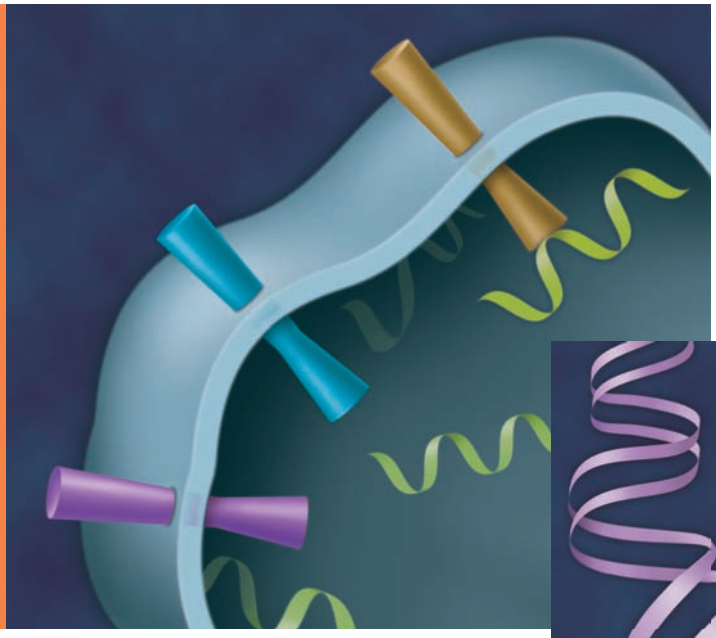
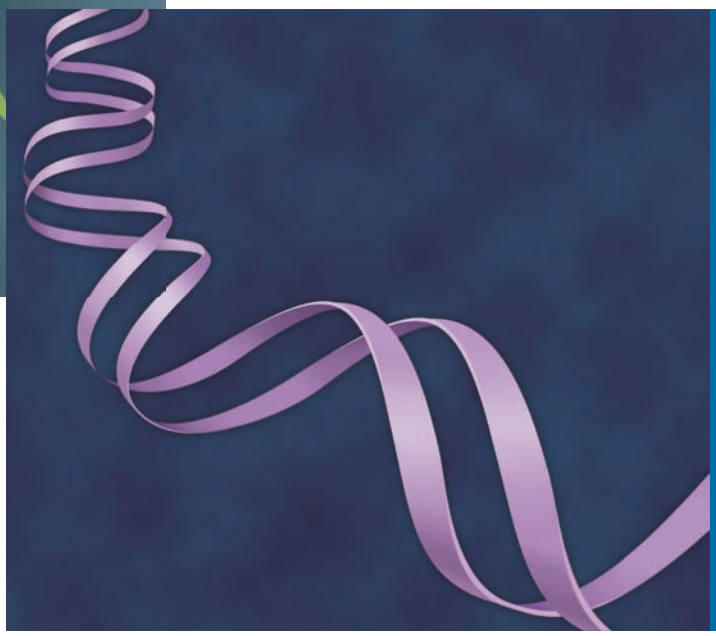
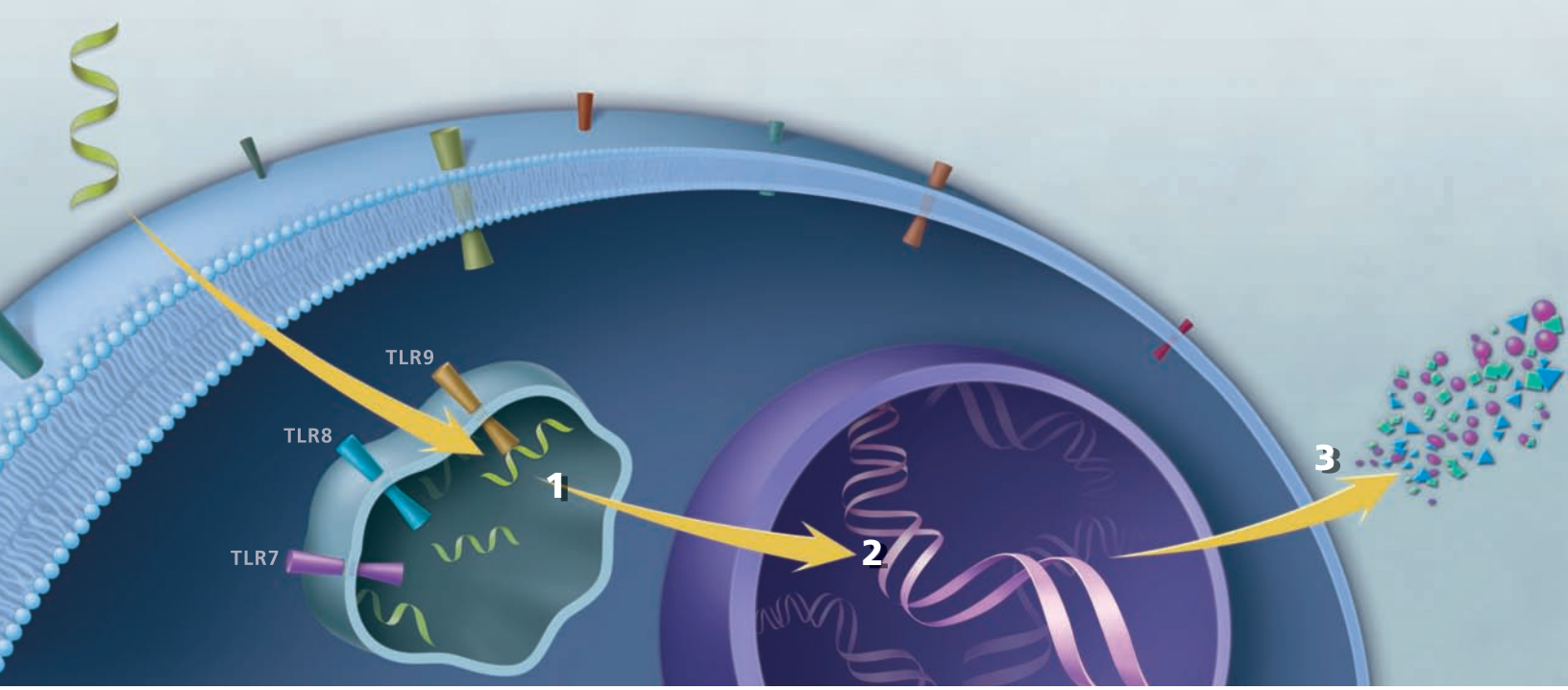
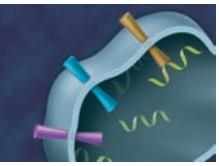


idera
PHARMACEUTICALS



2006 ANNUAL REPORT





ABOUT TOLL-LIKE RECEPTORS

Toll-like receptors (TLRs) are a family of proteins present on cells of the human immune system. The function of TLRs is to detect signals of potential infection or other disorders and activate immune responses. The signals detected by TLRs are chemical patterns that are specific to bacteria, viruses or abnormal cells. In the ten years since the discovery of TLRs, they have become exciting targets for new drug discovery programs because they are fundamental to the modulation of the immune system.

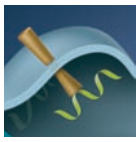
TLR-targeted drug candidates have potential applications to a variety of diseases including cancer, infectious diseases, asthma and allergies, autoimmune diseases, and as vaccine adjuvants.

Some TLRs function by detecting the DNA or RNA of pathogens, including bacteria and viruses as shown in the illustration above **(1)**. When the TLR detects this genetic material, it signals through key factors in the immune cells to initiate immune responses **(2)**. The immune response begins with a release of cytokines and other components of the innate immune system **(3)**. Innate immune responses are immediate general disease-fighting actions. The TLR-mediated response also stimulates adaptive immune responses. Adaptive immune responses include generation of long-term memory responses to defend against the same infection or disorder in future exposures.

IDERA'S TLR FOCUS

Idera's drug discovery focus is targeted to TLRs 7, 8, and 9, which are the TLRs that have been shown to detect DNA and RNA signals.

TLR7 and TLR8 recognize viral RNA; drug candidates targeted to TLRs 7 and/or 8 have potential applications to infectious diseases and cancer, and as vaccine adjuvants.



TLR9 recognizes bacterial DNA. Drug candidates targeted to TLR9 have potential applications to cancer, hepatitis C and other infectious diseases, asthma/allergy, and as vaccine adjuvants.

BROAD POTENTIAL OF TLR-TARGETING DRUGS

Idera is seeking to address the full potential of TLRs 7, 8, and 9 to treat disease by developing two classes of drug candidates: agonists and antagonists. Agonists of TLRs are used to stimulate or "turn on" the immune system. TLR agonists have the potential to fight diseases such as cancer, infectious diseases, asthma and allergies, and to be used as vaccine adjuvants, where harnessing the power of the immune system can provide therapeutic benefits. Conversely, the ability to block immune responses mediated through specific TLRs with TLR antagonists has potential for the treatment of autoimmune diseases such as lupus, where the immune system has incorrectly targeted the body's own molecules, leading to disease conditions.

OUR PIPELINE

DISEASE AREA	CANDIDATE	RESEARCH	PRECLINICAL	PHASE 1	PHASE 2
ONCOLOGY: RCC (monotherapy)	IMO-2055				
Solid Tumors (with chemo)	IMO-2055				
INFECTIOUS DISEASES: Hepatitis C	IMO-2125				
AUTOIMMUNE DISEASES	TLR antagonists				
RESPIRATORY DISEASES	TLR9 agonists		Collaboration with Novartis		
VACCINES: Cancer, Infectious Diseases, Alzheimer's Disease	TLR7,8,9 agonists		Collaboration with Merck		

IDERA'S DRUG DISCOVERY IN TLRS

Idera is using its pioneering DNA and RNA chemistry expertise to capture the broad therapeutic potential of TLR-targeted drug candidates. Idera designs novel synthetic segments of DNA and RNA to mimic the genetic material of pathogens. These sequences of genetic material are recognized by targeted TLRs and lead to immune responses.

Idera is using its pioneering DNA and RNA chemistry expertise to capture the broad therapeutic potential of TLR-targeted drug candidates

Idera's approach provides a great advantage in discovering compounds that regulate TLRs because Idera creates families of distinct TLR-targeted compounds based on different chemical structures. Each drug candidate is designed to interact with a TLR to produce disease-fighting factors that may be suitable for the intended disease indication. Idera protects its discoveries of novel candidates targeted to TLRs through a growing patent portfolio that currently includes over 180 issued and pending patents worldwide.

Through insights gained from our chemistry-based approach, Idera designs novel compounds that are agonists or antagonists of TLRs 7, 8, and 9.

OUR TLR DRUG CANDIDATES

Oncology

- Idera's lead candidate, IMO-2055, is a TLR9 agonist and is in a Phase 2 clinical trial in patients with metastatic renal cell cancer.
- Idera also is currently conducting a Phase 1/2 clinical trial of IMO-2055 in combination with chemotherapy in patients with solid tumors.
- Idera is planning to commence additional trials of IMO-2055 in combination with approved anti-cancer agents during 2007.

Infectious Diseases

Idera's second lead candidate, IMO-2125, is a TLR9 agonist. We expect to submit an Investigational New Drug application in the second quarter of 2007 with the initial indication being treatment of hepatitis C.

Autoimmune Diseases

Idera has an active research program to study novel antagonists of TLRs 7, 8, and 9 for the treatment of autoimmune diseases.

Respiratory Diseases

Idera is collaborating with Novartis to discover and develop TLR9 agonists for the treatment of asthma and allergies.

Vaccines

Idera is collaborating with Merck for use of agonists to TLRs 7, 8, and 9 as adjuvants with Merck's vaccines for cancer, infectious diseases and Alzheimer's disease.

OUR BUSINESS MODEL

Idera's TLR-discovery platform creates promising drug candidates for our proprietary pipeline and for partnered programs.

Idera is using its own resources to advance promising TLR-targeted drug candidates in oncology, infectious diseases, and autoimmune diseases. To advance our discoveries in the field of asthma and allergy and as vaccine adjuvants, we have established strategic collaborations. These collaborations are of great importance to us because our collaborators bring extensive experience and financial resources to advance the licensed programs. Idera also gains capital from upfront license fees, which we use to help fund our internal programs. Our collaborations have the potential to generate substantial future financial benefits to Idera through additional milestone payments and through royalties from any marketed products that result.

NOVARTIS

In May 2005, Idera entered into a research collaboration and a separate license, development and commercialization agreement with Novartis to discover, develop and commercialize TLR9 agonists for potential treatment for asthma and allergies. During the research collaboration phase, we agreed to work together to evaluate novel TLR9 agonists from which Novartis may select one or more for further development. Based on the progress made, Novartis recently extended the research collaboration for a third year, until May 2008. We have received a $4 million upfront license fee and reimbursement of research and development costs and will receive a $1 million payment in connection with the extension. If Novartis elects to exercise its option to develop and commercialize one or more TLR9 agonists in asthma and allergy, we may receive up to $131 million in milestone payments, as well as royalties on any commercialized products.

MERCK

In December 2006, Idera entered into a collaboration with Merck to research, develop and commercialize vaccine products containing our TLR 7, 8, and 9 agonists as adjuvants in the fields of oncology, infectious diseases and Alzheimer's disease. Under the collaboration, Merck paid Idera a $20 million upfront license fee, purchased $10 million in Idera equity and agreed to fund our research and development costs. Merck also agreed to pay us significant development-based milestone payments plus royalties on each vaccine commercialized under the collaboration. Importantly, under this arrangement there is no limit to the number of vaccines to which Merck can apply Idera's TLR agonists, and Idera is entitled to receive milestone payments for each vaccine developed.

As Idera advances its proprietary pipeline, we will continue to explore new collaborative alliances to support and expand the scope of our programs.

TO OUR SHAREHOLDERS

Idera made significant developmental and operational progress in 2006 toward building a biopharmaceutical company focused on therapeutics targeting toll-like receptors, or TLRs. We continued to discover and develop novel compounds, using our pioneering expertise in DNA and RNA chemistry, to modulate immune responses through TLRs. Our chemistry-based approach has led to an expanded portfolio of agonists and antagonists of TLRs 7, 8, and 9 that we believe have applicability across several key therapeutic areas. Importantly, we capitalized on this progress in 2006 to provide the financial resources to ensure our continued progress.

Idera's differentiated technology has allowed us to generate a portfolio of agonists and antagonists of TLRs 7, 8, and 9 that have applicability across several disease areas.

Idera is advancing its proprietary pipeline with TLR-targeted compounds in three therapeutic areas, oncology, infectious diseases and autoimmune diseases.

Oncology. Our lead product candidate, IMO-2055, is a novel TLR9 agonist currently in a Phase 2 trial in patients with renal cell carcinoma and in a phase 1/2 trial in combination with chemotherapeutic agents in patients with refractory solid tumors. In mid-2006, we formed an Oncology Clinical Advisory Board of ten internationally prominent physicians and scientists with expertise in various aspects of oncology drug development and clinical practice to advise the Company on the clinical development of IMO-2055 in oncology. In 2007, we plan to initiate additional trials of IMO-2055 in combination with approved anti-cancer agents.

Infectious Diseases. Our second lead product candidate is IMO-2125, an agonist of TLR9. In preclinical studies, IMO-2125 has induced interferon-alpha and other immune responses. We have completed preclinical studies of IMO-2125 to support the planned submission of an Investigational New Drug application in the second quarter of 2007, and we expect to begin a Phase 1 trial in patients with hepatitis C in the second half of 2007.

Autoimmune Diseases. Published reports suggest that blocking immune responses through TLRs may be a useful approach to treating human autoimmune diseases such as lupus. In 2006 we made significant progress in advancing our novel class of compounds that act as antagonists of TLRs 7, 8 and 9. In a recent study, we observed improvement in several disease parameters in mouse models of lupus when treated with our TLR antagonists. We plan to further expand preclinical studies of our TLR antagonists to learn more about potential applications in autoimmune diseases.

Another important component of our business strategy is to advance certain candidates generated by our differentiated discovery platform through collaborative alliances. We seek collaborators that can bring extensive experience and resources to the prospective programs. We are currently collaborating with Novartis for the application of TLR9 agonists in asthma and allergy. We are also collaborating with Merck for the use of agonists of TLRs 7, 8, and 9 as adjuvants for vaccines for cancer, infectious diseases, and Alzheimer's disease. Over the next year, we plan to continue to support the important research and development in these collaborations. We are pleased to note that in early 2007, Novartis extended our collaboration for an additional year.

2006 was also a year of successful financial management. We secured $19.5 million from new and existing shareholders. Additionally, in December we received $20 million in upfront license fees and $10 million from the sale of equity to Merck. These financial resources provide Idera with greater flexibility to fund our development efforts going forward.

Our corporate achievements in 2006 reflect our efforts to build a leading biopharmaceutical company focused on therapeutics targeting TLRs. We believe 2007 will be a year of continued scientific leadership, clinical advancement and business execution. Everyone at Idera joins me in thanking our shareholders for their continued support.

Sincerely,

Sudhir Agrawal, D. Phil.
Chief Executive Officer and Chief Scientific Officer

Idera Pharmaceuticals, Inc. Condensed Statements of Operations (In thousands, except per share data)

	Years Ended December 31,	
	2006	2005
Alliance Revenue	$ 2,421	$ 2,467
Operating Expenses		
Research & Development	12,705	11,170
General & Administrative	6,276	5,120
Total Operating Expenses	18,981	16,290
Loss from Operations	(16,560)	(13,823)
Other, net	80	117
Loss before Income Taxes	(16,480)	(13,706)
Income Tax Provision	(45)	-
Net Loss Applicable to Common Stockholders	$ (16,525)	$ (13,706)
Basic and Diluted Net Loss Per Share Applicable to Common Stockholders	$ (0.99)	$ (0.99)
Shares Used in Computing Basic and Diluted Net Loss Per Common Share	16,625	13,886

Idera Pharmaceuticals, Inc. Condensed Balance Sheets (In thousands)

	December 31,		
		Pro Forma (1)	
	2006	2006 (unaudited)	2005
Cash, Cash Equivalents and Investments	$ 38,187	$ 38,153	$ 8,376
Receivables & Other Assets	2,354	2,056	1,613
Total Assets	$ 40,541	$ 40,209	$ 9,989
Deferred Revenue – Current	$ 5,992	$ 5,992	$ 2,171
Other Current Liabilities	2,026	1,992	1,881
Notes Payable	5,033	-	5,033
Other Non-Current Liabilities	3	3	10
Deferred Revenue – Non-current	15,250	15,250	1,229
Stockholders' Equity (Deficit)	12,237	16,972	(335)
Total Liabilities & Stockholders' Equity	$ 40,541	$ 40,209	$ 9,989

(1) The Pro Forma December 31, 2006 Balance Sheet reflects the conversion of all of the Company's 4% convertible notes into 706,844 shares of common stock on February 20, 2007. The Pro Forma column also reflects the reclassification of deferred financing costs to equity and the payment of accrued interest as of December 31, 2006.

BOARD OF DIRECTORS

James B. Wyngaarden, M.D.
Chairman of the Board, Idera Pharmaceuticals, Inc.
Former Director, National Institutes of Health

Youssef El Zein
Vice Chairman, Idera Pharmaceuticals, Inc.
Director, Optima Life Sciences
Managing Director, Pillar Investment Limited

Sudhir Agrawal, D. Phil.
Chief Executive Officer and
Chief Scientific Officer, Idera Pharmaceuticals, Inc.

Robert W. Karr, M.D.
President, Idera Pharmaceuticals, Inc.

C. Keith Hartley
President, Hartley Capital Advisors

William S. Reardon, CPA
Retired Audit Partner, PricewaterhouseCoopers, LLP

Alison Taunton-Rigby, Ph.D., O.B.E.
Founder, President, Chief Executive Officer and Director,
RiboNovix, Inc.

Paul C. Zamecnik, M.D.
Director Emeritus
Professor Oncologic Medicine Emeritus, Harvard Medical School
Honorary Physician and Senior Scientist,
Massachusetts General Hospital

MANAGEMENT

Sudhir Agrawal, D. Phil.
Chief Executive Officer and Chief Scientific Officer

Robert W. Karr, M.D.
President

Robert G. Andersen
Chief Financial Officer and Vice President of Operations
Treasurer and Secretary

Alice S. Bexon, MBChB.
Vice President, Clinical Development

Timothy M. Sullivan, Ph.D.
Vice President, Development Programs

Ekambar R. Kandimalla, Ph.D.
Senior Director, Research

David M. Lough, Ph.D.
Director, Business Development

Steven J. Ritter, Ph.D., J.D.
Intellectual Property Counsel

Frank Whalen
Controller

Stockholders' Meeting

The 2007 Annual Meeting of Stockholders will be held at the Hotel @ MIT, 20 Sidney Street, Cambridge, MA on June 13, 2007 at 10:00 a.m. EDT. A notice of the meeting, proxy statement and proxy voting card have been mailed to stockholders with this Annual Report.

Investor Relations

Additional copies of this Annual Report, including the Company's Annual Report on Form 10-K for the year ended December 31, 2006, as filed with the Securities and Exchange Commission, are available upon request to:

Investor Relations
Idera Pharmaceuticals, Inc.
345 Vassar Street
Cambridge, MA 02139

Company information is available at: www.iderapharma.com or 617-679-5500, x5519.

Registrar & Transfer Agent

Mellon Investor Services LLC
480 Washington Boulevard
Jersey City, NJ 07310-1900
Web: www.melloninvestor.com

Toll Free Number:	1-800-288-9541
TDD Hearing Impaired:	1-800-231-5469
Foreign Stockholders:	1-201-680-6578
TTD Foreign Stockholders:	1-201-680-6610

Outside Legal Counsel

Wilmer Cutler Pickering Hale & Dorr, LLP
60 State Street
Boston, MA 02109

Independent Auditors

Ernst & Young, LLP
200 Clarendon Street
Boston, MA 02116

Common Stock Symbol

AMEX: IDP

Forward-Looking Statement:

Any statements that we may make in this Annual Report about future expectations, plans and prospects for the Company constitute forward-looking statements for purposes of the safe harbor provisions under The Private Securities Litigation Reform Act of 1995. Actual results may differ materially from those indicated by these forward-looking statements as a result of various important factors, including the risks set forth under the caption "Risk Factors" on page 16 in Idera's Annual Report on Form 10-K for the year ended December 31, 2006. Idera disclaims any intention or obligation to update any forward-looking statements.

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PHARMACEUTICALS

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