

ACHILLION PHARMACEUTICALS INC

Form 10-K

March 29, 2007

[Table of Contents](#)

---

**UNITED STATES**  
**SECURITIES AND EXCHANGE COMMISSION**

Washington, D.C. 20549

---

**FORM 10-K**

---

☒ ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934  
For the fiscal year ended December 31, 2006

OR

☐ TRANSITION REPORT PURSUANT TO SECTIONS 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934  
For the transition period from \_\_\_\_\_ to \_\_\_\_\_

Commission File Number 001-33095

---

**ACHILLION PHARMACEUTICALS, INC.**

(Exact name of registrant as specified in its charter)

---

**Delaware**  
(State or other jurisdiction of

incorporation or organization)

**300 George Street, New Haven, CT 06511**

(Address of principal executive offices) (Zip Code)

Registrant's telephone number, including area code: **(203) 724-6000**

**52-2113479**  
(I.R.S. Employer

Identification No.)

# Edgar Filing: ACHILLION PHARMACEUTICALS INC - Form 10-K

---

## Securities registered pursuant to Section 12(b) of the Act:

Title of Class	Name of Exchange on Which Registered
Common Stock, \$0.001 par value per share	NASDAQ Global Market

Securities registered pursuant to Section 12(g) of the Act: None

---

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes ☐ No ☒

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act. Yes ☐ No ☒

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 if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K is not contained herein, and will not be contained, to the best of the registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K. ☐

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, or a non-accelerated filer. See definition of accelerated filer and large accelerated filer in Rule 12b-2 of the Exchange Act (Check one):

Large accelerated filer ☐ Accelerated filer ☐ Non-accelerated filer ☒

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

The aggregate market value of the voting and non-voting common equity held by non-affiliates computed by reference to the price at which the common equity was last sold on the NASDAQ Global Market on March 1, 2007 was \$74,810,665. The registrant has provided this information as of March 1, 2007 because its common equity was not publicly traded as of the last business day of its most recently completed second fiscal quarter.

As of March 1, 2007, the registrant had 15,543,214 shares of Common Stock, \$0.001 par value per share, outstanding.

## DOCUMENTS INCORPORATED BY REFERENCE

Items 10, 11, 12, 13 and 14 of Part III (except for information required with respect to our executive officers, which is set forth under Part I, Item 1 Business Executive Officers of the Registrant) and the information required by Item 5 relating to our equity compensation plans have been omitted from this report, as we expect to file with the Securities and Exchange Commission, not later than 120 days after the close of our fiscal year ended December 31, 2006, a definitive proxy statement for our annual meeting of stockholders. The information required by Items 10, 11, 12, 13 and 14 of Part III and the information required by Item 5 relating to our equity compensation plans, which will appear in our definitive proxy statement, is incorporated by reference into this report.

---

**Table of Contents**

**TABLE OF CONTENTS**

<b><u>PART I</u></b>		1
Item 1.	<u>Business</u>	1
Item 1A.	<u>Risk Factors</u>	30
Item 1B.	<u>Unresolved Staff Comments</u>	45
Item 2.	<u>Properties</u>	45
Item 3.	<u>Legal Proceedings</u>	45
Item 4.	<u>Submission of Matters to a Vote of Security Holders</u>	45
<b><u>PART II</u></b>		46
Item 5.	<u>Market for Registrant's Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities</u>	46
Item 6.	<u>Selected Financial Data</u>	48
Item 7.	<u>Management's Discussion and Analysis of Financial Condition and Results of Operations</u>	49
Item 7A.	<u>Quantitative and Qualitative Disclosures About Market Risk</u>	62
Item 8.	<u>Financial Statements and Supplementary Data</u>	63
Item 9.	<u>Changes in and Disagreements with Accountants on Accounting and Financial Disclosure</u>	63
Item 9A(T)	<u>Controls and Procedures</u>	63
Item 9B.	<u>Other Information</u>	63
<b><u>PART III</u></b>		63
Item 10.	<u>Directors, Executive Officers and Corporate Governance of the Registrant</u>	64
Item 11.	<u>Executive Compensation</u>	64
Item 12.	<u>Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters</u>	64
Item 13.	<u>Certain Relationships and Related Transactions, and Director Independence</u>	64
Item 14.	<u>Principal Accountant Fees and Services</u>	64
<b><u>PART IV</u></b>		65
Item 15.	<u>Exhibits and Financial Statement Schedules</u>	65
	Signatures	66

## **Table of Contents**

*This Annual Report on Form 10-K contains forward-looking statements within the meaning of Section 21E of the Securities Exchange Act of 1934, as amended, that involve risks and uncertainties. All statements other than statements relating to historical matters (including statements to the effect that we believe, expect, anticipate, plan, target and similar expressions) should be considered forward-looking statements. Our actual results could differ materially from those discussed in the forward-looking statements as a result of a number of important factors, including the factors discussed in this section and elsewhere in this Annual Report on Form 10-K, including those discussed in Item 1A of this report under the heading Risk Factors, and the risks discussed in our other filings with the Securities and Exchange Commission. Readers are cautioned not to place undue reliance on these forward-looking statements, which reflect management's analysis, judgment, belief or expectation only as of the date hereof. We assume no obligation to update these forward-looking statements to reflect events or circumstances that arise after the date hereof.*

## **PART I**

### **ITEM 1. BUSINESS**

#### **Overview**

We are a biopharmaceutical company focused on the discovery, development and commercialization of innovative treatments for infectious diseases. Within the anti-infective market, we are currently concentrating on the development of antivirals for the treatment of HIV infection and chronic hepatitis C and the development of antibacterials for the treatment of serious hospital-based bacterial infections. We have advanced our lead drug candidate, elvucitabine for the treatment of HIV infection, into phase II clinical trials. In addition, we are advancing two late-stage preclinical candidates, ACH-702 for the treatment of serious hospital-based bacterial infections, and in collaboration with Gilead Sciences, a series of NS4A antagonists for the treatment of chronic hepatitis C.

We believe that there are several business advantages to developing anti-infective drugs as compared to developing drugs in other therapeutic areas. The emergence of drug resistance seen with current antiviral and antibacterial therapy creates a continuing need for new drugs, which we believe provides us with a large and growing business opportunity.

We have established our drug candidate pipeline through our internal discovery capabilities and through the in-licensing of an attractive drug candidate. Through these efforts we have identified and are developing the following three lead drug candidates:

**Elvucitabine for HIV Infection.** Elvucitabine, an antiviral we are developing for the treatment of HIV infection, is our most advanced clinical-stage drug candidate. We are currently evaluating elvucitabine in phase II clinical trials to further explore its safety and efficacy in HIV-infected patients. In May 2006, we completed one of these phase II clinical trials. Results from this trial demonstrated that patients who received a once-daily 10 mg dose of elvucitabine for seven days experienced a significant mean viral load reduction as compared to those patients who received a placebo. These results are based on a small number of patients in an early-stage clinical trial, and are not necessarily predictive of results in later-stage clinical trials with larger and more diverse patient populations. If we receive additional favorable data from our other phase II trials, we expect to hold discussions with the FDA in mid-2007 to receive guidance on the development of our phase III protocols. Elvucitabine is a member of the nucleoside reverse transcriptase inhibitor, or NRTI, class of compounds, the predominant class of drugs used in the current standard of care for HIV therapy. Currently marketed drugs have several therapeutic limitations, including the development of HIV strains that are resistant to currently approved drugs, short half-lives which exacerbate drug resistance, inadequate patient compliance due to adverse side effects and complex dosing schedules, and limited combination treatment options due to cross resistance and drug-to-drug interactions. Elvucitabine has demonstrated potent antiviral activity against HIV, including HIV strains that are resistant to frequently prescribed NRTIs, as well as

---

## **Table of Contents**

a half-life significantly longer than that of currently approved NRTIs. We believe this profile will allow us to position elvucitabine, if approved, favorably in the NRTI market. We currently retain full development and marketing rights to elvucitabine.

**ACH-702 for Serious Hospital-Based Bacterial Infections.** Our most advanced preclinical candidate is ACH-702, which we are developing for the treatment of serious hospital-based bacterial infections. In several preclinical studies, ACH-702 has exhibited potent antibacterial activity against a large number of medically relevant bacteria, including methicillin resistant *staphylococcus aureus* strains, highly prevalent hospital-based infections. Preclinical studies to date have also suggested that the compound has a bacteria-killing mechanism of action and may be administered in both intravenous and oral formulations. We expect to submit an investigational new drug application, or IND, for ACH-702 to the U.S. Food and Drug Administration, or FDA, in mid- 2007.

**NS4A Antagonists for Chronic Hepatitis C Infection.** In our second preclinical-stage program, we are evaluating drug candidates for the treatment of chronic hepatitis C in collaboration with Gilead Sciences. In preclinical studies, these compounds demonstrate potent inhibition of the replication of HCV, the virus that causes hepatitis C, by targeting a non-structural, or NS, viral protein called 4A. We believe these NS4A antagonists offer several potential advantages compared to currently available treatments, including greater potency, a novel mechanism of action, lack of cross resistance and the potential for oral administration. We believe these compounds could be used in combination with the current standard of care, or with other therapies in development, to significantly improve treatment outcomes. In November 2004, we entered into a collaboration agreement and exclusive license with Gilead Sciences for the research, development and commercialization of compounds for the treatment of chronic hepatitis C, including these compounds. Our first drug candidate demonstrating this mechanism of action, ACH-806 (also known as GS-9132) was determined to have positive antiviral effect in a proof-of-concept clinical trial in HCV infected patients, but also to elevate serum creatinine levels, a marker of kidney function. A proof-of-concept clinical trial is generally a late stage Phase I or early stage Phase II clinical trial, the objective of which is to demonstrate that the tested drug shows a beneficial effect. As a result, we and Gilead elected to discontinue further clinical development of ACH-806 in favor of our next generation compounds. We are currently completing our assessment of new lead candidates in order to nominate one for clinical development.

In addition to our three lead drug candidates, we have earlier-stage preclinical programs focused on the treatment of HIV infection through the inhibition of viral proteins not targeted by currently marketed drugs, such as the capsid protein, and the treatment of HCV infection through compounds that have mechanisms of action that are distinct from NS4A antagonists.

We intend to focus on the discovery of new drug candidates through our extensive expertise in virology, microbiology and synthetic chemistry. Utilizing these capabilities, we have thus far internally discovered our previous lead HCV compound, ACH-806, our recently discontinued drug candidate, as well as back-up compounds such as ACH-1095, and our lead antibacterial candidate, ACH-702. In the aggregate, members of our drug discovery, preclinical and clinical development team have contributed to the selection and development of more than 80 clinical candidates and 50 marketed products throughout their careers. Although significant additional research and development will be required after the discovery of any new drug candidate, we believe our drug discovery capabilities will allow us to further expand our product candidate portfolio, providing us with strong growth potential and reducing our reliance on the success of any single drug candidate.

## **Background**

Infectious diseases are caused by pathogens present in the environment, such as viruses, bacteria and fungi, which enter the body through the skin or mucous membranes and overwhelm its natural defenses. Some infections affect the entire body, while others may be localized in one organ or system within the body. The severity of infectious diseases varies depending on the nature of the infectious agent, as well as the degree to

## **Table of Contents**

which the body's immune system can fight the infection. According to World Health Organization reports, infectious diseases, including HIV infection, chronic hepatitis C and drug-resistant bacterial infections, represent a significant cause of morbidity and mortality worldwide.

The market for anti-infective drugs can be divided into three main categories: antivirals, antibacterials (often referred to as antibiotics) and antifungals. To date, we have focused on the research and development of products for the antiviral and antibacterial markets.

The widespread use of anti-infective drugs has led to a significant reduction in morbidity and mortality associated with infectious diseases. However, for many infectious diseases, current treatment options are associated with suboptimal treatment outcomes, significant drug-related adverse side effects, complex dosing schedules and inconvenient methods of administration, such as injection or infusion. These factors often lead to patients discontinuing treatment or failing to comply fully with treatment dosing schedules. As a result, physicians are often required to modify therapy regimens throughout the course of treatment.

Moreover, in recent years, the increasing prevalence of drug resistance has created ongoing treatment challenges for antiviral and antibacterial therapies. The ability of both viruses and bacteria to adapt rapidly to these treatments through genetic mutations allows new strains to develop that are resistant to currently available drugs. In addition, a patient's failure to comply fully with a treatment regimen both accelerates and exacerbates drug resistance. This is particularly well documented for HIV treatments and antibacterials.

As a result of these treatment challenges, the industry is focused on developing anti-infective drugs that delay the emergence of drug resistance, improve patient compliance and improve treatment responses in infections associated with drug-resistant pathogens.

We believe there are significant business advantages to focusing on the development of drugs to treat infectious diseases, including the following:

the emergence of drug resistance creates a continuing need for new drugs to combat infectious diseases, thus creating a large and growing business opportunity;

infectious disease research and development programs generally have shorter development cycle times when compared to various therapeutic areas such as oncology, cardiovascular and central nervous system disorders; and

evidence suggests systemic anti-infectives have a higher clinical success rate compared to various therapeutic areas such as oncology, cardiovascular and central nervous system disorders.

### ***Viruses***

Viruses are submicroscopic infectious agents consisting of an outer layer of protein surrounding a core of genetic material comprised of DNA or RNA. Viruses require living host cells to grow and multiply. In many cases, the body's immune system can effectively combat the viral infection. However, in certain viral infections, the body's immune system is unable to destroy the virus, and the infection becomes chronic. In chronic infections, persistent viral replication and subsequent infection of healthy cells may, over time, lead to the deterioration or destruction of the infected cells, resulting in disease. Antiviral drugs are utilized to assist the body's immune system in combating or eliminating the infection.

The development of resistance to antiviral drugs is a major challenge for the treatment of life-threatening viral infections such as HIV and chronic hepatitis C. The ability of viruses to mutate spontaneously during replication allows drug-resistant viral strains to emerge when patients are on treatment regimens that do not completely inhibit viral replication. This phenomenon has been particularly well documented in HIV. Resistance occurs because viruses continually make billions of copies of themselves, some of which will contain mutations

## **Table of Contents**

in their genetic material. Mutations that confer a replication advantage in the presence of a suppressive antiviral drug will give rise to viral strains that are resistant or partially resistant to that antiviral drug. These mutated viruses, while initially found in low numbers, will eventually become the predominant strain in an infected patient. Once this occurs, the treatment benefit of the antiviral drug diminishes or disappears, which may result in treatment failure and create a need for an alternate therapy with new drugs.

Antiviral drug resistance is clinically managed by the administration of one or more potent direct-acting antiviral drugs and/or by enhancing the body's immune system through treatment with an immune response modifier to apply the highest possible level of suppression against viral replication. These direct acting antiviral drugs prevent viral replication by disrupting processes that are essential for completion of a viral infection cycle. The most effective disruption generally results from the use of multiple drugs that have different mechanisms of action.

### ***Bacteria***

Bacteria are unicellular, self-propagating microorganisms that multiply through growth in bacterial cell size and the subsequent division of the cell. Bacteria can be broadly classified into two categories based upon the composition of their cell walls: gram-positive or gram-negative. Many antibacterial drugs that are effective against gram-positive bacteria are less effective or ineffective against gram-negative bacteria, and vice versa. Antibacterial drugs that are active against a large number of both classes of bacteria are often referred to as broad-spectrum antibacterials.

Bacteria adapt remarkably well to their surroundings due to the high level of variation found within bacterial DNA and the ability of bacteria to reproduce rapidly. Replication of bacterial DNA is often error prone and can result in a high frequency of mutations. Because the bacterial reproductive cycle is very short, ranging from minutes to several days, a mutation that helps a bacterium survive exposure to an antibiotic drug may quickly become dominant throughout the population. Additionally, bacteria can acquire segments of DNA from other bacteria and organisms, which can also convey drug resistance.

Currently marketed antibacterials have historically proved highly successful in controlling the morbidity and mortality that accompany bacterial infections. The first antibacterials, introduced over 60 years ago, were highly effective in limiting or completely inhibiting bacterial reproduction, and thus were considered miracle drugs. A majority of the antibiotics currently in use were developed and introduced into the market before 1980. However, due to the widespread use of antibacterials over time and the ability of bacteria to develop drug resistance, many of these antibiotics now have diminished or limited antibacterial activity. This problem is particularly acute in the hospital setting, where approximately 70% of certain types of serious infections are associated with multi-drug-resistant bacteria. The inability to effectively treat serious infections caused by drug-resistant bacteria has led to increased mortality rates, prolonged hospitalizations and increased health care costs. The rate at which bacteria are now developing resistance to multiple antibacterials, and the pace at which those multi-drug-resistant bacteria are spreading, represent significant medical challenges.

### **Our Strategy**

Our objective is to become a leading infectious disease-focused biopharmaceutical company. We believe the infectious disease market is highly attractive due to its size, continued demand for new products to address the consequences of drug resistance and generally shorter development cycle times. In order to achieve our objective, we intend to:

*Advance the Development of Our Current Drug Candidates.* We are developing our most advanced clinical compound, elvucitabine, for the treatment of HIV infection. We are also developing two late-stage preclinical compounds: ACH-702 for the treatment of serious hospital-based bacterial infection and, in a collaboration and exclusive license arrangement with Gilead Sciences, for the treatment of

## **Table of Contents**

chronic HCV infection, our series of NS4A antagonists. In addition, we are progressing additional discovery stage candidates for the treatment of HIV infection and chronic hepatitis C. In particular, we expect to:

complete our phase II clinical trials for elvucitabine in mid-2007 and, if supported by favorable data from the phase II trials, hold discussions later in 2007 with the FDA to receive guidance on the development of our phase III clinical trial protocols;

submit an IND to the FDA for ACH-702 in mid 2007; and

complete early preclinical testing of one of our NS4A antagonists such as ACH-1095 and nominate one of these compounds for clinical development in mid 2007.

*Expand our Infectious Disease Portfolio.* We intend to leverage our expertise in synthetic chemistry, virology and microbiology to quickly and efficiently discover and develop additional anti-infective compounds. As recent examples of our capabilities, our research team designated clinical lead candidates in our HCV program (both ACH-806, a recently discontinued drug candidate, and ACH-1095, a possible successor compound with a similar mechanism of action) and antibacterial program (ACH-702) in fewer than 24 months from program inception. We may augment our internal discovery capabilities and further expand our pipeline by in-licensing and/or acquiring differentiated drug candidates, as we did with elvucitabine, or additional discovery technologies.

*Accelerate Growth Through Selective Collaborations.* We intend to establish strategic collaborations where we believe we can accelerate the development or maximize the value of our drug candidates by utilizing the financial, clinical development, manufacturing and/or commercialization strengths of a leading biotechnology or pharmaceutical company. As part of this strategy, we entered into a collaboration with Gilead Sciences in November 2004 for the development and commercialization of certain of our HCV compounds demonstrating a mechanism of action we call NS4A antagonism, pursuant to which we received a significant up-front payment and are utilizing Gilead Sciences' broad capabilities to accelerate the progress of this series of drug candidates.

*Pursue a Diversified Commercial Strategy.* If we successfully develop any drug candidates through regulatory approval, on a selected basis, we plan to participate in their commercialization. We have retained all commercialization rights for elvucitabine and ACH-702. We intend to eventually build and deploy a focused, North American sales force to support the sales and marketing of those drug candidates, if any, for which we receive FDA marketing approval and for which we believe it is possible to effectively and efficiently access the market. In addition, we may agree to collaborate with other companies to co-promote our drug candidates in North America, if and when they are approved by the FDA, in instances where we believe a larger sales and marketing presence will expand the market or accelerate market penetration. We intend to utilize strategic alliances with third parties to commercialize any drugs we successfully develop in markets outside North America. In addition, while we have granted Gilead Sciences worldwide commercialization rights for certain of our HCV compounds, we have the option to participate on a limited basis in marketing efforts in the United States.

We have spent substantial research and development funds to develop our product pipeline and expect to continue to do so in the future. We incurred approximately \$22.7, \$18.1 and \$14.8 million in research and development costs for the years ended December 31, 2006, 2005 and 2004, respectively.



**Table of Contents****Our Drug Candidates**

The following table summarizes key information regarding our drug candidates:

<b>Drug</b>					
<b>Candidate/</b>					<b>Current Marketing Rights</b>
<b>Indication</b>	<b>Target</b>	<b>Stage of Development</b>	<b>Current Status</b>		
<b>Elvucitabine</b>	HIV reverse transcriptase	Phase II	Phase II placebo-controlled viral kinetics, safety and pharmacokinetics trial in HIV treatment-naïve patients completed		Achillion
<i>HIV Infection</i>			Phase II comparative safety, antiviral efficacy and pharmacokinetics trial in HIV treatment-naïve patients; currently screening expected completion in mid-2007		
			Phase II comparative viral kinetics, safety and pharmacokinetics trial in HIV treatment-experienced patients; currently screening expected trial completion in mid-2007		
<b>ACH-702</b> <i>Serious Hospital-Based Bacterial Infections</i>	DNA replication enzymes	IND-enabling preclinical studies	IND-enabling preclinical studies complete expected in mid-2007	IND submission	Achillion
<b>NS4A Antagonists</b>	HCV protein NS4A	Preclinical studies	Preclinical studies in progress	IND submission expected in mid-2008	Gilead Sciences*
<i>Chronic Hepatitis C Infection</i>					
<b>HIV Inhibitor</b> <i>HIV Infection</i>	Nucleocapsid protein	Discovery	Lead optimization studies in progress		Achillion
<b>HCV Inhibitor</b> <i>Chronic HCV Infection</i>	Undisclosed	Discovery	Lead optimization studies in progress		Achillion

\* Achillion has a one-time option to participate on a limited basis in marketing in the United States.

**Elvucitabine for HIV**

Elvucitabine is an NRTI, which we are currently testing in phase II trials. Elvucitabine has demonstrated potent antiviral activity against HIV, including activity against HIV that contains mutations associated with resistance to other reverse transcriptase inhibitors such as Viread (tenofovir), Zerit (d4T) and Retrovir (AZT). Furthermore, elvucitabine has been demonstrated to have a significantly longer half-life than the other marketed drugs in its class. We believe that these attributes should allow elvucitabine to deliver consistent, potent antiviral activity to patients infected with HIV, particularly those patients with less than perfect compliance with their existing treatment regimens. We believe a treatment regimen containing elvucitabine may also delay the emergence of resistance and prolong the effectiveness of therapy. We have completed the first of our phase II clinical trials. The second of our phase II trials is fully enrolled and we anticipate that 12 week data will be available in mid 2007. Because of the strict entry criteria for our third phase II trial, which is based on genotype analysis, we anticipate that the enrollment period will continue through mid-2007. Therefore, we anticipate that the data from this trial will be available in mid to late 2007.

## **Table of Contents**

If supported by favorable data from these phase II trials, we intend to hold discussions with the FDA to receive guidance on development of protocols for our phase III trials.

### ***Overview of HIV Market***

HIV is a viral infection that, if left untreated, results in the development of the Acquired Immune Deficiency Syndrome, or AIDS. HIV is a retrovirus that uses RNA to encode its genetic material. When a person is infected with HIV, the virus infects cells that are associated with the body's immune system. The most common cells infected are the T-helper lymphocytes, which are also called CD4 cells. After attaching to CD4 cells, the virus is taken inside the cell, where, using host-cell machinery, it replicates its genetic material into DNA, a process known as reverse transcription. This step is facilitated by the viral enzyme reverse transcriptase. The subsequent completion of the viral life cycle ultimately leads to the destruction of CD4 cells. When the CD4 cell count, as measured in the blood, falls below a certain level, a person's immune system starts to fail, and a person becomes at risk for the development of AIDS and opportunistic infections.

HIV-infected patients are clinically managed by monitoring two key parameters in the blood—the number of CD4 cells and viral load, or the measurement of HIV RNA. The goal of antiviral treatment is to provide long-term suppression of HIV replication. This suppression allows the CD4 cells to increase toward normal levels, which decreases the likelihood of AIDS and/or death. Without treatment, HIV infection progresses to AIDS in 20-25% of infected individuals within six years and in 50% within ten years.

According to the Joint United Nations Programme on HIV/AIDS and the World Health Organization, an estimated 40 million people worldwide are infected with HIV. In addition, over 25 million people have died from AIDS since the epidemic began. The Centers for Disease Control and Prevention, or CDC, estimates that in the United States there were between 1,039,000 and 1,185,000 people living with HIV/AIDS in 2003, with 40,000 new infections annually. According to the Joint United Nations Programme on HIV/AIDS and the World Health Organization, in Europe and Central Asia there were approximately 2,320,000 people living with HIV/AIDS in 2005, with 292,000 new infections annually.

Currently, there is no cure for HIV infection. In addition, there are no preventative or therapeutic vaccines, but there are more than two dozen antiretroviral drugs on the market that target various steps in the HIV replication cycle. These can be divided into four drug classes that have been approved for the treatment of HIV infection:

NRTIs;

non-nucleoside reverse transcriptase inhibitors, or NNRTIs;

protease inhibitors; and

fusion inhibitors.

NRTIs and NNRTIs prevent HIV replication by interacting with reverse transcriptase. NRTIs, such as Efavir (3TC), Emtriva (FTC), Viread (tenofovir), Retrovir (AZT) and Zerit (d4T), have become the predominant class of drugs in HIV therapy. Without successful reverse transcription, the virus is unable to reproduce itself. When reverse transcription occurs in the presence of an NRTI, the NRTI is incorporated into the newly synthesized DNA strand and stops the reverse transcription process, thus preventing a complete copy of the viral RNA from being transcribed into DNA. NNRTIs, such as Sustiva (efavirenz), also prevent HIV replication through an interaction with reverse transcriptase, but with a mechanism of action distinct from NRTIs.

Protease inhibitors, such as Kaletra (lopinavir + ritonavir) and Viracept (nelfinavir), prevent viral assembly by blocking the action of HIV protease, an enzyme that is required to produce new, infectious viruses. Fusion inhibitors, also known as entry inhibitors, such as Fuzeon (enfuvirtide), prevent HIV from fusing to CD4 cells, thereby preventing the initial infection of CD4 cells by HIV.

## **Table of Contents**

Because of its high spontaneous mutation rate, HIV is especially prone to the development of resistance to a single therapeutic drug. As a result, the treatment paradigm for HIV has evolved from monotherapy to triple combination treatment known as highly active antiretroviral therapy, or HAART, which includes drugs from multiple drug classes to maximally suppress HIV replication. In accordance with current Department of Health and Human Services HIV Treatment Guidelines, the initial or first-line HAART regimens typically include two NRTIs with non-overlapping resistance patterns and either an NNRTI or a protease inhibitor. The use of HAART to manage HIV infections has resulted in a dramatic reduction in disease progression to AIDS and/or death. It is now believed that HIV-infected individuals can often be clinically managed for decades through daily treatment with HAART.

### ***Limitations of Current Therapies***

In spite of the benefits of HAART, all currently approved drugs have significant limitations, including the following:

*Development of Drug Resistance.* Ongoing viral replication in patients on a HAART regimen results in the emergence of viral strains that are no longer susceptible to one or more components of the regimen. If left unchecked, this may lead to treatment failure. In addition, development of resistance to certain drugs can lead to cross resistance, or resistance to other drugs of the same class, thus rendering a whole class of drugs ineffective. In order to regain viral suppression, patients failing a HAART regimen are switched to a new regimen comprised of drugs that are not cross resistant with drugs from previous regimens.

*Short Half-Lives of Currently Available Therapies.* Many of the currently available drugs have relatively short plasma half-lives, meaning the length of time the drug remains in the patient's bloodstream, as well as relatively short intracellular half-lives, meaning the length of time the drug remains in the patient's cells. The plasma half-life of a majority of the NRTIs is in the range of one to several hours, and the intracellular half-life of a majority of the NRTIs is approximately 18-20 hours. Short half-lives require patients to take their medications more frequently, or in the case of once-daily dosing, to take doses within a certain timeframe. If patients miss this window, or forget entirely to take their medication, the amount of drug in the bloodstream diminishes, creating an opportunity for increased viral replication and the emergence of drug resistance.

*Inadequate Patient Compliance.* A patient's ability to adhere to a HAART regimen will impact the treatment outcome. Virologic failure rates have been found to directly correlate with the level of compliance. In studies, 61% of patients with 80-94.9% adherence and 80% of those with less than 80% adherence to their dosing regimen were found to experience virologic treatment failure. The chronic nature of HIV disease and the long-term adverse side effects associated with certain drugs, such as the loss of subcutaneous fat associated with certain NRTIs, affect the ability of HIV patients to adhere perfectly or nearly perfectly to dosing schedules.

*Limited Treatment Options.* Most current HAART regimens include two NRTIs. Although there are currently seven commonly used NRTIs, not all of them can be paired together due to cross resistance and drug-to-drug interactions. As resistance develops and the efficacy of treatment regimens diminishes over time, patients cycle through different HAART regimens, eventually exhausting all the available NRTI pairings. Therefore, we believe that there is a continuing need for new NRTIs.

### ***Achillion Approach: Elvucitabine***

Elvucitabine is an L-cytosine NRTI, belonging to the same class as 3TC and FTC. L-cytosine NRTIs represent the most frequently prescribed class of NRTIs based upon sales, accounting for approximately 34% of the worldwide NRTI market in 2004. We believe L-cytosine NRTIs are frequently prescribed given their established potency, favorable short and long-term safety profile and fewer and less adverse side effects. In addition, laboratory data demonstrate that HIV with the M184V genotype, the mutation conferring resistance to 3TC and FTC, is unable to replicate as effectively as HIV with other resistance mutations.

**Table of Contents**

We believe elvucitabine addresses the limitations of currently available NRTIs in the following ways:

*Long Half-Life.* Elvucitabine's plasma half-life has been demonstrated in clinical trials to be approximately 100 hours, or up to 20 times greater than that of Epivir (3TC) and up to ten times greater than that of Emtriva (FTC). In addition, elvucitabine's intracellular half-life has been demonstrated in a clinical trial to be over 100 hours, or more than five times greater than that of Epivir (3TC) and Emtriva (FTC). We believe this long half-life may mitigate the negative effects of less than perfect patient compliance, providing a more durable NRTI for use in HAART regimens.

*Superior Potency Against Common Resistance Mutations.* The laboratory antiviral profile of elvucitabine demonstrates superior potency against many of the most common resistance mutations associated with NRTIs typically used in combination with Epivir (3TC) and Emtriva (FTC), including those associated with Viread (tenofovir), Retrovir (AZT) and Zerit (d4T). In addition, although elvucitabine's resistance profile is similar to Epivir (3TC) and Emtriva (FTC), elvucitabine retains greater antiviral activity in laboratory tests against HIV with resistance to Epivir (3TC) and Emtriva (FTC). We believe this enhanced antiviral activity could provide an increased barrier to the emergence of drug resistance in patients and improve antiviral suppression in patients with emerging resistance to commonly used NRTIs.

*Patient Compliance.* We believe that a well-tolerated L-cytosine NRTI with convenient, flexible oral dosing will enhance patient compliance and will make elvucitabine attractive as a component of HAART regimens. With a projected daily dose of elvucitabine of 10 mg in a tablet formulation, compared to 200 mg for Emtriva (FTC) and 300 mg for Epivir (3TC), we also believe elvucitabine could be an attractive candidate as part of a combination product for use in HAART regimens.

**Ongoing and Planned Clinical Development**

Our current plans for clinical development of elvucitabine include the following phase II trials to further explore the safety and efficacy profile of elvucitabine in HIV-infected patients:

<b>Trial Design</b>	<b>Population</b>	<b>Sites and Location</b>	<b>Patient Number</b>	<b>Dosing Duration</b>	<b>Status</b>
Phase II placebo-controlled viral kinetics, safety and pharmacokinetics trial	HIV treatment-naïve patients	Single site in Europe	24	7 days	Complete.
Phase II comparative viral kinetics, safety and pharmacokinetics trial	HIV treatment-experienced patients	17 sites in the United States, Europe and Latin America	20	14 days, with extension of 24 additional weeks	Currently screening; trial expected to be completed in mid 2007.
Phase II comparative safety, antiviral efficacy and pharmacokinetics trial	HIV treatment-naïve patients	21 sites in the United States and India	60	12 weeks, with extension to 96 weeks	Currently screening; trial expected to be completed in mid 2007.



## **Table of Contents**

In May 2006 we completed a randomized, double-blind phase II trial in which we evaluated the viral kinetics, safety and pharmacokinetics of elvucitabine in 24 treatment-naïve HIV patients, that is, patients who have not previously been treated for their HIV infection. Patients received once daily either 10 mg of elvucitabine or a placebo for seven days. An acceptable treatment response for this trial was defined as the elvucitabine cohort demonstrating greater reduction in HIV viral load on day seven, as compared to the viral load observed in patients taking a placebo. The results from this trial demonstrated that patients who received a 10 mg dose of elvucitabine once daily experienced a mean viral load reduction of 0.85 logs, or 83%, on day seven. Patients who received a placebo experienced a mean -0.06 log change, or <1%, at day seven. In addition, patients who received elvucitabine experienced a mean increase in CD4 cells of approximately 20%, compared to a mean increase of <1% in patients receiving a placebo. This trial further demonstrated that the plasma half-life of elvucitabine is approximately 100 hours and that its intracellular half-life is also greater than 100 hours. During this trial, elvucitabine had not achieved steady state, that is, the point at which minimum plasma levels no longer increase after repeat dosing. Based upon our previous clinical studies of elvucitabine, we believe elvucitabine's steady state occurs following 21 days of dosing. Therefore, we believe that if we had dosed patients for longer than seven days, there would have been a further increase in patients' viral reduction and CD4 cell counts, although we do not have any data from this clinical trial to support this belief. We observed no serious or clinically significant adverse events during this trial. These results are based on a small number of patients in an early-stage clinical trial and are not necessarily predictive of results in later-stage clinical trials with larger and more diverse patient populations.

We initiated a randomized, double-blind phase II trial in December 2005 in which we are evaluating the viral kinetics, safety and pharmacokinetics of elvucitabine in 20 HIV-infected patients who have failed a HAART regimen which included Efavir (3TC). Treatment failure is defined as the presence of the M184V mutation, which signifies Efavir (3TC) drug resistance. Patients receive either 10 mg of elvucitabine once daily in place of Efavir (3TC) or continue receiving 300 mg of Efavir (3TC) once daily for 14 days. The patients' other two HAART regimen drugs remain unchanged. An acceptable treatment response for this trial is defined as the elvucitabine cohort demonstrating greater reduction in HIV viral load on day 14, as compared to the viral load observed in patients remaining on Efavir (3TC). If patients respond favorably, we expect to allow them to receive an additional 24 weeks of therapy with elvucitabine. Because of the strict entry criteria for this trial, which is based on genotype analysis, we anticipate that the enrollment period will continue through mid-2007. Therefore, we anticipate data from this trial will be available in mid to late 2007.

We initiated a randomized, double-blind phase II trial in May 2006 of elvucitabine in combination with two additional antiretrovirals (Sustiva (efavirenz) and Viread (tenofovir)), as compared to Efavir (3TC) in combination with the same two additional antiretrovirals, in 60 treatment-naïve HIV patients. We will evaluate the safety, antiviral efficacy and pharmacokinetics of 12 weeks of therapy with these two treatment regimens. An acceptable treatment response for this trial is defined as the patients demonstrating a viral load less than a specified level at the end of the initial 12-week period. If patients respond favorably, they may receive an additional 84 weeks of therapy with elvucitabine. We anticipate 12-week data from this trial to be available in mid 2007.

If we receive favorable data from these trials, we expect to hold discussions later in 2007 with the FDA to obtain guidance on development of our phase III protocols wherein we expect to collect data during 48 weeks of dosing in over 1,000 patients.

### ***Clinical Development History***

Between 2001 and 2003, we conducted several clinical trials to determine the safety, tolerability and pharmacokinetic profile of elvucitabine for use against both hepatitis B virus, or HBV, and HIV. Specifically, we conducted three phase I clinical trials in healthy subjects, two phase II clinical trials in patients infected with HBV, and one phase II clinical trial in patients infected with HIV. In the phase II clinical trials for HBV, we evaluated doses of 5, 10, 20 and 50 mg once daily and noted that all doses greater than 5 mg were effective in

## **Table of Contents**

reducing HBV viral load by 99%, or 3.5log10 copies/ml. Despite this result, our current commercial plans do not include developing elvucitabine as a treatment for HBV. In the phase II clinical trial for HIV, we evaluated doses of 50 and 100 mg once daily and noted that both dose groups demonstrated reduction in viral load by 80%, or .7log10 copies/ml. We further noted that doses of 50 mg or greater per day were associated with an unacceptable reduction in the number of patients' white and red blood cells. In 2003, the clinical trial was discontinued, and the elvucitabine program was placed on clinical hold while determination of the appropriate dosing regimen for elvucitabine was made.

In 2004, while operating under a partial clinical hold placed by the FDA, we evaluated the therapeutic window and pharmacokinetic profile of elvucitabine in HIV-infected patients with a 21-day, open label phase II clinical trial of 24 HIV treatment-naïve patients. The patients received elvucitabine at either 5 mg or 10 mg once daily, or 20 mg every 48 hours, in each case in combination with the protease inhibitor Kaletra (lopinavir + ritonavir). We made frequent measurements of elvucitabine plasma levels throughout the trial. Results from the trial demonstrated that all three doses are similar in antiviral activity, reducing the viral load by approximately 98%, or 1.9log10 copies/ml. All three doses also showed similar safety profiles without the occurrence of any serious adverse events, particularly white or red blood cell reduction. Importantly, the trial also demonstrated that the amount of elvucitabine present in patients' plasma 24 hours following their previous dose was well in excess of those amounts necessary to deliver potent antiviral activity. From this trial, we concluded that the plasma half-life of elvucitabine is approximately 100 hours and chose a dose of 10 mg once daily for evaluation in our current phase II safety and efficacy trials in HIV-infected patients. Following the completion of this clinical trial, the FDA removed the partial clinical hold.

### ***Preclinical Development History***

We sublicensed elvucitabine from Vion Pharmaceuticals (which licensed the relevant patents and intellectual property from Yale University) and initiated development activities in 2000. In preclinical studies, elvucitabine has been shown to be approximately four-fold more potent *in vitro* than Efavir (3TC) against wild-type HIV, meaning HIV without mutations associated with drug resistance. In addition, elvucitabine demonstrates greater potency *in vitro* against HIV with resistance to most of the commonly used NRTIs such as Efavir (3TC), Retrovir (AZT), Zidovudine (ZDV) and Viread (tenofovir). These studies were conducted at several laboratories with more than 70 clinical strains of HIV obtained from patients with drug resistance and eight laboratory strains of HIV with known reverse transcriptase resistance mutation profiles.

### **ACH-702, Anti-MRSA Antibacterial**

ACH-702 is an internally discovered compound that we are developing as a treatment for serious nosocomial, or hospital-based, bacterial infections. We recently completed the IND-enabling preclinical studies to support clinical evaluation of this drug and are currently analyzing those results. We expect to submit an IND to the FDA in mid 2007.

### ***Overview of Hospital-Based Antibacterials Market***

CDC data shows that antibacterial resistance has been increasing dramatically over the past few decades. Antibacterial resistance is most pronounced in the hospital setting, where the heavy use of antibiotics creates an ideal environment for the development of drug resistance. Approximately 70% of nosocomial infections are resistant to at least one antibiotic.

One of the most common pathogenic bacteria is a gram-positive bacterium referred to as *Staphylococcus aureus*, or *S. aureus*. It can cause serious infections of the skin, bloodstream, bones or joints. In 2002, 57% of *S. aureus* infections in the hospital were due to infections with strains of *S. aureus* that were resistant to methicillin, part of a commonly used class of antibiotics. Frequently, these methicillin resistant *S. aureus* strains, commonly referred to as MRSA, are also resistant to other classes of antibacterials such as cephalosporins and

## Table of Contents

quinolones. Consequently, MRSA is commonly used to refer to multi-drug-resistant bacteria associated with serious infections. The increasing difficulty in treating MRSA and other multi-drug-resistant hospital-based infections has led to higher morbidity and mortality rates, as well as increasing health care expenditures.

Historically, the pharmaceutical industry was able to keep pace with the need for new antibacterial drugs. However, since 1968, only two new classes of antibacterials have been brought to market. While alternative treatments are available for MRSA, such as vancomycin, Cubicin (daptomycin), Zynox (linezolid) and Synercid (dalbapristin + quinupristin), they face one or more of the following limitations: limited potency, lack of a bactericidal, or bacteria-killing, mechanism of action, narrow spectrum of activity, the need for intravenous or injectable administration and adverse side effects.

### ***Achillion Approach: ACH-702***

We believe ACH-702 has the following benefits:

*Broad-Spectrum Potency.* ACH-702 has a novel target profile against bacterial DNA replication enzymes and potent broad-spectrum activity. We have established potent activity of ACH-702 against multi-drug-resistant bacteria in a laboratory evaluation of recent clinical isolates obtained from infected patients, as well as in preclinical models of infection. The spectrum of activity includes inhibition of the DNA replication enzymes: gyrase, topoisomerase IV and primase.

*Bactericidal Mechanism of Action.* ACH-702 has demonstrated bactericidal activity against multi-drug-resistant MRSA. A number of the other drugs currently used to treat MRSA infections are bacteriostatic, meaning they are able to prevent the growth of new bacteria, but have a limited effect on the bacteria existing at the time of treatment.

*Dosing.* We believe the properties of ACH-702 support potential administration through both intravenous and oral formulations. An orally administered drug would be more convenient for patients and may decrease health care costs by enabling patients to transition their treatment from the hospital to a home setting.

### ***Preclinical Development History***

In preclinical studies, ACH-702 has demonstrated potent antibacterial activity against a number of medically relevant bacteria, including drug-resistant strains such as MRSA and vancomycin-resistant enterococcus. The following table illustrates ACH-702 activity versus MRSA clinical strains, compared to other marketed antibacterial products. The standard measurement of antibacterial activity is minimum inhibitory concentration, or MIC, meaning the minimum amount of drug required to inhibit complete growth of bacteria (as measured in micrograms per mL, or µg/mL). The lower the MIC, the greater the potency of the compound. In this study, for example, ACH-702 demonstrated potent activity *in vitro* against three MRSA strains that are resistant to vancomycin and Zynox (linezolid), which are current standards of care.

Compound	MRSA	MIC (µg/mL)	MRSA
	(F-2121)	(F-2128)	(F-2137)
ACH-702	0.12	0.25	0.25
Vancomycin	8.00	>32.00	2.00
Linezolid	2.00	2.00	>16.00

In late-stage preclinical studies, ACH-702 demonstrated acceptable pharmacokinetic and safety profiles. Potent antibacterial activity has been demonstrated against both sensitive and drug-resistant strains in well-established preclinical infection models.



## **Table of Contents**

### **NS4A Antagonists for HCV Infection**

We identified through our internal drug discovery efforts a series of novel inhibitors which share a unique mechanism of action from other HCV inhibitors currently in development. These compounds function by targeting the NS4A protein of the hepatitis C virus, preventing formation of replicase complex, a necessary step in viral replication. In November 2004, we entered into a strategic alliance with Gilead Sciences for the discovery, development and commercialization of these compounds to treat chronic hepatitis C. These compounds include ACH-806 (also known as GS-9132), clinical development of which was discontinued in February 2007, as well as back-up compounds such as ACH-1095.

In February 2007, we announced that ACH-806 demonstrated positive antiviral activity in human patients infected with HCV, but also demonstrated early signs of elevated serum creatinine, a marker of kidney function. We continue to analyze data from this trial. As a result, however, we discontinued further clinical development of ACH-806 in favor of next-generation back-up compounds demonstrating the same mechanism of action. We, and Gilead Sciences, anticipate nominating one of these compounds for IND-enabling preclinical studies during the second quarter of 2007.

### ***Overview of HCV Market***

HCV is a virus which is a common cause of viral hepatitis, an inflammation of the liver. HCV infection is contracted by contact with the blood or other body fluids of an infected person. Hepatitis due to HCV can result in an acute process where a person is affected for only several months and then the virus is cleared from the body. However, the American Association of Liver Disease estimates that up to 85% of individuals become chronically infected following exposure. HCV disease progression then occurs over a period of 20 to 30 years during which patients are generally asymptomatic, meaning they exhibit no symptoms of the disease. Chronic hepatitis can lead to permanent liver damage, which can result in the development of liver cancer, liver failure or death.

The current standard of care for patients with chronic HCV infection is treatment with a combination of long-acting, pegylated forms of interferon alpha administered through weekly injections coupled with daily, oral doses of ribavirin. The duration of treatment for patients infected with non-genotype 1 virus is six months and results in undetectable viral load and normalization of liver function markers in up to 80% of patients receiving a full course of treatment. However, in individuals infected with the genotype 1 virus, the standard of care calls for 12 months of treatment and is successful in only approximately 50% of patients receiving a full course of treatment.

Treatment with pegylated interferon and ribavirin is further complicated by significant adverse side effects, including flu-like symptoms, anemia, depression, fatigue, suicidal tendencies and abnormal fetal development. Since chronic hepatitis C infection, with the exception of late-stage disease, is generally asymptomatic, the nature and extent of the treatment-related adverse side effects make patients feel sicker than they were prior to treatment. As a result of these treatment-related adverse side effects, nearly 40% of treated patients require dosage adjustments, and many of these patients may discontinue therapy altogether. In addition, current treatments are administered by injection, which is inconvenient and problematic for patients who are afraid of needles. Therefore, important goals for new HCV therapies are to:

improve efficacy against the genotype 1 virus;

offer a treatment response in patients who have failed an interferon and ribavirin based treatment;

reduce the magnitude of treatment-related adverse side effects; and

offer a more convenient, orally available, treatment option.

## **Table of Contents**

We believe the lessons learned from the treatment of HIV infection, specifically the improved antiviral response achieved through the use of combination therapies, are relevant for the treatment of HCV due to its rapid replication and high frequency of mutations. One common approach to the discovery of new therapies to treat chronic hepatitis C focuses on the inhibition of viral proteins essential to the completion of the HCV replication cycle. The two most common of these HCV drug targets are NS5B polymerase and NS3 protease. NS5B polymerase is essential for viral replication, as it is directly involved in creating new copies of the viral RNA genome. NS3 protease is essential for viral protein processing and completion of the viral lifecycle. All of the NS3 inhibitors of which we are aware work by binding to the protein's active site, thus preventing protein processing. Both NS5B and NS3 inhibitors have demonstrated in clinical trials significant viral load reduction in infected patients. Many experts believe that these drugs, if approved, will need to be used in combination with other drugs in order to improve upon the efficacy obtained with the current standard of care.

### ***Achillion Approach: NS4A Antagonists***

Compounds in our series of next-generation inhibitors that target NS4A are novel small molecule potent inhibitors of HCV replication which we identified through our internal research program. We believe these compounds have the following benefits:

*Novel Mechanism of Action.* Based upon extensive virology and biochemistry studies, we believe that the mechanism of action of our compounds is novel and involves targeting the NS4A protein of HCV, preventing the formation of a functional replicase complex, a necessary step in viral replication that occurs before copying the viral RNA genome, the step that polymerase inhibitors affect, but after viral protein processing, the step that protease inhibitors affect. Accordingly, we believe this unique mechanism may contribute to the lack of cross resistance between our compounds and other HCV inhibitors.

*Potency.* Data obtained in the standard laboratory assays used to determine anti-HCV activity against the genotype 1 virus demonstrate that our compounds have potency *in vitro* in a range similar to the published data on Boehringer Ingelheim's protease inhibitor under clinical development, and 14 to 21 times more potency *in vitro* than either the Schering-Plough or Vertex HCV protease inhibitors under clinical development.

*Lack of Cross Resistance.* In laboratory studies, our compounds have not demonstrated cross resistance to any of the polymerase inhibitors or protease inhibitors of which we are aware and have tested.

*Ease of Administration.* Based on current animal studies, we believe the compounds in this series could be administered orally.

*Potential for Combination Treatment.* Because of the lack of cross resistance in *in vitro* tests with all other known classes of HCV inhibitors, we believe that NS4A antagonists are well positioned for evaluation as a treatment for chronic hepatitis C in combination with the current standard of care and/or in combination with other direct acting antivirals.

### ***Clinical Development History***

In 2005, we initiated a single dose-escalating phase I clinical trial of ACH-806 in 20 subjects using a liquid formulation. There were no clinically significant findings in this trial, and we determined that this formulation is not suitable for further clinical trials or commercialization. We then evaluated the pharmacokinetics and safety of a tablet formulation of ACH-806 in a single dose-escalating phase I clinical trial in 20 subjects. We completed this trial in May 2006, and results revealed the drug was safe and well tolerated in healthy volunteers.

In 2006, we initiated a multiple dose proof-of-concept clinical trial in HCV-infected patients. A proof-of-concept trial is generally a late-stage phase I or early-stage phase II clinical trial, the objective of which

**Table of Contents**

is to demonstrate that the tested drug shows a beneficial effect (e.g., a reduction in viral RNA levels) in human subjects. In February 2007, we announced that while ACH-806 demonstrated positive antiviral effect, we and Gilead Sciences were discontinuing further development of this compound as elevations in serum creatinine, which is a marker of kidney function, limited further dose escalation.

Based on our experience in the HCV area, and as part of our collaboration with Gilead Sciences, we maintained an active back-up program. As a result of this backup program, we have developed a series of HCV inhibitors, including ACH-1095 and others, with the following characteristics:

*Chemical Structure.* The chemical structure of these compounds is distinct from ACH-806.

*Mechanism of Action.* These compounds inhibit HCV replication through the same mechanism of action as ACH-806.

*Potency.* These compounds display *in vitro* potency equal to or better than ACH-806.

*Ease of Administration.* Based on preclinical studies, we believe these compounds could be administered orally. With Gilead, we have refocused our development efforts on this next-generation of NS4A antagonists from which we plan to nominate a clinical candidate in mid 2007.

After completion of preclinical testing and submitting an IND application with the FDA, we expect to proceed to study these compounds in subjects and/or patients infected with HCV. As appropriate, based upon the clinical experience gained with ACH-806 and successor compounds, our collaborative partner, Gilead Sciences, may conduct phase II and/or phase III clinical trials and will assume financial and operational responsibility for this phase II and phase III development if it chooses to conduct such trials.

***Preclinical Development History***

In our preclinical studies, we demonstrated that our NS4A antagonists inhibit HCV replication in cell-based replicon assays that have developed resistance to other HCV protease and polymerase inhibitors.

In 2005 and 2006, we compared the potency of our NS4A antagonists, including ACH-806 and ACH-1095 as well as other compounds, with two other NS3 protease inhibitors currently in clinical development, VX-950, being developed by Vertex, and SCH-503034, being developed by Schering-Plough. Potencies of ACH-1095 (one of a series of next-generation compounds to ACH-806), VX-950 and SCH-503034 for inhibition of HCV replication are represented by the amount of inhibitor required (as measured in nanomoles, or nM) to inhibit 50% of HCV replication in *in vitro* laboratory tests. A lower nM number represents greater inhibition and potency. Our results demonstrated that, in laboratory testing, ACH-1095 is approximately 10-fold more potent than SCH-503034, and approximately 14-fold more potent than VX-950. The following table describes these results:

HCV Inhibitor	Potency (nM)
ACH-1095	21
VX-950	300
SCH-503034	200

In addition, this compound has demonstrated good oral bioavailability and a favorable safety profile in animals.

***Collaboration Operations***

Under the terms of the collaboration with Gilead Sciences, research activities are overseen by a joint research committee comprised of equal numbers of our representatives and representatives from Gilead Sciences.



## **Table of Contents**

According to a jointly-agreed upon research plan for ACH-806, our previous lead candidate, we were responsible for preclinical development, regulatory filing and clinical development through the completion of the proof-of-concept clinical trial. Gilead Sciences was responsible for manufacturing and formulation of compounds, later stage clinical development, regulatory filings and commercialization. We were also responsible for research activities associated with the identification of a back-up compound until such time as proof-of-concept was achieved with respect to one compound.

According to a jointly-agreed upon research plan for a successor clinical candidate we will perform certain early-stage preclinical activities and Gilead is responsible for performing later preclinical and clinical studies. We would continue to be responsible for back-up activities until such time as proof-of-concept is achieved, and Gilead would continue to be responsible for manufacturing, formulation and commercialization activities. Through December 31, 2006, the parties have expended an aggregate of \$22.3 million on research and development activities.

In connection with commercialization of any products under the collaboration, we have a one-time option to participate on a limited basis in the marketing effort in the United States.

## **Discovery Programs**

While pursuing the development of our lead programs in the HIV, HCV and antibacterial areas, we continue to engage in the preclinical development of earlier-stage drug candidates. Currently, our principal early-stage programs are the following:

### ***HIV Capsid Program***

We believe current HIV combination therapies will benefit from discovery and development of therapeutics that inhibit viral proteins not targeted by currently marketed drugs. One such protein is the capsid protein, an essential component for HIV replication. Capsid protein is required for maturation and production of HIV. We have identified small molecule inhibitors that prevent HIV replication through their interactions with the capsid protein. The cornerstone of our research is our exclusive access to the proprietary, three-dimensional structure of capsid protein, and to three-dimensional structures of inhibitors bound to the capsid protein. We have combined this information with our expertise in computational chemistry, medicinal chemistry and virology to design, synthesize and optimize inhibitors of HIV capsid protein. We have demonstrated that our inhibitors prevent HIV replication through interactions with the capsid protein. Our research efforts in this area are supported by an SBIR grant from the NIH.

### ***HCV Inhibitor Program***

Similar to the treatment paradigm in HIV, we believe combination therapy for the treatment of chronic HCV infection will benefit from drugs that inhibit HCV replication through complementary mechanisms of action. We have leveraged our experience in HCV drug discovery to identify inhibitors that are distinct from ACH-806 in their mechanism of action and thus are not subject to our collaboration and exclusive license agreement with Gilead Sciences. In preclinical studies, we have demonstrated that these inhibitors are efficacious in vitro against genotype 1 virus.

## **Drug Discovery and Development Capabilities**

We have successfully advanced two drug candidates into human clinical trials, with a third drug candidate in late-stage preclinical studies. We discovered two of these drug candidates, ACH-806 and ACH-702, by applying our deep understanding of virology, microbiology and synthetic chemistry. We intend to continue to capitalize on our internal drug discovery and development capabilities to expand our product candidate portfolio.

## **Table of Contents**

From early lead identification through clinical candidate selection, we have coupled our knowledge base in genomic replication targets with an integrated drug discovery infrastructure to aid in the rapid advancement of our discovery programs.

### ***Target Selection and Assay Development***

We are focused on addressing unmet medical needs in infectious diseases, with an emphasis on inhibiting viral and bacterial proteins essential for genomic replication. We select targets for our drug discovery programs based upon the relevance of the target to key steps within the viral or bacterial replication cycle, our ability to develop appropriate assays for early assessment of potency, selectivity and safety and confidence in our ability to identify small molecules that can be optimized within a reasonable time period to become drug candidates. We have developed proprietary assays for identification and optimization of small molecule inhibitors of viral and bacterial genomic replication.

### ***Compound Synthesis, Hit Identification and Lead Optimization***

Our focused compound library contains a diverse set of molecules that have been synthesized for the principal purpose of inhibiting genomic replication in viruses and bacteria. We have developed the following discovery tools that enable us to manage our compounds efficiently and advance our discovery programs:

AACP (Achillion Automated Chemistry Platform) is a proprietary software program that facilitates medium and high throughput synthesis of compounds. AACP allows us to synthesize thousands of small molecules in support of our drug discovery programs.

CART (Compound Acquisition and Repository Tracking) is a software tool that streamlines our scientists' ability to select and acquire compounds for lead identification. CART is integrated with computational chemistry tools and a virtual database of greater than two million small molecules.

CHEM-ACH is data mining software that allows compounds synthesized at Achillion to be cross-referenced against biological activities associated with them. Structure-activity relationships are elaborated with CHEM-ACH, greatly facilitating design and synthesis of compounds for lead optimization.

D2P2 (Drug Design Through Pharmacophore Perception) is a software application which allows our scientists to study interactions between a drug target and its inhibitors in three dimensions. D2P2 has facilitated lead optimization in our HCV program.

### ***Preclinical Candidate Selection***

A cornerstone of our approach to drug discovery and development is the early assessment of the drug-like properties associated with optimized lead compounds. Potency and activity against a given target are necessary but not sufficient predictors of eventual successful clinical development of a new drug. In order to perform an early assessment of the potential for successful development, prior to progression of a compound into late-stage preclinical studies in support of clinical trials, we aggressively evaluate compounds in numerous tests relating to safety, metabolism, pharmacokinetic properties and physical properties associated with the feasibility for an oral formulation.

### ***Our Scientists***

Our employees and advisors have significant preclinical and clinical development expertise. We have approximately 50 scientists engaged in drug discovery, preclinical drug development and clinical research and regulatory affairs. In the aggregate, members of our drug discovery, preclinical and clinical development team have contributed to the selection and development of more than 80 clinical candidates and 50 marketed products throughout their careers.

## **Table of Contents**

### **Competition**

Our industry is highly competitive and subject to rapid and significant technological change. All of the drugs we are developing, if approved, would compete against existing therapies. In addition, we believe a significant number of drug candidates are currently under development and may become available for the treatment of HIV infection, chronic hepatitis C and bacterial infections. The key competitive factors affecting the commercial success of these drugs are likely to be efficacy, safety profile, reliability, convenience of dosing, price and reimbursement.

Many of our potential competitors, including many of the organizations named below, either alone or with their collaborative partners, have substantially greater financial, technical and human resources than we do and significantly greater experience in the discovery and development of drug candidates, obtaining FDA and other regulatory approvals of products and the commercialization of those products. Accordingly, our competitors may be more successful than we may be in obtaining FDA approval for drugs and achieving widespread market acceptance. Our competitors' drugs may be more effective, have fewer negative side effects or be more effectively marketed and sold, than any drug we may commercialize and may render our drug candidates obsolete or non-competitive before we can recover the expenses of developing and commercializing any of our drug candidates. We anticipate that we will face intense and increasing competition as new drugs enter the market and advanced technologies become available. These organizations may also establish collaborative or licensing relationships with our competitors. Finally, the development of a cure or new treatment methods for the diseases we are targeting could render our drugs non-competitive or obsolete.

#### ***Elvucitabine, HIV***

Elvucitabine, if approved, would compete with the NRTIs currently marketed for treatment of HIV infection, including: Epivir (3TC), Retrovir (AZT), Ziagen (abacavir), Combivir (3TC + AZT), Trizivir (3TC + AZT + abacavir) and Epzicom (3TC + abacavir) from GlaxoSmithKline, Hivid (ddC) from Hoffman-La Roche, Emtriva (FTC), Viread (tenofovir) and Truvada (FTC + tenofovir) from Gilead Sciences and Videx EC, Videx (ddI) and Zerit (d4T) from Bristol-Myers Squibb. In addition, elvucitabine may compete with other NRTIs currently under development for HIV by companies such as Avexa, Medivir, Pharmasset and Koronis. Other classes of drugs are also under development for the treatment of HIV infection by companies such as Abbott, Boehringer Ingelheim, Johnson & Johnson, Merck, Panacos, Pfizer, Roche, Schering-Plough, and Trimeris.

#### ***ACH-702, Anti-MRSA Antibiotic***

ACH-702, if approved, would compete with drugs currently marketed for the treatment of serious gram-positive nosocomial infections including: vancomycin (multiple generic forms), Cubicin (daptomycin) by Cubist Pharmaceuticals, Zyvox (linezolid) by Pfizer and Synercid (dalbavancin + quinupristin) by King Pharmaceuticals. In addition, ACH-702 may compete with other drugs currently under development for the treatment of nosocomial gram-positive infections including: dalbavancin in development by Pfizer, telavancin from Theravance, oritavancin by Intermune, doripenem by Johnson & Johnson, ceftobiprole by Basilea and Johnson & Johnson, iclaprim by Arpida and garenoxacin by Schering-Plough. We may also compete with the following companies that have a strategic interest in the discovery, development and marketing of drugs for the treatment of bacterial infections: Abbott, Aventis, Bristol-Myers Squibb, Cubist, GlaxoSmithKline, Merck, Novartis, Replidyne, Roche and Wyeth.

#### ***NS4A Antagonists, HCV***

Our NS4A antagonists, if approved, would compete with drugs currently approved for the treatment of hepatitis C, the interferon-alpha based products from Roche (Pegasys and Roferon-A) or Schering-Plough (Intron-A or Peg-Intron) and the ribavirin based products from Schering-Plough (Rebetrol), Roche (Copegus) or generic versions sold by various companies. In addition, our NS4A antagonists may compete with the interferon

## **Table of Contents**

and ribavirin based drugs currently in development such as Valeant's ribavirin analog (Viramidine) and Human Genome Sciences' Albuferon. Other products are also under development for the treatment of hepatitis C by companies such as Abbott, Anadys, Arrow Pharmaceuticals, Boehringer Ingelheim, Bristol-Myers Squibb, Gilead Sciences, GlaxoSmithKline, Human Genome Sciences, Idenix Pharmaceuticals, Intarcia, Intermune, Johnson & Johnson, Medivir, Merck, Novartis, Panacos, Pfizer, Pharmasset, Roche, Schering-Plough, Trimeris, Valeant and Vertex.

## **Intellectual Property**

Our strategy is to pursue patents, developed internally and licensed from third parties, and other means to otherwise protect our technology, inventions and improvements that are commercially important to the development of our business. We also rely on trade secrets that may be important to the development of our business.

Our success will depend significantly on our ability to:

- obtain and maintain patent and other proprietary protection for the technology, inventions and improvements we consider important to our business;

- defend our patents;

- preserve the confidentiality of our trade secrets; and

- operate without infringing the patents and proprietary rights of third parties.

Our elvucitabine patent portfolio currently consists of seven issued U.S. patents, nine associated issued non-U.S. patents, 25 associated pending non-U.S. patent applications, one pending U.S. provisional application and one pending PCT application. We either own or hold exclusive worldwide sublicenses from Vion Pharmaceuticals of patents owned by Yale University or exclusive worldwide licenses from Emory University to these patents and patent applications. The issued patents and patent applications, if issued, will expire between 2013 and 2026. The issued U.S. patents contain claims directed to the compound, method of use and process for synthesis of elvucitabine, which claims expire in 2013, 2013 to 2014 and 2023, respectively. The issued foreign patents contain claims directed to the method of use of elvucitabine and expire in 2014.

Our hepatitis C patent portfolio currently consists of three U.S. provisional patent applications, nine pending U.S. non-provisional applications, two associated issued non-U.S. patents, 91 associated pending non-U.S. patent applications and three pending PCT applications. These patent applications, if issued, will expire between 2023 and 2026. The patent applications contain claims directed to compounds, method of use, process for synthesis, mechanism of action and research assays.

In connection with our November 2004 collaboration with Gilead Sciences, we granted a worldwide exclusive license to Gilead Sciences for past, present and future patents, patent applications and patent filings with claims directed to our first NS4A antagonists and chemically related compounds, any additional compounds which inhibit HCV via a mechanism similar to that of NS4A antagonism and intellectual property relating to the mechanism of action. Gilead Sciences has a right to present and discuss with us its capabilities to participate in the development and commercialization of new HCV compounds.

In addition, we have obtained non-exclusive licenses to HCV drug discovery patents and patent applications owned by Chiron, a Novartis business unit, Apath, L.L.C. and ReBlikon, GmbH.

Our antibacterial patent portfolio currently consists of six pending U.S. patent applications, two pending U.S. provisional patent application, 14 associated pending non-U.S. applications and five pending international patent applications filed under the Patent Cooperation Treaty. These patent applications, if issued, will expire between 2024 and 2026. The patent applications contain claims directed to compounds, method of use, process for synthesis and mechanism of action.



---

## **Table of Contents**

Our HIV capsid patent portfolio currently consists of two pending U.S. patent applications, one pending international patent application filed under the Patent Cooperation Treaty and eight associated non-U.S. patent filings. These patent applications, if issued, will expire between 2022 and 2026. We have obtained an exclusive worldwide license to these patent applications from the University of Maryland Baltimore County.

### **Collaborations and Licenses**

#### ***Gilead Sciences***

In November 2004, we entered into a research collaboration and license agreement with Gilead Sciences, Inc. pursuant to which we agreed to collaborate exclusively with Gilead Sciences throughout the world to develop and commercialize compounds for the treatment of chronic hepatitis which inhibit HCV replication through a novel mechanism of action targeting the NS4A protein of involving HCV, including ACH-806, our previous lead candidate, (also known as GS-9132) and successor compounds. Research and development activities prior to proof-of-concept will be overseen by a research committee comprised of equal numbers of our representatives and representatives from Gilead Sciences. The joint research committee shall assign research and development tasks, agree upon a budget for the research program, and share equally in the related costs. In addition, the parties may agree at any time to increase or decrease the research budget. Prior to proof-of-concept, any disputes within the joint research committee that cannot be resolved between designated executives of each party will be resolved by Gilead Sciences.

According to a jointly-agreed upon research plan for a successor clinical candidate to ACH-806, the joint research committee determined that we would perform certain early-stage preclinical activities while Gilead would perform later preclinical and clinical studies. We would continue to be responsible for back-up activities until such time as proof-of-concept is achieved, and Gilead would continue to be responsible for manufacturing, formulation and commercialization activities. Through December 31, 2006, the parties have expended an aggregate of \$22.3 million on research and development activities.

Gilead Sciences is otherwise responsible for all development and commercialization of compounds, including all regulatory filings and clinical trials after proof-of-concept. Gilead Sciences is responsible for the manufacturing of compounds throughout all stages of development and commercialization. Gilead Sciences has agreed under the agreement to use reasonably diligent efforts to develop and commercialize at least one compound in each of the United States, Japan, Germany, France, Italy, Spain and the United Kingdom. In connection with Gilead Sciences exclusive right to market and commercialize products, we have a one-time option to participate on a limited basis in the marketing effort in the United States. Pursuant to the terms of the collaboration agreement, Gilead Sciences must provide us with notice following commencement of a phase III clinical trial and prior to filing of an NDA. We must then notify Gilead Sciences whether we intend to designate field-based personnel to support their commercial activities within the United States. Following Gilead Sciences receipt of our notice, the parties must negotiate in good faith to determine the number of Achillion field-based personnel and the manner of their participation. These field-based personnel will operate under the supervision of Gilead Sciences and receive training at a similar level to equivalent Gilead Sciences field-based personnel. We bear the costs associated with the commercial participation of our field-based personnel; provided, however, that Gilead Sciences shall bear the expense of training. Our participation does not change the amount of any royalty payments Gilead Sciences is obligated to pay us on net sales of any drugs pursuant to our collaboration agreement. Under the agreement, Gilead Sciences is required to make royalty payments, if any, to us until the end of the royalty term, which is the earlier of (i) ten years following the date of the first commercial sale of a compound or (ii) the expiration of the last Achillion patent or patent owned jointly with Gilead Sciences.

We received \$10.0 million from Gilead Sciences upon the execution of the agreement, consisting of license fees and an equity investment, and could receive up to \$157.5 million in development, regulatory and sales milestone payments, assuming the successful simultaneous development of a lead and back-up compound, as well as royalties on net sales of products. Through March 31, 2007, we will share equally with Gilead Sciences all costs of the research program through proof-of-concept, subject to an agreed-upon cap. Effective April 1,

## **Table of Contents**

2007 and through proof-of-concept, we and Gilead amended our collaboration agreement such that each party's own internal costs, substantially full-time equivalent personnel costs, will be borne by each party and external research costs will continue to be shared equally by the parties. We expect that Achillion and Gilead will each contribute roughly one half of total personnel hours. After proof-of-concept, Gilead Sciences will assume all costs for development and commercialization of compounds, other than a portion of patent prosecution costs that we have agreed to pay.

The agreement will expire on the last to expire royalty term. In addition, Gilead Sciences may terminate the agreement for any reason by providing us with 120 days notice. Either party has the right to terminate for material breach, though we may terminate for Gilead Sciences breach only on a market-by-market basis and, if applicable, a product-by-product basis.

### ***Vion Pharmaceuticals/Yale University***

In February 2000, we entered into a license agreement with Vion Pharmaceuticals, pursuant to which we obtained a worldwide exclusive sublicense from Vion on the composition of matter and use of elvucitabine. Vion's license rights were granted to it by Yale, and Yale is a party with respect to certain provisions of this agreement. This license covers the use of elvucitabine alone, as a pharmaceutical composition containing elvucitabine alone, or its use as monotherapy to treat HIV. Yale has retained rights to utilize the intellectual property licensed by this agreement for its own noncommercial purposes. Pursuant to the agreement, we issued 6,250 shares of our common stock to each of Vion and Yale. In addition, pursuant to an amendment to the agreement entered into in January 2002, we granted options to purchase 7,500 shares of our common stock to each of Vion and Yale. Through December 31, 2006, we have made aggregate payments of \$35,000 to Yale under this agreement, including a \$10,000 initial license fee and a \$25,000 development milestone payment. Under the terms of the agreement, we may also be required to make additional milestone payments to Yale of up to an aggregate of \$850,000 for each licensed product based on the achievement of specified development and regulatory approval milestones. We are also required to pay Yale specified royalties on net product sales and a specified share of sublicensing fees that we receive under any sublicenses that we grant.

This agreement will remain in effect until the later of 15 years after the date of the agreement or the expiration of the last-to-expire licensed patent, which is currently scheduled to expire June 14, 2016, unless earlier terminated. We may terminate this agreement for convenience upon 30 days notice. The agreement may also be terminated by Vion upon 30 days notice of our uncured material breach of the agreement, including, among other things, nonpayment of any amounts owed under the agreement, our failure to provide reasonable assistance in connection with the enforcement of patents by Vion and Yale, upon 60 days notice of our uncured failure to meet specified development and marketing diligence requirements and upon notice of specified bankruptcy and insolvency events involving us. The agreement also provides that if the underlying license agreement between Vion and Yale terminates, our agreement with Vion will also terminate, provided that, if Yale terminates the underlying license agreement between Yale and Vion for cause, Yale has agreed to enter into a direct license with us on terms substantially similar to our agreement with Vion.

### ***Emory University***

In July 2002, we entered into a license agreement with Emory University, pursuant to which we obtained a worldwide exclusive license under specified licensed patents to use elvucitabine in combination with other antivirals. Under the license, Emory retains a right to use the intellectual property for educational and research purposes only and also retains the right to approve sublicensees under specified circumstances. Through December 31, 2006, we have made aggregate payments of \$150,000 to Emory under this agreement, including an initial license fee of \$100,000 and a development milestone payment of \$50,000. We may also be required to make additional payments of up to an aggregate of \$400,000 based on the achievement of specified development and regulatory approval milestones. Under this agreement, we are also required to pay Emory specified royalties on net product sales and a specified share of sublicensing fees that we receive under any sublicenses that we grant.

## **Table of Contents**

This agreement will remain in effect until the expiration of the last-to-expire licensed patent, which is currently scheduled to expire on January 27, 2015, unless earlier terminated. Each party has the right to terminate this agreement upon 60 days notice for an uncured material breach. Emory may terminate this agreement upon 60 days notice of specified bankruptcy and insolvency events involving us. We may terminate this agreement for convenience upon 60 days notice. Even after termination, we may continue selling licensed products for three months so long as royalties and all other monies owed are paid to Emory.

### ***University of Maryland Baltimore County***

In November 2002, we entered into a license agreement with the University of Maryland Baltimore County, or UMBC, under which we obtained an exclusive license from UMBC for drug discovery technology that is useful for screening and identifying compounds that bind to the HIV capsid protein. Through December 31, we have made aggregate payments of \$32,500 to UMBC under this agreement, including an initial license fee of \$7,500 and annual license payments totaling \$25,000. We did not achieve a specified development milestone prior to November 15, 2006, and therefore were required to make an additional annual license payment of \$10,000 for the contract year beginning November 15, 2005, which will continue for each future year until a specified development milestone is met or this agreement is terminated. We may also be required to make additional payments of up to an aggregate of \$650,000 based on the achievement of specified development and regulatory approval milestones. In addition, we are required to pay UMBC specified royalties on net product sales and a specified share of sublicensing fees that we receive under any sublicenses that we grant.

This agreement will remain in effect until the expiration of the last-to-expire licensed patent, unless earlier terminated. There are currently no issued patents under this agreement. Each party has the right to terminate the agreement upon 60 days notice for an uncured material breach, and we may terminate this agreement for convenience upon 60 days notice.

### **Manufacturing and Supply**

We currently rely on contract manufacturers to produce drug substances and drug products required for our clinical trials under current good manufacturing practices, with oversight by our internal managers. We plan to continue to rely upon contract manufacturers and collaboration partners to manufacture commercial quantities of our drug candidates if and when approved for marketing by the FDA. We currently rely on a single manufacturer for the preclinical or clinical supplies of each of our drug candidates and do not currently have relationships for redundant supply or a second source for any of our drug candidates. We believe that there are alternate sources of supply that can satisfy our clinical trial requirements without significant delay or material additional costs.

### **Sales and Marketing**

We intend to establish our own sales and marketing capabilities if and when we obtain regulatory approval of our drug candidates. In North America and Western Europe, patients in the markets for our drug candidates are largely managed by medical specialists in the areas of infectious diseases, hepatology and gastroenterology. Historically, companies have experienced substantial commercial success through the deployment of these specialized sales forces which can address a majority of key prescribers, particularly within the infectious disease marketplace. Therefore, we expect to utilize a specialized sales force in North America for the sales and marketing of drug candidates that we may successfully develop. We currently have no marketing, sales or distribution capabilities. In order to participate in the commercialization of any of our drugs, we must develop these capabilities on our own or in collaboration with third parties. We may also choose to hire a third party to provide sales personnel instead of developing our own staff. Pursuant to our collaboration agreement with Gilead Sciences, we have granted Gilead Sciences worldwide commercialization rights for our HCV compounds that operate by the mechanism of NS4A antagonism. However, we have the option to participate on a limited basis in marketing efforts in the United States.

## **Table of Contents**

Outside of North America, and in situations or markets where a more favorable return may be realized through licensing commercial rights to a third party, we may license a portion or all of our commercial rights in a territory to a third party in exchange for one or more of the following: up-front payments, research funding, development funding, milestone payments and royalties on drug sales.

### **Regulatory Matters**

#### ***Government Regulation and Product Approval***

Government authorities in the United States, at the federal, state and local level, and other countries extensively regulate, among other things, the research, development, testing, manufacture, labeling, record keeping, packaging, promotion, storage, advertising, distribution, marketing and export and import of products such as those we are developing. Our drugs must be approved by the FDA through the new drug application, or NDA, process before they may be legally marketed in the United States.

In the United States, drugs are subject to rigorous regulation by the FDA under the Federal Food, Drug and Cosmetic Act, or FDCA, and implementing regulations, as well as other federal and state statutes. The process of obtaining regulatory approvals and the subsequent compliance with appropriate federal, state, local, and foreign statutes and regulations require the expenditure of substantial time and financial resources. Failure to comply with the applicable United States requirements at any time during the product development process, approval process or after approval, may subject an applicant to administrative or judicial sanctions. These sanctions could include the FDA's refusal to approve pending applications, license suspension or revocation, withdrawal of an approval, a clinical hold, warning letters, product recalls, product seizures, total or partial suspension of production or distribution, injunctions, fines, civil penalties or criminal prosecution. Any agency or judicial enforcement action could have a material adverse effect on us. The process required by the FDA before a drug may be marketed in the United States generally involves the following:

completion of preclinical laboratory tests, animal studies and formulation studies according to FDA's Good Laboratory Practice regulations;

submission of an investigational new drug application, or IND, which must become effective before human clinical trials may begin and which must include approval by an institutional review board, or IRB, at each clinical site before the trials are initiated;

performance of adequate and well-controlled human clinical trials according to FDA's Good Clinical Practice regulations to establish the safety and efficacy of the proposed drug for its intended use;

submission to, and acceptance by, the FDA of an NDA;

satisfactory completion of an FDA inspection of the manufacturing facility or facilities at which the drug is produced to assess compliance with current good manufacturing practice, or cGMP, regulations to assure that the facilities, methods and controls are adequate to preserve the drug's identity, strength, quality and purity; and

FDA review and approval of the NDA.

#### ***United States Drug Development Process***

Once a pharmaceutical candidate is identified for development it enters the preclinical testing stage. Preclinical tests include laboratory evaluations of product chemistry, toxicity and formulation, as well as animal studies. Prior to beginning human clinical trials, an IND sponsor must submit an IND to the FDA. The IND sponsor must submit the results of the preclinical tests, together with manufacturing information and analytical data, to the FDA as part of the IND. Some preclinical or nonclinical testing may continue even after the IND is submitted. In addition to including the results of the preclinical studies, the IND will also include a protocol detailing, among other things, the objectives of the first phase of the clinical trial, the parameters to be used in



## **Table of Contents**

monitoring safety and the effectiveness criteria to be evaluated, if the first phase lends itself to an efficacy evaluation. The IND automatically becomes effective 30 days after receipt by the FDA, unless the FDA, within the 30-day time period, raises concerns or questions about the conduct of the trial. In such a case, the IND sponsor and the FDA must resolve any outstanding concerns before the clinical trial can begin. The FDA may, at any time, impose a clinical hold on ongoing clinical trials. If the FDA imposes a clinical hold, clinical trials cannot commence or recommence without FDA authorization and then only under terms authorized by the FDA.

Clinical trials involve the administration of the investigation new drug to healthy volunteers or patients under the supervision of one or more qualified investigators in accordance with Good Clinical Practice regulations. Clinical trials must be conducted under protocols detailing the objectives of the trial and the safety and effectiveness criteria to be evaluated. Each protocol must be submitted to the FDA as part of the IND. Further, an institutional review board, or IRB, at each institution participating in the clinical trial must review and approve each protocol before any clinical trial commences at that institution. All research subjects must provide informed consent, and informed consent information must be submitted to the IRB for approval prior to initiation of the trial. Progress reports detailing the results of the clinical trials must be submitted at least annually to the FDA and more frequently if adverse events or other certain types of other changes occur.

Human clinical trials are typically conducted in three sequential phases that may overlap or be combined:

*Phase I:* The drug is initially introduced into healthy human subjects or patients with the disease and tested for safety, dosage tolerance, absorption, metabolism, distribution and excretion. In the case of some products for severe or life-threatening diseases, especially when the product may be too inherently toxic to ethically administer to healthy volunteers, the initial human testing is often conducted in patients.

*Phase II:* Involves studies in a limited patient population to identify possible adverse effects and safety risks, to preliminarily evaluate the efficacy of the product for specific targeted diseases and to determine dosage tolerance and optimal dosage.

*Phase III:* Clinical trials are undertaken to further evaluate dosage, clinical efficacy and safety in an expanded patient population, typically at geographically dispersed clinical study sites. These studies are intended to establish the overall risk-benefit ratio of the product and provide, if appropriate, an adequate basis for product labeling.

Phase I, phase II, and phase III testing may not be completed successfully within any specified period, if at all. The FDA or an IRB or the sponsor may suspend a clinical trial at any time on various grounds, including a finding that the research subjects or patients are being exposed to an unacceptable health risk.

Concurrent with clinical trials, companies usually complete additional animal studies and must also develop additional information about the chemistry and physical characteristics of the drug and finalize a process for manufacturing the product in accordance with cGMP requirements. The manufacturing process must be capable of consistently producing quality batches of the drug candidate and, among other things, the manufacturer must develop methods for testing the identity, strength, quality and purity of the final drug. Additionally, appropriate packaging must be selected and tested and stability studies must be conducted to demonstrate that the drug candidate does not undergo unacceptable deterioration over its shelf life.

### ***United States Review and Approval Processes***

FDA approval of an NDA is required before marketing of the product may begin in the United States. The NDA must include the results of product development, preclinical studies and clinical studies, together with other detailed information, including information on the chemistry, manufacture and composition of the product. The FDA has 60 days from its receipt of the NDA to review the application to ensure that it is sufficiently complete for substantive review before accepting it for filing. The FDA may request additional information rather than

## **Table of Contents**

accept an NDA for filing. In this event, the NDA must be resubmitted with the additional information. The resubmitted application also is subject to review before the FDA accepts it for filing. Once the submission is accepted for filing, the FDA begins an in-depth substantive review. The submission of an NDA is also subject to the payment of user fees; a waiver of such fees may be obtained under certain limited circumstances. Further, the sponsor of an approved NDA is subject to annual product and establishment user fees. The approval process is lengthy and difficult and the FDA may refuse to approve an NDA if the applicable regulatory criteria are not satisfied or may require additional clinical or other data and information. Even if such data and information is submitted, the FDA may ultimately decide that the NDA does not satisfy the criteria for approval. The FDA may also refer applications for novel drug products or drug products which present difficult questions of safety or efficacy to an advisory committee, typically a panel that includes clinicians and other experts, for review, evaluation and a recommendation as to whether the application should be approved. The FDA is not bound by the recommendation of an advisory committee. The FDA reviews an NDA to determine, among other things, whether a product is safe and effective for its intended use. Before approving an NDA, the FDA will inspect the facility or facilities where the product is manufactured to determine whether its manufacturing is cGMP-compliant to assure and preserve the product's identity, strength, quality, purity and stability. Before approving an NDA, the FDA will inspect the facility or facilities where the product is manufactured.

NDAs receive either standard or priority review. A drug representing a potential significant improvement in treatment, prevention or diagnosis of disease may receive priority review. In addition, products studied for their safety and effectiveness in treating serious or life-threatening illnesses and that provide meaningful therapeutic benefit over existing treatments may receive accelerated approval and may be approved on the basis of adequate and well-controlled clinical trials establishing that the drug product has an effect on a surrogate endpoint that is reasonably likely to predict clinical benefit or on the basis of an effect on a clinical endpoint other than survival or irreversible morbidity. As a condition of approval, the FDA may require that a sponsor of a drug receiving accelerated approval perform adequate and well-controlled post-marketing clinical trials. Priority review and accelerated approval do not change the standards for approval, but may expedite the approval process.

If the FDA evaluation of the NDA and inspection of manufacturing facilities are favorable, the FDA may issue an approval letter or an approvable letter. An approvable letter generally contains a statement of specific conditions that must be met in order to secure final approval of the NDA. If and when those conditions have been met to the FDA's satisfaction, the FDA will typically issue an approval letter. An approval letter authorizes commercial marketing of the drug with specific prescribing information for a specific indication. As a condition of NDA approval, the FDA may require post approval testing, including phase IV trials, and surveillance to monitor the drug's safety or efficacy and may impose other conditions, including labeling or distribution restrictions which can materially impact the potential market and profitability of the drug. Once granted, product approvals may be withdrawn if compliance with regulatory standards is not maintained or problems are identified following initial marketing.

If the FDA's evaluation of the NDA submission or manufacturing facilities is not favorable, the FDA may refuse to approve the NDA or issue a not approvable letter. The not approvable letter outlines the deficiencies in the submission and often requires additional testing or information in order for the FDA to reconsider the application. Even after submitting this additional information, the FDA ultimately may decide that the application does not satisfy the regulatory criteria for approval. With limited exceptions, the FDA may withhold approval of a NDA regardless of prior advice it may have provided or commitments it may have made to the sponsor.

In addition, the Pediatric Research Equity Act of 2003, or PREA, codified as section 505B of the FDCA, provides the FDA with authority to require NDAs or NDA supplements for new active ingredients, new indications, new dosage forms, new dosing regimens, or new routes of administration to include pediatric assessments in all relevant pediatric populations. The FDA Modernization Act of 1997 included a pediatric exclusivity provision, codified as section 505A of the FDCA that was extended by the Best Pharmaceuticals for Children Act of 2002. Pediatric exclusivity is designed to provide a voluntary incentive to manufacturers to

## **Table of Contents**

conduct research about the safety of their products in children. Pediatric exclusivity, if granted, provides an additional six months of market exclusivity in the United States to any patent or non-patent market exclusivity in place for new or currently marketed drugs. Both provisions expire on October 1, 2007, and may not be reauthorized, or may be reauthorized with changes. Accordingly, we may be required, or requested, to conduct additional pediatric studies on any one or all of our drug candidates, and such additional pediatric studies may be time consuming and expensive.

### ***Post-Approval Requirements and Considerations***

Once an approval is granted, the FDA may withdraw the approval if compliance with regulatory standards is not maintained or if problems occur after the product reaches the market. After approval, some types of changes to the approved product, such as adding new indications, manufacturing changes and additional labeling claims, are subject to further FDA review and approval. In addition, the FDA may require testing and surveillance programs to monitor the effect of approved products that have been commercialized, and in some circumstances the FDA has the power to prevent or limit further marketing of a product based on the results of these post-marketing programs.

Any drug products manufactured or distributed by us pursuant to FDA approvals are subject to continuing regulation by the FDA, including, among other things, record-keeping requirements, reporting of adverse experiences with the drug, providing the FDA with updated safety and efficacy information, drug sampling and distribution requirements, notifying the FDA and gaining its approval of certain manufacturing or labeling changes, and complying with certain electronic records and signature requirements. Certain changes to the product, its labeling or its manufacturing require prior FDA approval and may require the conduct of further clinical investigations to support the change. Such approvals may be expensive and time-consuming and, if not approved, the product will not be allowed to be marketed as modified. FDA also regulates the promotional claims that are made about prescription drug products. In particular, a drug or biologic may not be promoted for uses that are not approved by the FDA as reflected in the product's approved labeling. In addition, the FDA requires clinical substantiation of any claims of superiority of one product over another, including that such claims be proven by adequate and well-controlled head-to-head clinical trials. For anti-infective drugs, *in vitro* superiority taken alone is generally not sufficient to permit promotional claims of product superiority. To the extent that market acceptance of our products may depend on their superiority over existing therapies, any restriction on our ability to advertise or otherwise promote claims of superiority, or requirements to conduct additional expensive clinical trials to provide proof of such claims, could negatively affect the sales of our products or our costs. Drug manufacturers and their subcontractors are required to register their establishments with the FDA and certain state agencies, and are subject to periodic unannounced inspections by the FDA and certain state agencies for compliance with cGMP regulations and other laws.

We rely, and expect to continue to rely, on third parties for the production of clinical and commercial quantities of our products. Future FDA and state inspections may identify compliance issues at the facilities of our contract manufacturers that may disrupt production or distribution, or require substantial resources to correct.

Once a new drug application is approved, the product covered thereby becomes a listed drug that can, in turn, be cited by potential generic competitors in support of approval of an abbreviated new drug application, or ANDA. An approved ANDA provides for marketing of a drug product that has the same active ingredients in the same strength, dosage form, and route of administration as the listed drug and has been shown through bioequivalence testing to be therapeutically equivalent to the listed drug. There is generally no requirement, other than the requirement for bioequivalence testing, for an ANDA applicant to conduct or submit results of non-clinical or clinical tests to prove the safety or effectiveness of its drug product. Drugs approved in this way are commonly referred to as generic equivalents to the listed drug, are listed as such by the FDA, and can often be substituted by pharmacists under prescriptions written for the original listed drug.



---

## **Table of Contents**

From time to time, legislation is drafted, introduced and passed in Congress that could significantly change the statutory provisions governing the approval, manufacturing and marketing of products regulated by the FDA. In addition, FDA regulations and guidance are often revised or reinterpreted by the agency in ways that may significantly affect our business and our products. It is impossible to predict whether legislative changes will be enacted, or FDA regulations, guidance or interpretations changed or what the impact of such changes, if any, may be.

### ***Foreign Regulation***

In addition to regulations in the United States, we will be subject to a variety of foreign regulations governing clinical trials and commercial sales and distribution of our products. Whether or not we obtain FDA approval for a product, we must obtain approval of a product by the comparable regulatory authorities of foreign countries before we can commence clinical trials or marketing of the product in those countries. The approval process varies from country to country and the time may be longer or shorter than that required for FDA approval. The requirements governing the conduct of clinical trials, product licensing, pricing and reimbursement vary greatly from country to country.

Under European Union regulatory systems, we may submit marketing authorization applications either under a centralized or decentralized procedure. The centralized procedure, which is compulsory for medicines produced by certain biotechnological processes and optional for those which are highly innovative, provides for the grant of a single marketing authorization that is valid for all European Union member states. For drugs without approval in any Member State, the decentralized procedure provides for a member state, known as the reference member state, to assess an application, with one or more other, or concerned, member states subsequently approving that assessment. Under this procedure, an applicant submits an application, or dossier, and related materials, including a draft summary of product characteristics, draft labeling and package leaflet, to the reference member state and concerned member states. The reference member state prepares a draft assessment and drafts of the related materials within 120 days after receipt of a valid application. Within 90 days of receiving the reference member state's assessment report, each concerned member state must decide whether to approve the assessment report and related materials. If a member state cannot approve the assessment report and related materials on the grounds of potential serious risk to public health, the disputed points may eventually be referred to the European Commission, whose decision is binding on all member states.

### ***Reimbursement***

Sales of pharmaceutical products depend in significant part on the availability of third-party reimbursement. It is time consuming and expensive to seek reimbursement from third-party payors. Reimbursement may not be available or sufficient to allow us to sell our products on a competitive and profitable basis.

The passage of the Medicare Prescription Drug and Modernization Act of 2003, or the MMA, imposes new requirements for the distribution and pricing of prescription drugs for Medicare beneficiaries, which may affect the marketing of our products. The MMA also introduced a new reimbursement methodology, part of which went into effect in 2004, and a new prescription drug plan, which went into effect on January 1, 2006. At this point, it is not clear what long-term effect the MMA will have on the prices paid for currently approved drugs and the pricing options for new drugs. While the MMA applies only to drug benefits for Medicare beneficiaries, private payors often follow Medicare coverage policy and payment limitations in setting their own payment rates. Any reduction in payment that results from the MMA may result in a similar reduction in payments from non-governmental payors.

In addition, in some foreign countries, the proposed pricing for a drug must be approved before it may be lawfully marketed. The requirements governing drug pricing vary widely from country to country. For example, the European Union provides options for its member states to restrict the range of medicinal products for which their national health insurance systems provide reimbursement and to control the prices of medicinal products for

**Table of Contents**

human use. A member state may approve a specific price for the medicinal product or it may instead adopt a system of direct or indirect controls on the profitability of the company placing the medicinal product on the market.

There have been and we expect that there will continue to be frequent federal and state proposals to impose governmental pricing controls or cost containment measures for prescription drugs. While we cannot predict whether such legislative or regulatory proposals will be adopted, the adoption of such proposals could have a material adverse effect on our business, financial condition and profitability.

**Employees**

As of March 1, 2007, we had 66 employees, 26 of whom hold doctoral degrees. Approximately 50 of our employees are engaged in research and development, with the remainder engaged in administration, finance and business development functions. We believe our relations with our employees are good.

**Executive Officers of the Registrant**

<b>Name</b>	<b>Age</b>	<b>Position</b>
Michael D. Kishbauch	57	President and Chief Executive Officer
Milind S. Deshpande, Ph.D.	50	Senior Vice President and Chief Scientific Officer
John C. Pottage, Jr., M.D.	54	Senior Vice President and Chief Medical Officer
Mary Kay Fenton	43	Vice President and Chief Financial Officer
Gautam Shah, Ph.D.	50	Senior Vice President and Chief Compliance Officer

*Michael D. Kishbauch, President and Chief Executive Officer.* Prior to joining Achillion in July 2004 as our President and Chief Executive Officer, Mr. Kishbauch founded and served as President and Chief Executive Officer from September 2000 to July 2004 of OraPharma, Inc., a publicly traded, commercial-stage pharmaceutical company focused on oral health care, which was acquired by Johnson & Johnson in 2003. Prior to OraPharma, Inc., Mr. Kishbauch held senior management positions with MedImmune, Inc. Mr. Kishbauch is a director of ARIAD Pharmaceuticals, Inc. Mr. Kishbauch holds an M.B.A. from the Wharton School of the University of Pennsylvania and a B.A. in biology from Wesleyan University.

*Milind S. Deshpande, Ph.D., Senior Vice President and Chief Scientific Officer.* Dr. Deshpande joined Achillion in September 2001 as Vice President of Chemistry, was named head of drug discovery in April 2002, Senior Vice President of Drug Discovery in December 2002 and Senior Vice President and Chief Scientific Officer in December 2004. Prior to joining Achillion, Dr. Deshpande was Associate Director of Lead Discovery and Early Discovery Chemistry at the Pharmaceutical Research Institute at Bristol-Myers Squibb from 1991 to 2001, where he managed the identification of new clinical candidates to treat infectious and neurological diseases. From 1988 to 1991, he held a faculty position at Boston University Medical School. Dr. Deshpande received his Ph.D. in Organic Chemistry from Ohio University, following his undergraduate education in India.

*John C. Pottage, Jr., M.D., Senior Vice President and Chief Medical Officer.* Dr. Pottage joined Achillion in May 2002. Prior to Achillion, Dr. Pottage was Medical Director of Antivirals at Vertex Pharmaceuticals. During this time he also served as an associate attending physician at the Tufts New England Medical Center in Boston. From 1984 to 1998, Dr. Pottage was a faculty member at Rush Medical College in Chicago, where he held the position of Associate Professor, and also served as the Medical Director of the Outpatient HIV Clinic at Rush-Presbyterian-St. Luke's Medical Center. Dr. Pottage is a graduate of St. Louis University School of Medicine and Colgate University.

*Mary Kay Fenton, Vice President and Chief Financial Officer.* Ms. Fenton, a certified public accountant, has led Achillion's financial function since October 2000. From 1991 to 2000, Ms. Fenton held various positions

**Table of Contents**

within the Technology Industry Group at PricewaterhouseCoopers LLP, most recently as Senior Manager responsible for the life sciences practice in Connecticut. Prior to 1991, Ms. Fenton was an economic development associate in the nonprofit sector. Ms. Fenton holds an M.B.A. in Finance from the Graduate School of Business at the University of Connecticut and an A.B. in Economics from the College of the Holy Cross.

*Gautam Shah, Ph.D., Senior Vice President and Chief Compliance Officer.* Dr. Shah joined Achillion in May 2004 as Vice President of Regulatory Affairs and was named Senior Vice President and Chief Compliance Officer in September 2006. Prior to joining Achillion, he was Senior Director of Regulatory Affairs with Sepracor from February 2003 to May 2004. Prior to Sepracor, Dr. Shah was in the Regulatory Affairs Group of Bayer Health Care. Before Bayer, he held positions of increasing responsibilities at Pfizer Inc. in the area of Product and Process Development. Dr. Shah holds a doctoral degree in Pharmaceutics from the University of Illinois, as well as a Master's degree in Medicinal Chemistry and a Bachelor's degree in Pharmacy.

## **Table of Contents**

### **ITEM 1A. RISK FACTORS**

#### **Risks Related to Our Business**

**We have a limited operating history and have incurred a cumulative loss since inception. If we do not generate significant revenues, we will not be profitable.**

We have incurred significant losses since our inception in August 1998. At December 31, 2006, our accumulated deficit was approximately \$124 million. We have not generated any revenue from the sale of drug candidates to date. We expect that our annual operating losses will increase substantially over the next several years as we expand our research, development and commercialization efforts, including:

completing the phase II clinical trials for elvucitabine and, if supported by favorable data from the phase II clinical trials, moving into pivotal phase III clinical trials;

advancing our NS4A antagonist program through clinical candidate nomination, preclinical testing and completion of proof-of-concept;

advancing ACH-702 through preclinical testing, submitting an IND application to the FDA and beginning a phase I clinical trial; and

continuing to advance our other research and discovery programs in HIV and HCV, and identifying other infectious disease drug candidates.

To become profitable, we must successfully develop and obtain regulatory approval for our drug candidates and effectively manufacture, market and sell any drug candidates we develop. Accordingly, we may never generate significant revenues and, even if we do generate significant revenues, we may never achieve profitability.

**We will need substantial additional capital to fund our operations, including drug candidate development, manufacturing and commercialization. If we do not have or cannot raise additional capital when needed, we will be unable to develop and commercialize our drug candidates successfully, and our ability to operate as a going concern may be adversely affected.**

We believe that our existing cash and cash equivalents will be sufficient to support our current operating plan through at least the next twelve months. However, our operating plan may change as a result of many factors, including:

the costs involved in the preclinical and clinical development and manufacturing of elvucitabine, and ACH-702;

the costs involved in the preclinical development of an HCV candidate, half of which we share with Gilead;

the costs involved in obtaining regulatory approvals for our drug candidates;

the scope, prioritization and number of programs we pursue;

the costs involved in preparing, filing, prosecuting, maintaining, enforcing and defending patent and other intellectual property claims;

the costs associated with manufacturing our drug candidates;

our ability to enter into corporate collaborations and the terms and success of these collaborations;

our acquisition and development of new technologies and drug candidates; and

competing technological and market developments currently unknown to us.

## **Table of Contents**

If our operating plan changes, we may need additional funds sooner than planned. Such additional financing may not be available when we need it or may not be available on terms that are favorable to us. In addition, we may seek additional capital due to favorable market conditions or strategic considerations, even if we believe we have sufficient funds for our current or future operating plans. If adequate funds are not available to us on a timely basis, or at all, we may be required to:

terminate or delay preclinical studies, clinical trials or other development activities for one or more of our drug candidates; or

delay our establishment of sales and marketing capabilities or other activities that may be necessary to commercialize our drug candidates, if approved for sale.

We may seek additional financing through a combination of private and public equity offerings, debt financings and collaboration, strategic alliance and licensing arrangements. To the extent that we raise additional capital through the sale of equity or convertible debt securities, your ownership interest will be diluted, and the terms may include adverse liquidation or other preferences that adversely affect your rights as a stockholder. Debt financing, if available, may involve agreements that include covenants limiting or restricting our ability to take specific actions such as incurring additional debt, making capital expenditures or declaring dividends. If we raise additional funds through collaboration, strategic alliance and licensing arrangements with third parties, we may have to relinquish valuable rights to our technologies or drug candidates, or grant licenses on terms that are not favorable to us.

**We depend heavily on the success of our most advanced drug candidate, elvucitabine, for the treatment of HIV infection, which is still under development.**

We have invested a significant portion of our efforts and financial resources in the development of our most advanced drug candidate, elvucitabine, for the treatment of HIV infection. Our ability to generate revenues will depend heavily on the successful development and commercialization of this drug candidate. The commercial success of elvucitabine will depend on several factors, including the following:

our ability to provide acceptable evidence of its safety and efficacy in current and future clinical trials;

receipt of marketing approvals from the FDA and similar foreign regulatory authorities;

establishing commercial manufacturing arrangements with third-party manufacturers;

launching commercial sales of the drug, whether alone or in collaboration with others; and

acceptance of the drug in the medical community and with third-party payors.

We are currently studying elvucitabine in two phase II clinical trials. One or both of these clinical trials may not be successful, and the results of our phase II clinical trials, even if positive, may not be necessarily indicative of the results we will obtain in our planned phase III or other subsequent clinical trials that may be required for regulatory approval of this drug candidate. If we are not successful in commercializing elvucitabine, or are significantly delayed in doing so, our business will be materially harmed.

**Our market is subject to intense competition. If we are unable to compete effectively, our drug candidates may be rendered noncompetitive or obsolete.**

We are engaged in segments of the pharmaceutical industry that are highly competitive and rapidly changing. Many large pharmaceutical and biotechnology companies, academic institutions, governmental agencies and other public and private research organizations are pursuing the development of novel drugs that target infectious diseases. We face, and expect to continue to face, intense and increasing competition as new products enter the market and advanced technologies become available. In addition to currently approved drugs, there are a significant number

of drugs that are currently under development and may become available in the

## **Table of Contents**

future for the treatment of HIV infection, chronic hepatitis C and serious hospital-based bacterial infections. We would expect elvucitabine, ACH-702 and our next HCV candidate to compete with the following approved drugs and drug candidates currently under development:

*Elvucitabine.* If approved, we would expect elvucitabine to compete with currently approved drugs for the treatment of HIV infection, including Epivir (3TC), Retrovir (AZT) and Ziagen (abacavir), marketed by GlaxoSmithKline, Emtriva (FTC) and Viread (tenofovir), marketed by Gilead Sciences, and Zerit (d4T) and Videx (ddI), marketed by Bristol-Myers Squibb. Elvucitabine may also compete with NRTI drug candidates currently in clinical development by other companies such as Avexa, Medivir, Pharmasset and Koronis, as well as other classes of drugs currently in clinical development by companies such as Abbott, Boehringer Ingelheim, Johnson & Johnson, Merck, Panacos, Pfizer, Roche, Schering-Plough, Trimeris and Vertex.

*ACH-702.* If approved, we would expect ACH-702 to compete with currently approved drugs for the treatment of bacterial infections, including Cubicin (daptomycin), marketed by Cubist Pharmaceuticals, Zynox (linezolid), marketed by Pfizer, and Synercid (dalbopristin + quinupristin), marketed by King Pharmaceuticals. ACH-702 may also compete with drug candidates currently in clinical development by other companies such as Intermune, Theravance, Basilea and Johnson & Johnson.

*NS4A Antagonist.* If approved, we would expect our next NS4A antagonist to compete with currently approved drugs for the treatment of chronic hepatitis C, including Pegasys and Roferon-A, marketed by Roche, and Intron-A and Peg-Intron, marketed by Schering-Plough. Our HCV compounds may also compete with drug candidates currently in clinical development by other companies such as Abbott, Anadys, Arrow Pharmaceuticals, Boehringer Ingelheim, Bristol-Myers Squibb, Gilead Sciences, GlaxoSmithKline, Human Genome Sciences, Idenix Pharmaceuticals, Intermune, Johnson & Johnson, Medivir, Merck, Novartis, Panacos, Pfizer, Pharmasset, Roche, Schering-Plough, Trimeris, Valeant and Vertex.

Many of our competitors have:

significantly greater financial, technical and human resources than we have and may be better equipped to discover, develop, manufacture and commercialize drug candidates;

more extensive experience in preclinical testing and clinical trials, obtaining regulatory approvals and manufacturing and marketing pharmaceutical products;

drug candidates that have been approved or are in late-stage clinical development; and/or

collaborative arrangements in our target markets with leading companies and research institutions.

Competitive products may render our products obsolete or noncompetitive before we can recover the expenses of developing and commercializing our drug candidates. Furthermore, the development of new treatment methods and/or the widespread adoption or increased utilization of any vaccine for the diseases we are targeting could render our drug candidates noncompetitive, obsolete or uneconomical. If we successfully develop and obtain approval for our drug candidates, we will face competition based on the safety and effectiveness of our drug candidates, the timing of their entry into the market in relation to competitive products in development, the availability and cost of supply, marketing and sales capabilities, reimbursement coverage, price, patent position and other factors. If we successfully develop drug candidates but those drug candidates do not achieve and maintain market acceptance, our business will not be successful.

**If we are not able to attract and retain key management and scientific personnel and advisors, we may not successfully develop our drug candidates or achieve our other business objectives.**

We depend upon our senior management and scientific staff for our business success. Key members of our senior team include Michael Kishbauch, our president and chief executive officer, Dr. Milind Deshpande, our





## **Table of Contents**

senior vice president and chief scientific officer, and Dr. John Pottage, our senior vice president and chief medical officer. Many of our employment agreements with our senior management employees are terminable without notice by the employee. The loss of the service of any of the key members of our senior management may significantly delay or prevent the achievement of drug development and other business objectives. Our ability to attract and retain qualified personnel, consultants and advisors is critical to our success. We face intense competition for qualified individuals from numerous pharmaceutical and biotechnology companies, universities, governmental entities and other research institutions. We may be unable to attract and retain these individuals, and our failure to do so would adversely affect our business.

**Our business has a substantial risk of product liability claims. If we are unable to obtain appropriate levels of insurance, a product liability claim could adversely affect our business.**

Our business exposes us to significant potential product liability risks that are inherent in the development, manufacturing and sales and marketing of human therapeutic products. Although we do not currently commercialize any products, claims could be made against us based on the use of our drug candidates in clinical trials. Product liability claims could delay or prevent completion of our clinical development programs. We currently have clinical trial insurance in an amount equal to up to \$9.0 million in the aggregate and will seek to obtain product liability insurance prior to the sales and marketing of any of our drug candidates. However, our insurance may not provide adequate coverage against potential liabilities. Furthermore, clinical trial and product liability insurance is becoming increasingly expensive. As a result, we may be unable to maintain current amounts of insurance coverage or obtain additional or sufficient insurance at a reasonable cost to protect against losses that could have a material adverse effect on us. If a claim is brought against us, we might be required to pay legal and other expenses to defend the claim, as well as uncovered damages awards resulting from a claim brought successfully against us. Furthermore, whether or not we are ultimately successful in defending any such claims, we might be required to direct significant financial and managerial resources to such defense, and adverse publicity is likely to result.

### **Risks Related to the Development of Our Drug Candidates**

**All of our drug candidates are still in the early stages of development and remain subject to clinical testing and regulatory approval. If we are unable to successfully develop and test our drug candidates, we will not be successful.**

To date, we have not commercially marketed, distributed or sold any drug candidates. The success of our business depends primarily upon our ability to develop and commercialize our drug candidates successfully. Our most advanced drug candidate is elvucitabine, which is currently in phase II clinical trials. Our other drug candidates are in various stages of preclinical development. Our drug candidates must satisfy rigorous standards of safety and efficacy before they can be approved for sale. To satisfy these standards, we must engage in expensive and lengthy testing and obtain regulatory approval of our drug candidates. Despite our efforts, our drug candidates may not:

offer therapeutic or other improvement over existing, comparable drugs;

be proven safe and effective in clinical trials;

have the desired effects or may include undesirable effects or the drug candidates may have other unexpected characteristics;

meet applicable regulatory standards;

be capable of being produced in commercial quantities at acceptable costs; or

be successfully commercialized.

## **Table of Contents**

In addition, we may experience numerous unforeseen events during, or as a result of, preclinical testing and the clinical trial process that could delay or prevent our ability to receive regulatory approval or commercialize our drug candidates, including:

regulators or IRBs may not authorize us to commence a clinical trial or conduct a clinical trial at a prospective trial site;

our pre-clinical tests or clinical trials may produce negative or inconclusive results, and we may decide, or regulators may require us, to conduct additional pre-clinical testing or clinical trials, or we may abandon projects that we expect to be promising;

enrollment in our clinical trials may be slower than we currently anticipate or participants may drop out of our clinical trials at a higher rate than we currently anticipate, resulting in significant delays;

our third party contractors may fail to comply with regulatory requirements or meet their contractual obligations to us in a timely manner;

we might have to suspend or terminate our clinical trials if the participants are being exposed to unacceptable health risks;

IRBs or regulators, including the FDA, may require that we hold, suspend or terminate clinical research for various reasons, including noncompliance with regulatory requirements; and

the supply or quality of our drug candidates or other materials necessary to conduct our clinical trials may be insufficient or inadequate.

In February 2007, we announced that we were discontinuing further clinical development of ACH-806 (also known as GS-9132) which was determined to have positive antiviral effect in a proof-of-concept clinical trial in HCV infected patients, but also to elevate serum creatinine levels, a marker of kidney function. A number of companies in the pharmaceutical and biotechnology industries have suffered significant setbacks in late-stage clinical trials even after achieving promising results in early-stage development. Accordingly, the results from the completed preclinical studies and clinical trials and ongoing clinical trials for elvucitabine, ACH-702 and our other drug candidates may not be predictive of the results we may obtain in later stage trials. We do not expect any of our drug candidates to be commercially available for at least several years.

### **If we are unable to obtain U.S. and/or foreign regulatory approval, we will be unable to commercialize our drug candidates.**

Our drug candidates are subject to extensive governmental regulations relating to among other things, research, testing, development, manufacturing, safety, efficacy, record keeping, labeling, marketing and distribution of drugs. Rigorous preclinical testing and clinical trials and an extensive regulatory approval process are required in the United States and in many foreign jurisdictions prior to the commercial sale of our drug candidates. Satisfaction of these and other regulatory requirements is costly, time consuming, uncertain and subject to unanticipated delays. It is possible that none of the drug candidates we are developing will obtain marketing approval. In connection with the clinical trials for elvucitabine, ACH-702 and any other drug candidate we may seek to develop in the future, we face risks that:

the drug candidate may not prove to be efficacious;

the drug may not prove to be safe;

## Edgar Filing: ACHILLION PHARMACEUTICALS INC - Form 10-K

the results may not confirm the positive results from earlier preclinical studies or clinical trials; and

the results may not meet the level of statistical significance required by the FDA or other regulatory agencies.

We have limited experience in conducting and managing the clinical trials necessary to obtain regulatory approvals, including approval by the FDA. The time required to complete clinical trials and for FDA and other

## **Table of Contents**

countries regulatory review processes is uncertain and typically takes many years. Our analysis of data obtained from preclinical and clinical activities is subject to confirmation and interpretation by regulatory authorities, which could delay, limit or prevent regulatory approval. We may also encounter unanticipated delays or increased costs due to government regulation from future legislation or administrative action or changes in FDA policy during the period of product development, clinical trials and FDA regulatory review.

Any delay in obtaining or failure to obtain required approvals could materially adversely affect our ability to generate revenues from the particular drug candidate. Furthermore, any regulatory approval to market a product may be subject to limitations on the indicated uses for which we may market the product and affect reimbursement by third-party payors. These limitations may limit the size of the market for the product. We are also subject to numerous foreign regulatory requirements governing the conduct of clinical trials, manufacturing and marketing authorization, pricing and third-party reimbursement. The foreign regulatory approval process includes all of the risks associated with FDA approval described above as well as risks attributable to the satisfaction of foreign regulations. Approval by the FDA does not ensure approval by regulatory authorities outside the United States. Foreign jurisdictions may have different approval procedures than those required by the FDA and may impose additional testing requirements for our drug candidates.

**If clinical trials for our drug candidates are prolonged or delayed, we may be unable to commercialize our drug candidates on a timely basis, which would require us to incur additional costs and delay our receipt of any product revenue.**

We cannot predict whether we will encounter problems with any of our completed, ongoing or planned clinical trials that will cause us or regulatory authorities to delay, suspend or terminate clinical trials, or delay the analysis of data from our completed or ongoing clinical trials. Any of the following could delay the clinical development of our drug candidates:

ongoing discussions with the FDA or comparable foreign authorities regarding the scope or design of our clinical trials;

delays in receiving, or the inability to obtain, required approvals from institutional review boards or other reviewing entities at clinical sites selected for participation in our clinical trials;

delays in enrolling volunteers and patients into clinical trials;

a lower than anticipated retention rate of volunteers and patients in clinical trials;

the need to repeat clinical trials as a result of inconclusive or negative results or unforeseen complications in testing;

inadequate supply or deficient quality of drug candidate materials or other materials necessary to conduct our clinical trials;

unfavorable FDA inspection and review of a clinical trial site or records of any clinical or preclinical investigation;

serious and unexpected drug-related side effects experienced by participants in our clinical trials; or

the placement by the FDA of a clinical hold on a trial.

Our ability to enroll patients in our clinical trials in sufficient numbers and on a timely basis will be subject to a number of factors, including the size of the patient population, the nature of the protocol, the proximity of patients to clinical sites, the availability of effective treatments for the relevant disease and the eligibility criteria for the clinical trial. Delays in patient enrollment may result in increased costs and longer development times. For example, we are experiencing and may continue to experience delays in patient enrollment in connection with our phase II trial of elvucitabine in HIV infected patients who have failed a HAART regimen which included Efavir (3TC) due to the strict entry criteria

for this trial. As a result, we expanded the number of sites at

## **Table of Contents**

which the trial will be conducted and changed the protocol of the trial to include additional treatment with elvucitabine after the initial 14 days of treatment. We cannot assure you that these actions will prevent further delays in patient enrollment in connection with this trial. In addition, subjects may drop out of our clinical trials, and thereby impair the validity or statistical significance of the trials.

We, the FDA or other applicable regulatory authorities or IRBs may suspend clinical trials of a drug candidate at any time if we or they believe the subjects or patients participating in such clinical trials are being exposed to unacceptable health risks or for other reasons.

We cannot predict whether any of our drug candidates will encounter problems during clinical trials which will cause us or regulatory authorities to delay or suspend these trials, or which will delay the analysis of data from these trials. In addition, it is impossible to predict whether legislative changes will be enacted, or whether FDA regulations, guidance or interpretations will be changed, or what the impact of such changes, if any, may be. If we experience any such problems, we may not have the financial resources to continue development of the drug candidate that is affected or the development of any of our other drug candidates.

In addition, we, along with our collaborators or subcontractors, may not employ, in any capacity, persons who have been debarred under the FDA's Application Integrity Policy. Employment of such a debarred person (even if inadvertently) may result in delays in FDA's review or approval of our products, or the rejection of data developed with the involvement of such persons.

**Even if we obtain regulatory approvals, our drug candidates will be subject to ongoing regulatory review. If we fail to comply with continuing U.S. and applicable foreign regulations, we could lose those approvals, and our business would be seriously harmed.**

Even if we receive regulatory approval of any drugs we are developing or may develop, we will be subject to continuing regulatory review, including the review of clinical results which are reported after our drug candidates become commercially available approved drugs. As greater numbers of patients use a drug following its approval, side effects and other problems may be observed after approval that were not seen or anticipated during pre-approval clinical trials. In addition, the manufacturer, and the manufacturing facilities we use to make any approved drugs, will also be subject to periodic review and inspection by the FDA. The subsequent discovery of previously unknown problems with the drug, manufacturer or facility may result in restrictions on the drug, manufacturer or facility, including withdrawal of the drug from the market. If we fail to comply with applicable continuing regulatory requirements, we may be subject to fines, suspension or withdrawal of regulatory approval, product recalls and seizures, operating restrictions and criminal prosecutions.

Our product promotion and advertising is also subject to regulatory requirements and continuing regulatory review. In particular, the marketing claims we will be permitted to make in labeling or advertising regarding our marketed products will be limited by the terms and conditions of the FDA-approved labeling. We must submit copies of our advertisements and promotional labeling to the FDA at the time of initial publication or dissemination. If the FDA believes these materials or statements promote our products for unapproved indications, or with unsubstantiated claims, or if we fail to provide appropriate safety-related information, the FDA could allege that our promotional activities misbrand our products. Specifically, the FDA could issue an untitled letter or warning letter, which may demand, among other things, that we cease such promotional activities and issue corrective advertisements and labeling. The FDA also could take enforcement action including seizure of allegedly misbranded product, injunction or criminal prosecution against us and our officers or employees. If we repeatedly or deliberately fail to submit such advertisements and labeling to the agency, the FDA could withdraw our approvals. Moreover, the Department of Justice can bring civil or criminal actions against companies that promote drugs or biologics for unapproved uses, based on the False Claims Act and other federal laws governing reimbursement for such products under the Medicare, Medicaid and other federally supported healthcare programs. Monetary penalties in such cases have often been substantial, and civil penalties can include costly mandatory compliance programs and exclusion from federal healthcare programs.

## **Table of Contents**

**If we do not comply with laws regulating the protection of the environment and health and human safety, our business could be adversely affected.**

Our research and development efforts involve the controlled use of hazardous materials, chemicals and various radioactive compounds. Although we believe that our safety procedures for the use, manufacture, storage, handling and disposing of these materials comply with the standards prescribed by federal, state and local laws and regulations, the risk of accidental contamination or injury from these materials cannot be eliminated. If an accident occurs, we could be held liable for resulting damages, which could be substantial. We are also subject to numerous environmental, health and workplace safety laws and regulations, including those governing laboratory procedures, exposure to blood-borne pathogens and the handling of biohazardous materials. Additional federal, state and local laws and regulations affecting our operations may be adopted in the future. Although we maintain workers' compensation insurance to cover us for costs we may incur due to injuries to our employees resulting from the use of these materials, this insurance may not provide adequate coverage against potential liabilities. Due to the small amount of hazardous materials that we generate, we have determined that the cost to secure insurance coverage for environmental liability and toxic tort claims far exceeds the benefits. Accordingly, we do not maintain any insurance to cover pollution conditions or other extraordinary or unanticipated events relating to our use and disposal of hazardous materials. We may incur substantial costs to comply with, and substantial fines or penalties if we violate, any of these laws or regulations.

## **Risks Related to Commercialization of Our Drug Candidates**

**If we are unable to establish sales and marketing capabilities or enter into agreements with third parties to market and sell our drug candidates, we may not generate product revenue.**

We have no commercial products, and we do not currently have an organization for the sales and marketing of pharmaceutical products. In order to successfully commercialize any drugs that may be approved in the future by the FDA or comparable foreign regulatory authorities, we must build our sales and marketing capabilities or make arrangements with third parties to perform these services. For certain drug candidates in selected indications where we believe that an approved product could be commercialized by a specialty sales force in North America that calls on a limited but focused group of physicians, we intend to commercialize these products ourselves. However, in therapeutic indications that require a large sales force selling to a large and diverse prescribing population and for markets outside of North America, we plan to enter into arrangements with other companies for commercialization. For example, we have entered into an agreement with Gilead Sciences for the development and commercialization of certain of our HCV candidates involving NS4A antagonism. If we are unable to establish adequate sales, marketing and distribution capabilities, whether independently or with third parties, we may not be able to generate product revenue and may not become profitable.

**If physicians and patients do not accept our future drugs, we may be unable to generate significant revenue, if any.**

Even if elvucitabine and ACH-702, or any other drug candidates we may develop or acquire in the future, obtain regulatory approval, they may not gain market acceptance among physicians, health care payors, patients and the medical community. Factors that we believe could materially affect market acceptance of our product candidates include:

the timing of market introduction of competitive drugs;

the demonstrated clinical safety and efficacy of our product candidates compared to other drugs;

the cost-effectiveness of our product candidates;

the availability of reimbursement from managed care plans and other third-party payors;

the convenience and ease of administration of our product candidates;



the existence, prevalence and severity of adverse side effects;

## **Table of Contents**

other potential advantages of alternative treatment methods; and

the effective marketing and distribution support.

If our approved drugs fail to achieve market acceptance, we would not be able to generate significant revenue.

**If third-party payors do not adequately reimburse patients for any of our drug candidates that are approved for marketing, they might not be purchased or used, and our revenues and profits will not develop or increase.**

Our revenues and profits will depend significantly upon the availability of adequate reimbursement for the use of any approved drug candidates from governmental and other third-party payors, both in the United States and in foreign markets. Reimbursement by a third party may depend upon a number of factors, including the third-party payor's determination that use of a product is:

a covered benefit under its health plan;

safe, effective and medically necessary;

appropriate for the specific patient;

cost effective; and

neither experimental nor investigational.

Obtaining reimbursement approval for a product from each third-party and government payor is a time-consuming and costly process that could require us to provide supporting scientific, clinical and cost-effectiveness data for the use of any approved drugs to each payor. We may not be able to provide data sufficient to gain acceptance with respect to reimbursement. There also exists substantial uncertainty concerning third-party reimbursement for the use of any drug candidate incorporating new technology, and even if determined eligible, coverage may be more limited than the purposes for which the drug is approved by the FDA. Moreover, eligibility for coverage does not imply that any drug will be reimbursed in all cases or at a rate that allows us to make a profit or even cover our costs. Interim payments for new products, if applicable, may also not be sufficient to cover our costs and may not be made permanent. Reimbursement rates may vary according to the use of the drug and the clinical setting in which it is used, may be based on payments allowed for lower-cost products that are already reimbursed, may be incorporated into existing payments for other products or services, and may reflect budgetary constraints and/or imperfections in Medicare or Medicaid data used to calculate these rates. Net prices for products may be reduced by mandatory discounts or rebates required by government health care programs or by any future relaxation of laws that restrict imports of certain medical products from countries where they may be sold at lower prices than in the United States.

There have been, and we expect that there will continue to be, federal and state proposals to constrain expenditures for medical products and services, which may affect payments for any of our approved products. The Centers for Medicare and Medicaid Services frequently change product descriptors, coverage policies, product and service codes, payment methodologies and reimbursement values. Third-party payors often follow Medicare coverage policy and payment limitations in setting their own reimbursement rates and may have sufficient market power to demand significant price reductions. As a result of actions by these third-party payors, the health care industry is experiencing a trend toward containing or reducing costs through various means, including lowering reimbursement rates, limiting therapeutic class coverage and negotiating reduced payment schedules with service providers for drug products.

Our inability to promptly obtain coverage and profitable reimbursement rates from government-funded and private payors for any approved products could have a material adverse effect on our operating results and our overall financial condition.



---

## **Table of Contents**

**Recent federal legislation will increase the pressure to reduce prices of pharmaceutical products paid for by Medicare, which could adversely affect our revenues, if any.**

The Medicare Prescription Drug Improvement and Modernization Act of 2003, or MMA, changes the way Medicare will cover and pay for pharmaceutical products. The legislation expanded Medicare coverage for drug purchases by the elderly and eventually will introduce a new reimbursement methodology based on average sales prices for drugs. In addition, this legislation provides authority for limiting the number of drugs that will be covered in any therapeutic class. As a result of this legislation and the expansion of federal coverage of drug products, we expect that there will be additional pressure to contain and reduce costs. These cost reduction initiatives and other provisions of this legislation could decrease the coverage and price that we receive for any approved products and could seriously harm our business. While the MMA applies only to drug benefits for Medicare beneficiaries, private payors often follow Medicare coverage policy and payment limitations in setting their own reimbursement rates, and any reduction in reimbursement that results from the MMA may result in a similar reduction in payments from private payors.

### **Risks Related to Our Dependence on Third Parties**

**We may not be able to execute our business strategy if we are unable to enter into alliances with other companies that can provide capabilities and funds for the development and commercialization of our drug candidates. If we are unsuccessful in forming or maintaining these alliances on favorable terms, our business may not succeed.**

We have entered into a collaboration arrangement with Gilead Sciences for the development and commercialization of certain of our HCV compounds involving NS4A antagonism, and we may enter into additional collaborative arrangements in the future. For example, we may enter into alliances with major biotechnology or pharmaceutical companies to jointly develop specific drug candidates and to jointly commercialize them if they are approved. In such alliances, we would expect our biotechnology or pharmaceutical collaborators to provide substantial funding, as well as significant capabilities in clinical development, regulatory affairs, marketing and sales. We may not be successful in entering into any such alliances on favorable terms, if at all. Even if we do succeed in securing such alliances, we may not be able to maintain them if, for example, development or approval of a drug candidate is delayed or sales of an approved drug are disappointing. Furthermore, any delay in entering into collaboration agreements could delay the development and commercialization of our drug candidates and reduce their competitiveness even if they reach the market. Any such delay related to our collaborations could adversely affect our business.

**If a collaborative partner terminates or fails to perform its obligations under agreements with us, the development and commercialization of our drug candidates could be delayed or terminated.**

If Gilead Sciences or another, future collaborative partner does not devote sufficient time and resources to collaboration arrangements with us, we may not realize the potential commercial benefits of the arrangement, and our results of operations may be adversely affected. In addition, if any existing or future collaboration partner were to breach or terminate its arrangements with us, the development and commercialization of the affected drug candidate could be delayed, curtailed or terminated because we may not have sufficient financial resources or capabilities to continue development and commercialization of the drug candidate on our own. Under our collaboration agreement with Gilead Sciences, Gilead Sciences may terminate the collaboration for any reason at any time upon 120 days notice. If Gilead Sciences were to exercise this right, the development and commercialization of our HCV compounds would be adversely affected.

Much of the potential revenue from our existing and future collaborations will consist of contingent payments, such as payments for achieving development milestones and royalties payable on sales of drugs developed. The milestone and royalty revenues that we may receive under these collaborations will depend upon our collaborator's ability to successfully develop, introduce, market and sell new products. In addition, our collaborators may decide to enter into arrangements with third parties to commercialize products developed under our existing or future collaborations using our technologies, which could reduce the milestone and royalty

## **Table of Contents**

revenue that we may receive, if any. In many cases we will not be involved in these processes and accordingly will depend entirely on our collaborators. Our collaboration partners may fail to develop or effectively commercialize products using our products or technologies because they:

decide not to devote the necessary resources due to internal constraints, such as limited personnel with the requisite scientific expertise, limited cash resources or specialized equipment limitations, or the belief that other drug development programs may have a higher likelihood of obtaining regulatory approval or may potentially generate a greater return on investment;

do not have sufficient resources necessary to carry the drug candidate through clinical development, regulatory approval and commercialization; or

cannot obtain the necessary regulatory approvals.

In addition, a collaborator may decide to pursue a competitive drug candidate developed outside of the collaboration. In particular, Gilead Sciences, our collaborator for our chronic hepatitis C program, currently is developing other products for the treatment of chronic hepatitis C, and the results of its development efforts could affect its commitment to our drug candidate. If our collaboration partners fail to develop or effectively commercialize drug candidates or drugs for any of these reasons, we may not be able to replace the collaboration partner with another partner to develop and commercialize a drug candidate or drugs under the terms of the collaboration. We may also be unable to obtain, on terms acceptable to us, a license from such collaboration partner to any of its intellectual property that may be necessary or useful for us to continue to develop and commercialize a drug candidate.

### **We rely on third parties to conduct our clinical trials, and those third parties may not perform satisfactorily, including failing to meet established deadlines for the completion of such trials.**

We do not have the ability to independently conduct clinical trials for our drug candidates, and we rely on third parties such as contract research organizations, medical institutions and clinical investigators to enroll qualified patients and conduct our clinical trials. Our reliance on these third parties for clinical development activities reduces our control over these activities. Accordingly, these third-party contractors may not complete activities on schedule, or may not conduct our clinical trials in accordance with regulatory requirements or our trial design. To date, we believe our contract research organizations and other similar entities with which we are working have performed well. However, if these third parties do not successfully carry out their contractual duties or meet expected deadlines, we may be required to replace them. Although we believe that there are a number of other third-party contractors we could engage to continue these activities, it may result in a delay of the affected trial. Accordingly, our efforts to obtain regulatory approvals for and commercialize our drug candidates may be delayed.

### **We currently depend on third-party manufacturers to produce our preclinical and clinical drug supplies and intend to rely upon third-party manufacturers to produce commercial supplies of any approved drug candidates. If in the future we manufacture any of our drug candidates, we will be required to incur significant costs and devote significant efforts to establish and maintain these capabilities.**

We have relied upon third parties to produce material for preclinical and clinical testing purposes and intend to continue to do so in the future. We also expect to rely upon third parties to produce materials required for the commercial production of our drug candidates if we succeed in obtaining necessary regulatory approvals. If we are unable to arrange for third-party manufacturing, or to do so on commercially reasonable terms, we may not be able to complete development of our drug candidates or market them. Reliance on third-party manufacturers entails risks to which we would not be subject if we manufactured drug candidates ourselves, including reliance on the third party for regulatory compliance and quality assurance, the possibility of breach of the manufacturing agreement by the third party because of factors beyond our control and the possibility of termination or nonrenewal of the agreement by the third party, based on its own business priorities, at a time that is costly or damaging to us. In addition, the FDA and other regulatory authorities require that our drug candidates be manufactured according to current good manufacturing practice regulations. Any failure by us or our third-party

## **Table of Contents**

manufacturers to comply with current good manufacturing practices and/or our failure to scale up our manufacturing processes could lead to a delay in, or failure to obtain, regulatory approval of any of our drug candidates. In addition, such failure could be the basis for action by the FDA to withdraw approvals for drug candidates previously granted to us and for other regulatory action.

We currently rely on a single manufacturer for the preclinical and clinical supplies of each of our drug candidates and do not currently have relationships for redundant supply or a second source for any of our drug candidates. To date, our third-party manufacturers have met our manufacturing requirements, but we cannot assure you that they will continue to do so. Any performance failure on the part of our existing or future manufacturers could delay clinical development or regulatory approval of our drug candidates or commercialization of any approved products. If for some reason our current contract manufacturers cannot perform as agreed, we may be required to replace them. Although we believe there are a number of potential replacements as our manufacturing processes are not manufacturer specific, we may incur added costs and delays in identifying and qualifying any such replacements. Furthermore, although we generally do not begin a clinical trial unless we believe we have a sufficient supply of a drug candidate to complete the trial, any significant delay in the supply of a drug candidate for an ongoing trial due to the need to replace a third-party manufacturer could delay completion of the trial.

We may in the future elect to manufacture certain of our drug candidates in our own manufacturing facilities. If we do so, we will require substantial additional funds and need to recruit qualified personnel in order to build or lease and operate any manufacturing facilities.

## **Risks Related to Patents and Licenses**

**If we are unable to adequately protect our drug candidates, or if we infringe the rights of others, our ability to successfully commercialize our drug candidates will be harmed.**

As of December 31, 2006, our patent portfolio included a total of 175 patents and patent applications worldwide. We own or hold exclusive licenses to a total of seven U.S. issued patents and 18 U.S. pending patent applications, as well as 129 pending PCT applications and foreign counterparts to many of these patents and patent applications. Our success depends in part on our ability to obtain patent protection both in the United States and in other countries for our drug candidates. Our ability to protect our drug candidates from unauthorized or infringing use by third parties depends in substantial part on our ability to obtain and maintain valid and enforceable patents. Due to evolving legal standards relating to the patentability, validity and enforceability of patents covering pharmaceutical inventions and the scope of claims made under these patents, our ability to maintain, obtain and enforce patents is uncertain and involves complex legal and factual questions. Accordingly, rights under any issued patents may not provide us with sufficient protection for our drug candidates or provide sufficient protection to afford us a commercial advantage against competitive products or processes. In addition, we cannot guarantee that any patents will issue from any pending or future patent applications owned by or licensed to us. Even if patents have issued or will issue, we cannot guarantee that the claims of these patents are or will be valid or enforceable or will provide us with any significant protection against competitive products or otherwise be commercially valuable to us. Patent applications in the United States are maintained in confidence for up to 18 months after their filing. In some cases, however, patent applications remain confidential in the U.S. Patent and Trademark Office, which we refer to as the U.S. Patent Office, for the entire time prior to issuance as a U.S. patent. Similarly, publication of discoveries in the scientific or patent literature often lag behind actual discoveries. Consequently, we cannot be certain that we or our licensors or co-owners were the first to invent, or the first to file patent applications on, our drug candidates or their use as anti-infective drugs. In the event that a third party has also filed a U.S. patent application relating to our drug candidates or a similar invention, we may have to participate in interference proceedings declared by the U.S. Patent Office to determine priority of invention in the United States. The costs of these proceedings could be substantial and it is possible that our efforts would be unsuccessful, resulting in a loss of our U.S. patent position. Furthermore, we may not have identified all U.S. and foreign patents or published applications that affect our business either by blocking our ability to commercialize our drugs or by covering similar technologies that affect our drug market.

## **Table of Contents**

The laws of some foreign jurisdictions do not protect intellectual property rights to the same extent as in the United States and many companies have encountered significant difficulties in protecting and defending such rights in foreign jurisdictions. If we encounter such difficulties in protecting or are otherwise precluded from effectively protecting our intellectual property rights in foreign jurisdictions, our business prospects could be substantially harmed.

**We license patent rights from third-party owners. If such owners do not properly maintain or enforce the patents underlying such licenses, our competitive position and business prospects will be harmed.**

We are party to a number of licenses that give us rights to third-party intellectual property that is necessary or useful for our business. In particular, we have obtained a sublicense from Vion Pharmaceuticals and a license from Emory University with respect to elvucitabine. We may enter into additional licenses to third-party intellectual property in the future. Our success will depend in part on the ability of our licensors to obtain, maintain and enforce patent protection for their intellectual property, in particular, those patents to which we have secured exclusive rights. Our licensors may not successfully prosecute the patent applications to which we are licensed. Even if patents issue in respect of these patent applications, our licensors may fail to maintain these patents, may determine not to pursue litigation against other companies that are infringing these patents, or may pursue such litigation less aggressively than we would. In addition, our licensors may terminate their agreements with us in the event we breach the applicable license agreement and fail to cure the breach within a specified period of time. Without protection for the intellectual property we license, other companies might be able to offer substantially identical products for sale, which could adversely affect our competitive business position and harm our business prospects.

**Litigation regarding patents, patent applications and other proprietary rights may be expensive and time consuming. If we are involved in such litigation, it could cause delays in bringing drug candidates to market and harm our ability to operate.**

Our success will depend in part on our ability to operate without infringing the proprietary rights of third parties. Although we are not currently aware of any litigation or other proceedings or third-party claims of intellectual property infringement related to our drug candidates, the pharmaceutical industry is characterized by extensive litigation regarding patents and other intellectual property rights. Other parties may obtain patents in the future and allege that the use of our technologies infringes these patent claims or that we are employing their proprietary technology without authorization. Likewise, third parties may challenge or infringe upon our existing or future patents. Under our license agreements with Vion Pharmaceuticals and The University of Maryland, we have the right, but not an obligation, to bring actions against an infringing third party. If we do not bring an action within a specified number of days, the licensor may bring an action against the infringing party. Pursuant to our license agreement with Emory University and our research collaboration and license agreement with Gilead Sciences, Emory and Gilead Sciences have the primary right, but not an obligation, to bring actions against an infringing third party. However, if Gilead Sciences or Emory elects not to bring an action, we may bring an action against the infringing party.

Proceedings involving our patents or patent applications or those of others could result in adverse decisions regarding:

the patentability of our inventions relating to our drug candidates; and/or

the enforceability, validity or scope of protection offered by our patents relating to our drug candidates.

Even if we are successful in these proceedings, we may incur substantial costs and divert management time and attention in pursuing these proceedings, which could have a material adverse effect on us. If we are unable to avoid infringing the patent rights of others, we may be required to seek a license, defend an infringement action or challenge the validity of the patents in court. Patent litigation is costly and time consuming. We may not have sufficient resources to bring these actions to a successful conclusion. In addition, if we do not obtain a license,

## **Table of Contents**

develop or obtain non-infringing technology, fail to defend an infringement action successfully or have infringed patents declared invalid, we may:

incur substantial monetary damages;

encounter significant delays in bringing our drug candidates to market; and/or

be precluded from participating in the manufacture, use or sale of our drug candidates or methods of treatment requiring licenses.

**Confidentiality agreements with employees and others may not adequately prevent disclosure of trade secrets and other proprietary information and may not adequately protect our intellectual property.**

We rely on trade secrets to protect our technology, especially where we do not believe patent protection is appropriate or obtainable. However, trade secrets are difficult to protect. In order to protect our proprietary technology and processes, we also rely in part on confidentiality and intellectual property assignment agreements with our corporate partners, employees, consultants, outside scientific collaborators and sponsored researchers and other advisors. These agreements may not effectively prevent disclosure of confidential information nor result in the effective assignment to us of intellectual property, and may not provide an adequate remedy in the event of unauthorized disclosure of confidential information or other breaches of the agreements. In addition, others may independently discover our trade secrets and proprietary information, and in such case we could not assert any trade secret rights against such party. Enforcing a claim that a party illegally obtained and is using our trade secrets is difficult, expensive and time consuming, and the outcome is unpredictable. In addition, courts outside the United States may be less willing to protect trade secrets. Costly and time-consuming litigation could be necessary to seek to enforce and determine the scope of our proprietary rights, and failure to obtain or maintain trade secret protection could adversely affect our competitive business position.

## **Risks Relating to Our Common Stock**

**Our stock price is likely to be volatile, and the market price of our common stock may decline in value in the future.**

The market price of our common stock could be subject to significant fluctuations. Market prices for securities of early stage pharmaceutical, biotechnology and other life sciences companies have historically been particularly volatile. Some of the factors that may cause the market price of our common stock to fluctuate include:

the results of our current phase II and any future clinical trials for elvucitabine;

the results of our research and candidate selection in our HCV program;

the results of ongoing preclinical studies and planned clinical trials of our preclinical drug candidates, including ACH-702;

the entry into, or termination of, key agreements, in particular our collaboration agreement with Gilead Sciences or our sublicense agreement with Vion Pharmaceuticals;

the results of regulatory reviews relating to the approval of our drug candidates;

the initiation of, material developments in, or conclusion of litigation to enforce or defend any of our intellectual property rights;



failure of any of our drug candidates, if approved, to achieve commercial success;

general and industry-specific economic conditions that may affect our research and development expenditures;

the results of clinical trials conducted by others on drugs that would compete with our drug candidates;

the failure or discontinuation of any of our research programs;

## **Table of Contents**

issues in manufacturing our drug candidates or any approved products;

the introduction of technological innovations or new commercial products by us or our competitors;

changes in estimates or recommendations by securities analysts, if any, who cover our common stock;

future sales of our common stock;

changes in the structure of health care payment systems; and

period-to-period fluctuations in our financial results.

The stock markets in general have experienced substantial volatility that has often been unrelated to the operating performance of individual companies. These broad market fluctuations may adversely affect the trading price of our common stock.

In the past, following periods of volatility in the market price of a company's securities, stockholders have often instituted class action securities litigation against those companies. Such litigation, if instituted, could result in substantial costs and diversion of management attention and resources, which could significantly harm our profitability and reputation.

**Our executive officers, directors and principal stockholders own a large percentage of our voting common stock and could limit our stockholders' influence on corporate decisions or could delay or prevent a change in corporate control.**

Our directors, executive officers and current holders of more than 5% of our outstanding common stock, together with their affiliates and related persons, beneficially own, in the aggregate, approximately 41% of our outstanding common stock. As a result, these stockholders, if acting together, have the ability to determine the outcome of all matters submitted to our stockholders for approval, including the election and removal of directors and any merger, consolidation or sale of all or substantially all of our assets and other extraordinary transactions. The interests of this group of stockholders may not always coincide with our corporate interests or the interest of other stockholders, and they may act in a manner with which you may not agree or that may not be in the best interests of other stockholders. This concentration of ownership may have the effect of:

delaying, deferring or preventing a change in control of our company;

entrenching our management and/or board;

impeding a merger, consolidation, takeover or other business combination involving our company; or

discouraging a potential acquirer from making a tender offer or otherwise attempting to obtain control of our company.

**Our management is required to devote substantial time and incur additional expense to comply with public company regulations. Our failure to comply with such regulations could subject us to public investigations, fines, enforcement actions and other sanctions by regulatory agencies and authorities and, as a result, our stock price could decline in value.**

As a private company with limited resources, we maintained a small finance and accounting staff. As a public company, the Sarbanes-Oxley Act of 2002 and the related rules and regulations of the SEC, as well as the rules of the Nasdaq Global Market, now require us to implement additional corporate governance practices and adhere to a variety of reporting requirements and complex accounting rules. Compliance with

## Edgar Filing: ACHILLION PHARMACEUTICALS INC - Form 10-K

these public company obligations will increase our legal and financial compliance costs and place significant additional demands on our finance and accounting staff and on our financial, accounting and information systems.

In particular, as a public company, our management will be required to conduct an annual evaluation of our internal controls over financial reporting and include a report of management on our internal controls in our annual reports on Form 10-K. In addition, we will be required to have our independent public accounting firm

## **Table of Contents**

attest to and report on management's assessment of the effectiveness of our internal controls over financial reporting. Under current rules, we will be subject to these requirements beginning with our annual report on Form 10-K for our fiscal year ending December 31, 2007. If we are unable to conclude that we have effective internal controls over financial reporting or, if our independent auditors are unable to provide us with an attestation and an unqualified report as to the effectiveness of our internal controls over financial reporting, investors could lose confidence in the reliability of our financial statements, which could result in a decrease in the value of our common stock.

**A significant portion of our total outstanding shares are restricted from immediate resale but may be sold into the market in the near future. If there are substantial sales of our common stock, the price of our common stock could decline.**

The price of our common stock could decline if there are substantial sales of our common stock and if there is a large number of shares of our common stock available for sale. As of March 1, 2007 we had outstanding 15,543,214 shares of common stock. Of these shares, 10,336,641 are currently restricted as a result of securities laws or lock-up agreements but will be able to be sold in the near future. The holders of 9,833,964 shares of common stock have rights, subject to certain conditions, to require us to file registration statements to permit the resale of their shares in the public market or to include their shares in registration statements that we may file for ourselves or other stockholders. We have also registered all shares of common stock that are issuable under our stock plans.

Sales of a substantial number of shares of our common stock in the public market could occur at any time. These sales, or the perception in the market that the holders of a large number of shares intend to sell shares, could reduce the market price of our common stock.

**We do not anticipate paying cash dividends, and accordingly stockholders must rely on stock appreciation for any return on their investment in us.**

We anticipate that we will retain our earnings, if any, for future growth and therefore do not anticipate paying cash dividends in the future. As a result, only appreciation of the price of our common stock will provide a return to stockholders.

## **ITEM 1B. UNRESOLVED STAFF COMMENTS**

Not applicable.

## **ITEM 2. PROPERTIES**

We are currently leasing approximately 37,000 square feet of laboratory and office space in New Haven, Connecticut, which we occupy under a ten-year lease expiring in 2011. We believe our existing facilities are adequate for our current needs and that additional space will be available in the future on commercially reasonable terms as needed.

## **ITEM 3. LEGAL PROCEEDINGS**

We are currently not a party to any material legal proceedings.

## **ITEM 4. SUBMISSION OF MATTERS TO A VOTE OF SECURITY HOLDERS**

No matters were submitted to a vote of our security holders during the fourth quarter of 2006.

**Table of Contents****PART II****ITEM 5. MARKET FOR REGISTRANT'S COMMON EQUITY, RELATED STOCKHOLDER MATTERS AND ISSUER PURCHASES OF EQUITY SECURITIES***Market Information*

Our common stock began trading on the NASDAQ Global Market on October 26, 2006 under the symbol ACHN. Prior to that time, there was no established public trading market for our common stock. The following table sets forth the high and low sale prices per share for our common stock on the NASDAQ Global Market for the period indicated:

Year Ended December 31:	2006	
	High	Low
Fourth Quarter (beginning October 26, 2006)	\$ 17.94	\$ 11.57

*Holders of record*

As of March 1, 2007, there were approximately 132 holders of record of our common stock.

*Dividends*

We have never paid or declared any cash dividends on our common stock. We currently intend to retain any earnings for future growth and, therefore, do not expect to pay cash dividends in the foreseeable future.

*Use of Proceeds*

In our initial public offering, or IPO, we sold 4,500,000 shares of common stock, including an over-allotment option of 675,000 shares, pursuant to a registration statement on Form S-1 (File No. 333-132921) that was declared effective by the SEC on October 25, 2006. We received aggregate net proceeds of approximately \$53.4 million, after deducting underwriting discounts and commissions of approximately \$4.2 million and expenses of the offering of approximately \$1.9 million. The underwriters of the offering were Cowen and Company, LLC, CIBC World Markets and JMP Securities. The net proceeds have been allocated for general corporate purposes and capital expenditures. As of December 31, 2006 approximately \$4.3 million of the net proceeds of the offering had been used to fund operations and purchase fixed assets. As of December 31, 2006, approximately \$0.6 million of the net proceeds of the offering had been used for debt repayments. The remaining net proceeds are invested in U.S. Government and Agency securities.

*Issuer Purchases of Equity Securities*

Neither we nor any affiliated purchaser or anyone acting on behalf of us or an affiliated purchaser made any purchases of shares of our common stock in the fourth quarter of 2006.

*Comparative Stock Performance*

The following graph and related information should not be deemed soliciting material or to be filed with the Securities and Exchange Commission, nor shall such information be incorporated by reference into any future filing under the Securities Act of 1933 or Securities Exchange Act of 1934, each as amended, except to the extent that we specifically incorporate it by reference into such filing.

## **Table of Contents**

The following graph compares the cumulative total stockholder return on our common stock from October 26, 2006 (the first trading date following our initial public offering) to December 31, 2006 with the cumulative total return of (i) the NASDAQ Market Index and (ii) the NASDAQ Biotechnology Index. This graph assumes the investment of \$100.00 on October 26, 2006 in our common stock, the NASDAQ Market Index and the NASDAQ Biotechnology Index, and assumes any dividends are reinvested.

	10/26/06	11/30/06	12/31/06
ACHILLION PHARMACEUTICALS, INC.	100.00	113.80	130.06
NASDAQ BIOTECHNOLOGY INDEX	100.00	99.21	96.47
NASDAQ MARKET INDEX	100.00	102.78	102.03

**Table of Contents****ITEM 6. SELECTED FINANCIAL DATA**

The following selected financial data should be read together with the information under Management's Discussion and Analysis of Financial Condition and Results of Operations and our financial statements and the notes to those financial statements included elsewhere in this Annual Report on Form 10-K. The selected statements of operations data for the years ended December 31, 2006, 2005 and 2004 and balance sheet data as of December 31, 2006 and 2005 set forth below have been derived from our audited financial statements included elsewhere in this Annual Report. The selected statement of operations data for the years ended December 31, 2003 and 2002 and balance sheet data as of December 31, 2004, 2003 and 2002 set forth below have been derived from the audited financial statements for such years not included in this Annual Report. The historical results presented here are not necessarily indicative of future results.

	2002	Years Ended December 31,			
		2003	2004	2005	2006
		(in thousands, except per share amounts)			
Statement of Operations Data:					
Total operating revenue	\$	\$	\$ 807	\$ 8,526	\$ 3,292
Research and development	16,670	13,194	14,841	18,112	22,741
General and administrative	4,824	3,261	3,181	3,101	4,865
Total operating expenses	21,494	16,455	18,022	21,213	27,606
Loss from Operations	(21,494)	(16,455)	(17,215)	(12,687)	(24,314)
Interest income (expense)	452	(170)	(509)	(976)	179
Tax benefit		871	264	88	49
Net loss	(21,042)	(15,754)	(17,460)	(13,575)	(24,086)
Net loss applicable to common shareholders	\$ (23,597)	\$ (18,326)	\$ (20,048)	\$ (16,514)	\$ (28,249)
Net loss per share basic and diluted	\$ (70.86)	\$ (44.16)	\$ (43.77)	\$ (32.96)	\$ (9.35)
Weighted average number of shares outstanding basic and diluted	333	415	458	501	3,022
	2002	2003	2004	2005	2006
Balance Sheet Data:					
Cash and cash equivalents	\$ 19,478	\$ 8,243	\$ 9,481	\$ 9,583	\$ 22,662
Marketable Securities	6,306	1,749	4,897		39,904
Working capital	23,815	8,393	6,264	654	53,190
Total assets	32,165	16,072	19,291	13,750	67,146
Long-term liabilities	3,390	3,046	14,811	5,021	8,102
Total liabilities	6,293	5,916	24,230	15,418	19,776
Convertible preferred stock	67,555	70,127	74,740	94,354	
Total stockholders' (deficit) equity	(41,683)	(59,971)	(79,679)	(96,022)	47,370

## **Table of Contents**

### **ITEM 7. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS** **Overview**

We are a biopharmaceutical company focused on the discovery, development and commercialization of innovative treatments for infectious diseases. Within the anti-infective market, we are currently concentrating on the development of antivirals and antibacterials. We are targeting our antiviral development efforts on treatments for HIV infection and chronic hepatitis C, and we are directing our antibacterial development efforts toward treatments for serious hospital-based bacterial infections.

We have devoted and are continuing to devote substantially all of our efforts toward product research and development. We have incurred losses of \$110 million from inception through December 31, 2006 and had an accumulated deficit of \$124 million through December 31, 2006. Our net losses were \$24.1 million, \$13.6 million and \$17.5 million for the years ended December 31, 2006, 2005 and 2004, respectively. We have funded our operations to date primarily through:

proceeds of \$161.2 million from the sale of equity securities, including our initial public offering in October 2006;

borrowings of \$15.9 million from debt facilities; and

receipts of \$10.0 million from up-front and milestone payments, as well as \$6.5 million in cost-sharing receipts, from our collaboration partner, Gilead Sciences.

We expect to incur substantial and increasing losses for at least the next several years as we seek to:

complete our phase II clinical trials for elvucitabine and, if supported by favorable data from the phase II trials, initiate phase III clinical trials;

advance ACH-702 through preclinical testing, submit an IND to the FDA and begin a phase I clinical trial; and

advance our NS4A antagonist program through clinical candidate nomination, pre-clinical testing and proof-of-concept with our collaboration partner, Gilead Sciences;

continue to advance our other research and development programs in HIV and HCV and identify additional drug candidates.

We will need substantial additional financing to obtain regulatory approvals, fund operating losses, and, if deemed appropriate, establish manufacturing and sales and marketing capabilities, which we will seek to raise through public or private equity or debt financings, collaborative or other arrangements with third parties or through other sources of financing. There can be no assurance that such funds will be available on terms favorable to us, if at all. In addition to the normal risks associated with early-stage companies, there can be no assurance that we will successfully complete our research and development, obtain adequate patent protection for our technology, obtain necessary government regulatory approval for drug candidates we develop or that any approved drug candidates will be commercially viable. In addition, we may not be profitable even if we succeed in commercializing any of our drug candidates.

### **Financial Operations Overview**

#### ***Revenue***

To date, we have not generated revenue from the sale of any drugs. The majority of our revenue recognized to date has been derived from our collaboration with Gilead Sciences to develop compounds for use in treating chronic hepatitis C. During the years ended December 31, 2006, 2005 and 2004 we recognized \$3.0, \$8.3 and \$0.8 million, respectively, under this collaboration agreement.





**Table of Contents**

Upon initiating our collaboration with Gilead Sciences, we received a payment of \$10.0 million, which included an equity investment by Gilead Sciences determined to be worth approximately \$2.0 million. The remaining \$8.0 million is being accounted for as a nonrefundable up-front fee recognized under the proportionate performance model. Revenue under the proportionate performance model is recognized as our effort under the collaboration is incurred. When our performance obligation is complete, we will recognize milestone payments, if any, when the corresponding milestone is achieved. We will recognize royalty payments, if any, upon product sales.

Research and development expenses under our collaboration with Gilead Sciences, including internal full-time equivalent costs and external research costs, incurred by both companies prior to proof-of-concept, were borne equally by both parties through March 31, 2007. As we were providing the majority of those services and are incurring the majority of those expenses, we are the net recipient of funds under this cost-sharing portion of the arrangement and therefore recognize the reimbursed costs as revenue rather than research expense. Payments made by us to Gilead Sciences in connection with this collaboration are being recognized as a reduction of revenue. Effective April 1, 2007, internal full-time equivalent costs will no longer be subject to this cost-sharing arrangement. Instead, each party will provide for the costs of their own full-time equivalents. We expect that the relative full-time equivalent efforts of each of Achillion and Gilead Sciences will remain approximately one-half of total efforts. We will continue to equally share external research costs with Gilead Sciences.

We have also recognized revenue under a Small Business Innovation Research, or SBIR, grant by the National Institutes of Health, or NIH, related to our HIV capsid research program. During the years ended December 31, 2006, 2005 and 2004 we recognized \$313,000, \$249,000 and \$0, respectively, in revenue under this grant.

**Research and Development**

Our research and development expenses reflect costs incurred for our proprietary research and development projects as well as costs for research and development projects conducted as part of collaborative arrangements we establish. These costs consist primarily of salaries and benefits for our research and development personnel, costs of services by clinical research organizations, other outsourced research, materials used during research and development activities, facility-related costs such as rent and utilities associated with our laboratory and clinical development space, operating supplies and other costs associated with our research and development activities. We expect research and development costs to increase significantly over the next several years as our drug development programs progress.

All costs associated with internal research and development, and research and development services for which we have externally contracted, are expensed as incurred. Our research and development expenses are outlined in the table below.

	For the Years Ended		
	2006	2005	2004
	(in thousands)		
Direct external costs:			
Elvucitabine	\$ 5,204	\$ 2,520	\$ 1,550
ACH-806	3,001	4,047	2,277
ACH-702	3,141	1,025	530
	11,346	7,592	4,357
Direct internal personnel costs	6,337	5,301	5,108
Sub-total direct costs	17,683	12,893	9,465
Indirect costs and overhead	5,058	5,219	5,376
Total research and development	\$ 22,741	\$ 18,112	\$ 14,841

## **Table of Contents**

Currently, we are conducting two phase II clinical trials for elvucitabine and preclinical studies for ACH-702. We recently discontinued a proof-of-concept clinical trial for ACH-806. From the inception of each respective program through December 31, 2006, we incurred approximately \$31.8 million in total costs for elvucitabine, approximately \$24.2 million in total costs for our NS4A antagonist program (including ACH-806) and approximately \$12.4 million in total costs for ACH-702. These figures include our internal research and development personnel costs and related facilities overhead. We expect our research and development costs to increase substantially in the foreseeable future. We currently estimate that the clinical trial costs for two phase III clinical trials of elvucitabine in different HIV populations will be approximately \$48.0 million, exclusive of the internal personnel costs associated with conducting these trials. We anticipate that the costs associated with preclinical development through proof-of-concept of our next generation HCV inhibitor will be approximately \$3.7 million, exclusive of internal personnel costs. This amount represents one-half of the external costs associated with those activities, as we share such external costs with Gilead Sciences. We estimate that the costs associated with completing preclinical studies and phase I clinical trials for ACH-702, which we expect to complete in 2007, will be approximately \$3.0 million, exclusive of the internal personnel costs associated with conducting these studies and trials.

The successful development of our drug candidates is highly uncertain. At this time, we cannot reasonably estimate or know the nature, timing and estimated costs of the efforts that will be necessary to complete the remainder of the development of our drug candidates. We are also unable to predict when, if ever, material net cash inflows will commence from elvucitabine and ACH-702 or any early stage programs. This is due to the numerous risks and uncertainties associated with developing drugs, including the uncertainty of:

the scope, rate of progress and expense of our clinical trials and other research and development activities;

the potential benefits of our drug candidates over other therapies;

in the case of our HCV inhibitors involving NS4A antagonism, the rate at which our collaboration partner, Gilead Sciences, is able to complete pre-clinical and clinical trials, and the degree to which Gilead Sciences prioritizes those trials over its other development efforts;

our ability to market, commercialize and achieve market acceptance for any of our drug candidates that we are developing or may develop in the future;

future clinical trial results;

the terms and timing of any collaborative, licensing and other arrangements that we may establish;

the expense and timing of regulatory approvals; and

the expense of filing, prosecuting, defending and enforcing any patent claims and other intellectual property rights.

A change in the outcome of any of these variables with respect to the development of any of our drug candidates would significantly change the costs and timing associated with the development of that drug candidate. For example, if the FDA or another regulatory authority were to require us to conduct clinical trials beyond those which we currently anticipate will be required to complete clinical development of a drug candidate, or if we experience significant delays in enrollment in any of our clinical trials, we would be required to expend significant additional financial resources and time on the completion of clinical development.

We expect expenses associated with the completion of these programs to be substantial and increase. We do not believe, however, that it is possible at this time to accurately project total program-specific expenses through commercialization. There exist numerous factors associated with the successful commercialization of any of our drug candidates, including future trial design and various regulatory requirements, many of

which cannot be determined with accuracy at this time based on our stage of development. Additionally, future commercial and regulatory factors beyond our control will evolve and therefore impact our clinical development programs and plans over time.

## **Table of Contents**

### ***General and Administrative***

Our general and administrative expenses consist primarily of salaries and benefits for management and administrative personnel, professional fees for legal, accounting and other services, travel costs and facility-related costs such as rent, utilities and other general office expenses. We expect our general and administrative expenses to increase as we continue to hire additional employees, increase our recruiting efforts, expand our infrastructure and incur additional costs related to the growth of our business and operations as a public company.

### **Critical Accounting Policies and Estimates**

The discussion and analysis of our financial condition and results of operations set forth below are based on our financial statements, which have been prepared in accordance with accounting principles generally accepted in the United States of America, or GAAP. The preparation of these financial statements requires us to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. On an ongoing basis, we evaluate our estimates and assumptions, including those described below. We base our estimates on historical experience and on various other 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 that are not readily apparent from other sources. Management makes estimates and exercises judgment in revenue recognition, research and development costs, stock-based compensation and accrued expenses. Actual results may differ from these estimates under different assumptions or conditions.

We believe the following critical accounting policies affect management's more significant judgments and estimates used in the preparation of our financial statements:

#### ***Revenue Recognition***

We recognize revenue from contract research and development and research progress payments in accordance with Staff Accounting Bulletin, or SAB, No. 104, *Revenue Recognition*, or SAB 104, and Financial Accounting Standards Board, or FASB, Emerging Issue Task Force, or EITF, Issue No. 00-21, *Accounting for Revenue Arrangements with Multiple Deliverables*, or EITF 00-21. Revenue-generating research and development collaborations are often multiple element arrangements, providing for a license as well as research and development services. Such arrangements are analyzed to determine whether the deliverables, including research and development services, can be separated or whether they must be accounted for as a single unit of accounting in accordance with EITF 00-21. We recognize upfront license payments as revenue upon delivery of the license only if the license has standalone value and the fair value of the undelivered performance obligations can be determined. If the fair value of the undelivered performance obligations can be determined, such obligations would then be accounted for separately as performed. If the license is considered to either (i) not have standalone value or (ii) have standalone value but the fair value of any of the undelivered performance obligations cannot be determined, the arrangement would then be accounted for as a single unit of accounting and the upfront license payments are recognized as revenue over the estimated period of when our performance obligations are performed.

When we determine that an arrangement should be accounted for as a single unit of accounting, we must determine the period over which the performance obligations will be performed and revenue related to upfront license payments will be recognized. Revenue will be recognized using either a proportionate performance or straight-line method. We recognize revenue using the proportionate performance method provided that we can reasonably estimate the level of effort required to complete our performance obligations under an arrangement and such performance obligations are provided on a best-efforts basis. Direct labor hours or full-time equivalents are typically used as the measure of performance. Under the proportionate performance method, periodic revenue

## **Table of Contents**

related to upfront license payments is recognized as the percentage of actual effort expended in that period to total effort expected for all of our performance obligations under the arrangement. Significant management judgment is required in determining the level of effort required under an arrangement and the period over which we expect to complete our related performance obligations. In the event that a change in estimate occurs, the change will be accounted for using the cumulative catch-up method which provides for an adjustment to revenue in the current period. Estimates of our level of effort may change in the future, resulting in a material change in the amount of revenue recognized in future periods. We experienced a material change in estimate to reflect increased future costs during our 2006 fourth quarter, which resulted in a cumulative decrease to revenue in the quarter.

Collaborations may also involve substantive milestone payments. Substantive milestone payments are considered to be performance bonuses that are recognized upon achievement of the milestone only if all of the following conditions are met: (1) the milestone payments are non-refundable, (2) achievement of the milestone involves a degree of risk and was not reasonably assured at the inception of the arrangement, (3) substantive effort is involved in achieving the milestone, (4) the amount of the milestone payment is reasonable in relation to the effort expended or the risk associated with achievement of the milestone and (5) a reasonable amount of time passes between the upfront license payment and the first milestone payment as well as between each subsequent milestone payment.

Reimbursement of costs is recognized as revenue provided the provisions of EITF Issue No. 99-19 are met, the amounts are determinable and collection of the related receivable is reasonably assured.

### ***Stock-Based Compensation Employee Stock-Based Awards***

Through December 31, 2005, we accounted for grants of stock options and restricted stock utilizing the intrinsic value method in accordance with Accounting Principle Board ( APB ) Opinion No. 25, *Accounting for Stock Issued to Employees* ( APB 25 ), and, accordingly, recognized no compensation expense for an option when the option had an exercise price equal to or greater than the fair market value at the date of grant. Under APB 25, compensation expense was computed to the extent that fair market value of the underlying stock on the date of grant exceeded the exercise price of the employee stock option or stock award. Compensation so computed was then recognized on a straight-line basis over the vesting period. Also through December 31, 2005, we had adopted the disclosure-only provisions of Statement of Financial Accounting Standards No. 123, (SFAS 123), *Accounting for Stock-Based Compensation*, as amended by Statement of Financial Accounting Standards No. 148, *Accounting for Stock Based Compensation Transition and Disclosure* ( SFAS 148 ).

Effective January 1, 2006, we adopted the Statement of Financial Accounting Standards No. 123 (revised 2004), *Share-Based Payment*, (SFAS 123R), which requires measurement and recognition of compensation expense for all stock-based awards made to employees and directors, including employee stock options and employee stock purchases under our 2006 ESPP Plan based on estimated fair values. SFAS 123R supersedes our previous method of accounting under APB 25. In March 2005, the Securities and Exchange Commission issued Staff Accounting Bulletin No. 107 ( SAB 107 ) providing supplemental guidance for SFAS 123R implementation. We have applied the provisions of SAB 107 in our adoption of SFAS 123R.

We primarily grant qualified stock options for a fixed number of shares to employees with an exercise price equal to the market value of the shares at the date of grant. Under the fair value recognition provisions of SFAS No. 123R, stock-based compensation cost is based on the value of the portion of stock-based awards that is ultimately expected to vest during the period. Stock-based compensation expense recognized during the year ended December 31, 2006 includes compensation expense for stock-based awards granted prior to, but not yet vested as of December 31, 2005, based on the fair value on the grant date estimated in accordance with the pro forma provisions of SFAS 123. Compensation expense also includes amounts related to the stock-based awards granted subsequent to December 31, 2005, based on the fair value on the grant date, estimated in accordance with the provisions of SFAS 123R.

## **Table of Contents**

Upon adoption of SFAS 123R, we selected the Black-Scholes option pricing model as the most appropriate method for determining the estimated fair value for stock-based awards. The Black-Scholes model requires the use of assumptions which determine the fair value of the stock-based awards. Determining the fair value of stock-based awards at the grant date requires judgment, including estimating the expected term of stock options, the expected volatility of our stock and expected dividends. In addition, we previously accounted for forfeitures as they occurred. In accordance with SFAS 123R, we are required to estimate forfeitures at the grant date and recognize compensation costs for only those awards that are expected to vest. Judgment is required in estimating the amount of stock-based awards that are expected to be forfeited.

If factors change and we employ different assumptions in the application of SFAS 123R in future periods, the compensation expense that we record under SFAS 123R may differ significantly from what we have recorded in the current period. Therefore, we believe it is important for investors to be aware of the high degree of subjectivity involved when using option pricing models to estimate share-based compensation under SFAS 123R. There is risk that our estimates of the fair values of our share-based compensation awards on the grant dates may differ from the actual values realized upon the exercise, expiration, early termination or forfeiture of those share-based payments in the future. Certain share-based payments, such as employee stock options, may expire worthless or otherwise result in zero intrinsic value as compared to the fair values originally estimated on the grant date and reported in our financial statements. Alternatively, value may be realized from these instruments that is significantly in excess of the fair values originally estimated on the grant date and reported in our financial statements. Although the fair value of employee share-based awards is determined in accordance with SFAS 123R and SAB 107 using an option pricing model, that value may not be indicative of the fair value observed in a willing buyer/willing seller market transaction.

Total compensation expense recorded in the accompanying statements of operations associated with option grants made to employees for the year ended December 31, 2006 was \$968,000. We recorded no tax benefit related to these options since we currently maintain a full valuation allowance.

As of December 31, 2006, the total compensation cost related to nonvested options not yet recognized in the financial statements is approximately \$5 million, net of estimated forfeitures, and the weighted average period over which it is expected to be recognized is 1.89 years.

As of December 31, 2006, the intrinsic value of the options outstanding was \$11.6 million, of which \$6.3 million related to vested options and \$5.3 million related to unvested options.

### ***Stock-Based Compensation Non-Employee Stock-Based Awards***

We occasionally grant stock option awards to consultants. Such grants are accounted for pursuant to EITF Issue No. 96-18, *Accounting for Equity Instruments That Are Issued to Other Than Employees for Acquiring, or in Conjunction with Selling, Goods or Services*, and, accordingly, we recognize compensation expense equal to the fair value of such awards and amortize such expense over the performance period. We estimate the fair value of each award using the Black-Scholes model. The unvested equity instruments are revalued on each subsequent reporting date until performance is complete, with an adjustment recognized for any changes in their fair value. We amortize expense related to non-employee stock options in accordance with FASB Interpretation 28, *Accounting for Stock Appreciation Rights and Other Variable Stock Option or Award Plans*.

Total compensation expense recorded in the accompanying statements of operations associated with consultant option grants was \$45,000, \$13,000 and \$12,000 for the years ended December 31, 2006, 2005 and 2004, respectively.

Also see Note 12 to our Financial Statements for additional information on Stock-Based Compensation.

**Table of Contents****Accrued Expenses**

As part of the process of preparing financial statements, we are required to estimate accrued expenses. This process involves identifying services which have been performed on our behalf and estimating the level of service performed and the associated cost incurred for such service as of each balance sheet date in our financial statements.

In accruing service fees, we estimate the time period over which services will be provided and the level of effort in each period. If the actual timing of the provision of services or the level of effort varies from the estimate, we will adjust the accrual accordingly. The majority of our service providers invoice us monthly in arrears for services performed. In the event that we do not identify costs that have begun to be incurred or we underestimate or overestimate the level of services performed or the costs of such services, our actual expenses could differ from such estimates. The date on which some services commence, the level of services performed on or before a given date and the cost of such services are often subjective determinations. We make judgments based upon facts and circumstances known to us in accordance with GAAP.

**Results of Operations**

Results of operations may vary from period to period depending on numerous factors, including the timing of payments received under existing or future strategic alliances, joint ventures or financings, if any, the progress of our research and development projects, technological advances and determinations as to the commercial potential of proposed products.

**Comparison of Years Ended December 31, 2006 and 2005**

**Revenue.** Revenue was \$3.3 million and \$8.5 million for the years ended December 31, 2006 and 2005, respectively. The decrease in revenue in 2006 is primarily due to a significant change in estimate of our remaining performance obligations as of December 31, 2006, under our collaboration with Gilead. In February 2007, we announced our decision to discontinue further development of ACH-806. We also revised our research program with Gilead to focus on next-generation NS4A antagonists. As a result, our efforts under the collaboration, which were previously estimated to be complete in March 2007, will extend through 2008. In addition, in March 2007, we and Gilead Sciences agreed to continue to equally share external costs, but that effective April 1, 2007, each party would bear the costs of their respective full-time equivalents. Accordingly, in the fourth quarter of 2006, we recorded a reduction of revenue under the cumulative catch-up method to reflect the Company's proportionate performance through December 31, 2006. This adjustment reflected our increased remaining performance obligations, which effectively reduced the proportion of our performance obligations that have been completed to date. Revenue consisted of the following:

	<b>Years Ended December 31,</b>		
	<b>2006</b>	<b>2005</b>	<b>Change</b>
		<b>(in thousands)</b>	
Amortization of up-front and milestone payments	\$ 1,511	\$ 4,328	\$ (2,817)
Cost-sharing revenue	1,468	3,949	(2,481)
Grant revenue	313	249	64
 Total revenue	 \$ 3,292	 \$ 8,526	 \$ (5,234)

Through the completion of our performance obligations in 2008, we expect to recognize additional revenue of approximately \$6.0 million, offset by any payments we are obligated to make to Gilead in satisfaction of external costs paid by Gilead under our external cost-sharing agreement. Our revenue recognized during the fourth quarter of 2006 was negative due primarily to the material change in estimate to our proportionate performance measure. It is possible that we will recognize negative revenue in future quarters based upon the timing of our performance under the collaboration, and on the timing and magnitude of external costs borne by Gilead.



**Table of Contents**

*Research and development expenses.* Research and development expenses were \$22.7 million and \$18.1 million for the years ended December 31, 2006 and 2005, respectively. The approximate \$4.6 million increase from 2005 to 2006 was the result of: (i) increased personnel costs for our research and development staff, including an increase in headcount as well as increased wages, combined with the recognition of non-cash stock based compensation required with our adoption of FAS 123R (see Note 11) (ii) the costs associated with three clinical trials using elvucitabine during 2006, as compared to one on-going trial in 2005, and (iii) the costs associated with proof-of-concept clinical development of ACH-806 in 2006 but not in 2005. We expect that research and development expenses will continue to increase as we complete our phase 2 clinical program for elvucitabine, enter human clinical trials for ACH-702, and continue our preclinical and research work for our NS4A antagonists. Research and development expenses for the years ended December 31, 2006 and 2005 are comprised as follows:

	Years Ended December 31,		
	2006	2005	Change
	(in thousands)		
Personnel costs	\$ 6,031	\$ 5,301	\$ 730
Stock based compensation	330	38	292
Outsourced research and supplies	11,758	8,227	3,531
Professional and consulting fees	1,525	1,410	115
Facilities costs	2,808	2,870	(62)
Travel and other costs	289	266	23
<b>Total</b>	<b>\$ 22,741</b>	<b>\$ 18,112</b>	<b>\$ 4,629</b>

*General and administrative expenses.* General and administrative expenses were \$4.9 and \$3.1 million for the years ended December 31, 2006 and 2005, respectively. The \$1.8 million increase from 2005 to 2006 was primarily due to increased professional fees, particularly legal and accounting fees associated with our status as a public company, combined with the recognition of non-cash stock based compensation required with our adoption of FAS 123R. We expect that general and administrative expenses will increase in the future due to increased payroll, expanded infrastructure, increased consulting, legal, accounting and investor relations expenses associated with being a public company. General and administrative expenses for the years ended December 31, 2006 and 2005 are comprised as follows:

	Years Ended December 31,		
	2006	2005	Change
	(in thousands)		
Personnel costs	\$ 1,785	\$ 1,803	\$ (18)
Stock based compensation	695	32	663
Professional and consulting fees	1,206	392	814
Facilities costs	811	627	184
Travel and other costs	368	247	121
<b>Total</b>	<b>\$ 4,865</b>	<b>\$ 3,101</b>	<b>\$ 1,764</b>

*Interest income (expense).* Interest income was \$1.1 million and \$0.2 million for the years ended December 31, 2006 and 2005, respectively. The \$0.9 million increase from 2005 to 2006 was primarily due to increased average cash balances due to the receipt of \$18.4 million in proceeds from our Series C-2 financing in March and May of 2006 and \$53.4 million in net proceeds from our initial public offering in October 2006. Interest expense was \$1.0 million and \$1.2 million for the years ended December 31, 2006 and 2005, respectively. The \$0.2 million decrease from 2005 to 2006 was primarily attributable to conversion of notes payable in November 2005, offset in part by interest expense on a debt facility entered into in December 2005 and May 2006.

**Table of Contents**

*Tax benefit.* The State of Connecticut provides companies with the opportunity to forego certain research and development tax credit carryforwards in exchange for cash. The program provides for such exchange of the research and development credits at a rate of 65% of the annual incremental and non-incremental research and development credits, as defined. The amount of tax benefit we recognized in connection with this exchange program was \$49,000 and \$88,000 for the years ended December 31, 2006 and 2005, respectively. The \$39,000 decrease from 2005 to 2006 was due to the specific types of research and development expenses incurred and the decreasing amount of such costs incurred within the State of Connecticut combined with a \$19,000 decrease in 2006 to account for 2005 expenses that were originally claimed but deemed unallowable.

*Accretion of preferred stock dividends.* Accretion of preferred stock dividends was \$4.1 million and \$2.9 million for the years ended December 31, 2006 and 2005, respectively. The \$1.2 million increase from 2005 to 2006 was due to an increased number of shares outstanding, particularly 23,425,462 shares of series C-2 convertible preferred stock issued in November 2005, March 2006 and May 2006, offset by the lack of dividends accrued during the last two months of 2006 following our initial public offering. Following conversion of the Company's preferred stock, there will be no further accretion of dividends (see Note 11).

**Comparison of Years Ended December 31, 2005 and 2004**

*Revenue.* Revenue was \$8.5 million and \$800,000 for the years ended December 31, 2005 and 2004, respectively. The \$7.7 million increase from 2004 to 2005 is due to recognition of a full year of collaboration and milestone revenue under the Gilead agreement. Revenue consisted of the following:

	Years Ended December 31,	
	2005	2004
	(in thousands)	
Amortization of up-front and milestone payments	\$ 4,328	\$ 446
Cost-sharing revenue	3,949	361
Grant revenue	249	
Total revenue	\$ 8,526	\$ 807

*Research and development expenses.* Research and development expenses were \$18.1 million and \$14.8 million for the years ended December 31, 2005 and 2004, respectively. The \$3.3 million increase from 2004 to 2005 was the result of: (i) the increased costs (\$1.0 million) associated with elvicitabine phase II clinical trials, (ii) the increased costs (\$1.8 million) associated with completing IND-enabling preclinical testing of our HCV candidate, ACH-806, as well as costs associated with phase I clinical testing of ACH-806 and (iii) the costs (\$495,000) associated with early preclinical toxicology research on our antibacterial candidate, ACH-702. In addition, we incurred increased costs associated with manufacturing and formulation of both elvicitabine and ACH-806. Research and development expenses for the years ended December 31, 2005 and 2004 are comprised as follows:

	Years Ended December 31,		
	2005	2004	Change
	(in thousands)		
Personnel costs	\$ 5,301	\$ 5,108	\$ 193
Outsourced research and supplies	8,227	5,200	3,027
Professional and consulting fees	1,448	1,131	317
Facilities costs	2,870	3,145	(275)
Travel and other costs	266	257	9
Total	\$ 18,112	\$ 14,841	\$ 3,271

**Table of Contents**

*General and administrative expenses.* General and administrative expenses were \$3.1 million and \$3.2 million for the years ended December 31, 2005 and 2004. The approximate \$80,000 decrease from 2004 to 2005 was primarily a result of reduced professional fees and travel and other costs, partially offset by an increase in personnel costs, specifically annual pay increases, and increased facility costs. General and administrative expenses for the years ended December 31, 2005 and 2004 are comprised as follows:

	Years Ended December 31,		Change
	2005	2004 (in thousands)	
Personnel costs	\$ 1,803	\$ 1,709	\$ 94
Professional and consulting fees	424	547	(123)
Facilities costs	627	584	43
Travel and other costs	247	341	(94)
Total	\$ 3,101	\$ 3,181	\$ (80)

*Interest income (expense).* Interest income was \$224,000 and \$84,000 for the years ended December 31, 2005 and 2004, respectively. The \$140,000 increase from 2004 to 2005 was primarily due to increased cash balances resulting from receipts from the issuance of convertible notes in 2004. Interest expense was \$1.2 million and \$593,000 for the years ended December 31, 2005, and 2004, respectively. The \$607,000 increase from 2004 to 2005 was primarily due to interest due on convertible promissory notes issued in 2004, outstanding for eleven months during 2005 as compared to five months in 2004.

*Tax benefit.* The amount of tax benefit we recognized in connection with the State of Connecticut research and development exchange program was \$88,000 and \$264,000 for the years ended December 31, 2005 and 2004, respectively. The \$176,000 decrease from 2004 to 2005 was due to the specific types of research and development expenses incurred and the decreasing amount of such costs incurred within the State of Connecticut, as well as the partial reimbursement of expenses by Gilead Sciences.

*Accretion of preferred stock dividends.* Accretion of preferred stock dividends was \$2.9 million and \$2.6 million for the years ended December 31, 2005 and 2004, respectively. The \$351,000 increase from 2004 to 2005 was due to the issuance of Series C-1 convertible preferred stock in November 2004, which was outstanding for the entire period in 2005, as well as the issuance of Series C-2 convertible preferred stock in November 2005.

**Liquidity and Capital Resources**

Since our inception in August 1998, we have financed our operations primarily through the issuance of our convertible preferred stock and borrowings under debt facilities, as well as through receipts from our collaboration with Gilead Sciences. Through December 31, 2006, we had received approximately \$161.2 million in aggregate net proceeds from stock issuances, \$16.5 million from Gilead Sciences under our collaboration agreement with them and approximately \$15.9 million under the following debt facilities:

Lender	Date	Interest Rate (per annum)	Principal		Maturity Date
			Amount		
Connecticut Innovations, Inc.	November 2000	7.5%	\$ 1,400,000		September 2010
Connecticut Innovations, Inc.	May 2002	7.5%	\$ 278,000		October 2007
General Electric Capital Corporation	March 2002	8.01% 10.17%	\$ 3,264,182		March 2005 May 2007
Webster Bank	May 2003	6.72% 9.27%	\$ 972,185		June 2006 Dec 2009
Oxford Finance Corporation	December 2005	10.92%	\$ 2,500,000		November 2008
General Electric Capital Corporation	December 2005	10.92%	\$ 2,500,000		November 2008
Oxford Finance Corporation	May 2006	11.56%	\$ 2,500,000		April 2009
General Electric Capital Corporation	May 2006	11.56%	\$ 2,500,000		April 2009

## **Table of Contents**

Please see note 10 to the financial statements for additional information regarding our debt facilities.

We had \$62.6 million, \$9.6 million and \$14.4 million in cash, cash equivalents and marketable securities as of December 31, 2006, 2005 and 2004, respectively. On May 12, 2006, we received \$13.8 million in gross proceeds from the sale of 9,166,167 additional shares of our series C-2 convertible preferred stock at \$1.50 per share, and \$5.0 million in proceeds from the issuance of promissory notes under existing debt facilities. In October 2006, we received \$53.4 million in net proceeds from our initial public offering of 5,175,000 shares of common stock, at a public offering price of \$11.50 per share.

Cash used in operating activities was \$21.1 million for the year ended December 31, 2006 and was primarily attributable to our \$24.1 million net loss, offset by our \$1.7 million increase in accounts payable and \$1.8 million in non-cash charges related to depreciation, amortization and non-cash stock based compensation. Cash used in operating activities was \$14.0 million for the year ended December 31, 2005 and was primarily attributable to our \$13.6 million net loss and the \$2.3 million amortization of deferred revenue, offset somewhat by \$2.1 million in non-cash charges such as depreciation, amortization and non-cash interest expense.

Cash used in investing activities was \$40.1 million for the year ended December 31, 2006 and was primarily attributable to the purchase of marketable securities. Cash provided by investing activities was \$4.9 million for the year ended December 31, 2005 and was primarily attributable to the maturity of marketable securities.

Cash provided by financing activities was \$74.3 million for the year ended December 31, 2006 and was primarily attributable to \$18.2 million in proceeds from the sale of 12,270,815 shares of our Series C-2 Preferred Stock, \$53.4 million in net proceeds from our initial public offering of 5,175,000 shares of common stock and \$5.4 million in proceeds from the issuance of debt, offset by \$3 million used for repayments of debt. Cash provided by financing activities was \$9.3 million for the year ended December 31, 2005 and was primarily attributable to the receipt of \$5.3 million in proceeds from the sale of 3,562,508 shares of series C-2 convertible preferred stock, as well as the receipt of proceeds under a debt facility.

We expect to incur continuing and increasing losses from operations for at least the next several years as we seek to:

Complete our phase II clinical trials for elvucitabine and, if supported by favorable data from the phase II trials, initiate phase III clinical trials;

Advance ACH-702 through preclinical testing and early clinical testing;

Advance our NS4A antagonist program for HCV infection; and

Identify additional drug candidates.

We do not expect our existing capital resources, together with the milestone payments and research and development funding we expect to receive, to be sufficient to fund the completion of the development of any of our drug candidates. As a result, we expect that we will need to raise additional funds prior to being able to market any drug candidates, to, among other things, obtain regulatory approvals, fund operating losses, and, if deemed appropriate, establish manufacturing and sales and marketing capabilities. We will seek to raise such additional financing through public or private equity or debt financings, collaborative or other arrangements with third parties or through other sources of financing.

We believe that our existing cash and cash equivalents, as supplemented by research funding pursuant to our collaboration with Gilead Sciences, will be sufficient to meet our projected operating requirements for at least the next twelve months. However, our funding requirements may change and will depend upon numerous factors, including but not limited to:

the progress of our research and development programs;

the timing and results of preclinical testing and clinical studies;

**Table of Contents**

the receipt and timing of regulatory approvals, if any;

determinations as to the commercial potential of our proposed products;

the status of competitive products;

our ability to establish and maintain collaborative arrangements with others for the purpose of funding certain research and development programs;

the acquisition of technologies or drug candidates; and

our participation in the manufacture, sale and marketing of any approved drugs.

We received net proceeds of \$53.4 million from our initial public offering. We expect to use the majority of the net proceeds of this offering as follows:

approximately \$20.7 million to complete the current phase II clinical trials of elvucitabine and to further our clinical development into phase III clinical trials, including approximately \$3.7 million of external costs related to current phase II clinical trials.

approximately \$1.5 million to complete the preclinical development of ACH-702, followed by approximately \$11.5 million to fund further clinical development of ACH-702;

approximately \$3.7 million to support our share of HCV program development external costs pursuant to our collaboration with Gilead Sciences through the proof-of-concept stage of one compound; and

approximately \$19.3 million to support research activities over the next 24 months on other HIV, chronic hepatitis C and antibacterial drug candidates.

We anticipate that we will augment our cash balance through financing transactions, including the issuance of debt or equity securities and further corporate alliances. No arrangements have been entered into for any future financing, and there can be no assurance that we will be able to obtain adequate levels of additional funding or favorable terms, if 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;

reduce our planned commercialization efforts;

obtain funds through arrangements with collaborators or others on terms unfavorable to us or that may require us to relinquish rights to certain drug candidates that we might otherwise seek to develop or commercialize independently; and/or

pursue merger or acquisition strategies.

Additionally, any future equity funding may dilute the ownership of our equity investors.

#### **Off-Balance Sheet Arrangements**

We do not have any off-balance sheet arrangements or relationships with unconsolidated entities or financial partnerships, such as entities often referred to as structured finance or special purpose entities.

**Table of Contents****Contractual Obligations and Commitments**

The following table sets forth a summary of our commitments as of December 31, 2006:

	Total	Payment Due by Period			
		Less Than 1 Year	1-3 Years (in thousands)	3-5 Years	More than 5 Years
Long-term debt, including interest	\$ 10,478	\$ 4,374	\$ 5,315	\$ 789	\$
Operating lease obligations	3,586	960	1,967	659	
Clinical research obligations	5,959	5,959			
Other research obligations and licenses	3,533	2,842	586	105	
<b>Total</b>	<b>\$ 23,556</b>	<b>\$ 14,135</b>	<b>\$ 7,868</b>	<b>\$ 1,553</b>	<b>\$</b>

The above amounts exclude potential payments that are based on the progress of our drug candidates in development, to be made under our license agreements, as these payments are not yet determinable.

**Recently Issued Accounting Pronouncements**

In July 2006, the FASB issued Interpretation No. 48, *Accounting for Uncertainty in Income Taxes* an interpretation of FASB Statement No. 109 ( *FIN 48* ). FIN 48 prescribes a comprehensive model for how a company should recognize, measure, present, and disclose in its financial statements uncertain tax positions that the company has taken or expects to take on a tax return (including a decision whether to file or not file a return in a particular jurisdiction). Under FIN 48, the financial statements will reflect expected future tax consequences of such positions presuming the taxing authorities' full knowledge of the position and all relevant facts, but without considering time values. FIN 48 substantially changes the applicable accounting model and is likely to cause greater volatility in income statements as more items are recognized discretely within income tax expense. FIN 48 also revises disclosure requirements and introduces a prescriptive, annual tabular rollforward of the unrecognized tax benefits. FIN 48 is effective for the Company beginning January 1, 2007. The Company is evaluating the impact of adopting FIN 48 on our financial position and results of operations and currently anticipates an increase to retained earnings based on the cumulative effect of approximately \$180,000 from adoption.

In September 2006, the FASB issued SFAS No. 157, *Fair Value Measurements*. SFAS No. 157 defines fair value, establishes a framework for measuring fair value in generally accepted accounting principles, and expands disclosures about fair value measurements. The standard is effective for financial statements issued for fiscal years beginning after November 15, 2007 and interim periods within those fiscal years. The Company does not believe that its adoption in the first quarter of 2008 will have a material impact on the Company's financial statements.

In September 2006, the SEC issued Staff Accounting Bulletin No. 108, *Considering the Effects of Prior year Misstatements when Quantifying Misstatements in Current Year Financial Statements* ( *SAB 108* ). SAB 108 provides interpretive guidance on how the effects of the carryover or reversal of prior year misstatements should be considered in quantifying a current year misstatement. The SEC staff believes that registrants should quantify errors using both a balance sheet and an income statement approach and evaluate whether either approach results in quantifying a misstatement that, when all relevant quantitative and qualitative factors are considered, is material. The adoption of SAB 108 had no effect on the Company's financial statements for the year ending December 31, 2006.

In February 2007, the FASB issued SFAS No. 159, *The Fair Value Option for Financial Assets and Financial Liabilities*. SFAS No. 159 permits an entity to elect to report many financial assets and liabilities at fair value. Entities electing the fair value option would be required to recognize changes in fair value in earnings and are required to distinguish, on the face of the statement of financial position, the fair value of assets and liabilities



**Table of Contents**

for which the fair value option has been elected and similar assets and liabilities measured using another measurement attribute. The initial adjustment to reflect the difference between the fair value and the carrying amount would be accounted for as a cumulative-effect adjustment to retained earnings as of the date of initial adoption. SFAS No. 159 is effective as of the beginning of an entity's first fiscal year beginning after November 15, 2007. The Company is currently evaluating the impact, if any, of FAS 159 on our Financial Statements.

**ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK**

*Interest Rate Risk.* Our exposure to market risk is confined to our cash, cash equivalents and marketable securities. We invest in high-quality financial instruments, primarily money market funds, federal agency notes, asset backed securities, corporate debt securities and U.S. treasury notes, with the effective duration of the portfolio less than six months and no security with an effective duration in excess of 12 months, which we believe are subject to limited credit risk. We currently do not hedge interest rate exposure. Due to the short-term nature of our investments, we do not believe that we have any material exposure to interest rate risk arising from our investments.

*Capital Market Risk.* We currently have no product revenues and depend on funds raised through other sources. One source of funding is through further equity offerings. Our ability to raise funds in this manner depends upon capital market forces affecting our stock price.

## **Table of Contents**

### **ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA**

The information required by this Item is included in our Financial Statements and Supplementary Data listed in Item 15 of Part IV of this annual report on Form 10-K.

### **ITEM 9. CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURE**

None.

### **ITEM 9A(T). CONTROLS AND PROCEDURES**

Our management, with the participation of our chief executive officer and vice president of finance and treasurer, evaluated the effectiveness of our disclosure controls and procedures as of December 31, 2006. The term "disclosure controls and procedures," as defined in Rules 13a-15(e) and 15d-15(e) under the Exchange Act, means controls and other procedures of a company that are designed to ensure that information required to be disclosed by a company in the reports that it files or submits under the Exchange Act is recorded, processed, summarized and reported, within the time periods specified in the SEC's rules and forms. Disclosure controls and procedures include, without limitation, controls and procedures designed to ensure that information required to be disclosed by a company in the reports that it files or submits under the Exchange Act is accumulated and communicated to the company's management, including its principal executive and principal financial officers, as appropriate to allow timely decisions regarding required disclosure. Management recognizes that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving their objectives and management necessarily applies 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 December 31, 2006, the Company's chief executive officer and chief financial officer concluded that, as of such date, our disclosure controls and procedures were effective at the reasonable assurance level.

This annual report does not include a report of management's assessment regarding internal control over financial reporting or an attestation report of the company's registered public accounting firm due to a transition period established by rules of the Securities and Exchange Commission for newly public companies.

No change in our internal control over financial reporting occurred during the fiscal quarter ended December 31, 2006 that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

### **ITEM 9B. OTHER INFORMATION**

On March 26, 2007, we and Gilead Sciences, Inc. amended our Research Collaboration and License Agreement, dated November 24, 2004. The amendment provides that from April 1, 2007 through the date proof-of-concept is achieved, each of Achillion and Gilead will bear 50% of the external research costs incurred by both parties under the collaboration agreement and each of Achillion and Gilead will bear its own personnel costs. Prior to April 1, 2007, the agreement provides for the equal sharing of both external research costs and personnel costs by Achillion and Gilead.

A copy of the amendment is attached to this annual report on Form 10-K as Exhibit 10.2.

**Table of Contents**

**PART III**

**ITEM 10. DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE**

We will file with the Securities and Exchange Commission a definitive Proxy Statement, which we refer to herein as the Proxy Statement, not later than 120 days after the close of the fiscal year ended December 31, 2006. The information required by this item is incorporated herein by reference to the information contained under the sections captioned Proposal One Election of Class I Directors, Section 16(a) Beneficial Ownership Reporting Compliance and Corporate Governance of the Proxy Statement. The information required by this item relating to executive officers is included in Part I, Item 1 Business- Executive Officers of the Registrant of this Annual Report on Form 10-K.

We have adopted a written code of business conduct and ethics, which applies to our principal executive officer, principal financial or accounting officer or person serving similar functions and all of our other employees and members of our board of directors. The text of our amended code of ethics is available on our website at [www.achillion.com](http://www.achillion.com). We did not waive any provisions of the code of business ethics during the year ended December 31, 2006. If we amend, or grant a waiver under, our code of business ethics that applies to our principal executive officer, principal financial or accounting officer, or persons performing similar functions, we intend to post information about such amendment or waiver on our website at [www.achillion.com](http://www.achillion.com).

**ITEM 11. EXECUTIVE COMPENSATION**

The information required by this item is incorporated herein by reference to the information contained under the sections captioned Executive Compensation, Compensation of Directors, Compensation Committee Interlocks and Insider Participation and Employment Arrangements of the Proxy Statement.

**ITEM 12. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED STOCKHOLDER MATTERS**

The information required by this item is incorporated herein by reference to the information contained under the sections captioned Security Ownership of Certain Beneficial Owners and Management and Equity Compensation Plan Information of the Proxy Statement.

**ITEM 13. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS, AND DIRECTOR INDEPENDENCE**

The information required by this item is incorporated herein by reference to the information contained under the sections captioned Employment Arrangements and Certain Relationships and Related Transactions of the Proxy Statement.

**ITEM 14. PRINCIPAL ACCOUNTANT FEES AND SERVICES**

The information required by this item is incorporated herein by reference to the information contained under the sections captioned Principal Accountant Fees and Services and Pre-Approval Policies and Procedures of the Proxy Statement.

**Table of Contents**

**PART IV**

**ITEM 15. EXHIBITS AND FINANCIAL STATEMENT SCHEDULES**

(a) (1) Financial Statements

The following documents are included on pages F-1 through F-30 attached hereto and are filed as part of this annual report on Form 10-K.

Report of Independent Registered Public Accounting Firm Balance Sheets as of December 31, 2006 and 2005

Statements of Operations and Comprehensive Loss for the Years Ended December 31, 2006, 2005 and 2004

Statements of Changes in Redeemable Convertible Preferred Stock and Stockholders' Equity (Deficit) for the Years Ended December 31, 2004, 2005 and 2006

Statements of Cash Flows for the Years Ended December 31, 2006, 2005 and 2004

Notes to Financial Statements

(a) (2) Financial Statement Schedules

Not applicable

(a) (3) List of Exhibits

The exhibits which are filed with this report or which are incorporated herein by reference are set forth in the Exhibit Index hereto.

**Table of Contents****SIGNATURES**

Pursuant to the requirements of Section 13 or 15(d) 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, on March 29, 2007.

**ACHILLION PHARMACEUTICALS, INC.**

By: /s/ MICHAEL D. KISHBAUCH  
**Michael D. Kishbauch**  
**President and Chief Executive Officer**

Pursuant to the requirements of the Securities Exchange Act of 1934, the Report has been signed below by the following persons on behalf of the Registrant and in the capacities indicated as of March 29, 2007.

<b>Signature</b>	<b>Title</b>	<b>Date</b>
/s/ MICHAEL D. KISHBAUCH  <b>Michael D. Kishbauch</b>	President and Chief Executive Officer and Director (Principal executive officer)	March 29, 2007
/s/ MARY KAY FENTON  <b>Mary Kay Fenton</b>	Vice President and Chief Financial Officer (Principal financial and accounting officer)	March 29, 2007
/s/ JAMES GARVEY  <b>James Garvey</b>	Director	March 29, 2007
/s/ JASON FISHERMAN, M.D.  <b>Jason Fisherman, M.D.</b>	Director	March 29, 2007
/s/ JEAN-FRANCOIS FORMELA  <b>Jean-francois Formela</b>	Director	March 29, 2007
/s/ MICHAEL GREY  <b>Michael Grey</b>	Director	March 29, 2007
/s/ DAVID SCHEER  <b>David Scheer</b>	Director	March 29, 2007
/s/ STEFAN RYSER, PH.D.  <b>Stefan Ryser, Ph.D.</b>	Director	March 29, 2007
/s/ CHRISTOPHER WHITE  <b>Christopher White</b>	Director	March 29, 2007

**Table of Contents**

**INDEX TO FINANCIAL STATEMENTS**

<b><u>Report of Independent Registered Public Accounting Firm</u></b>	<b>Page</b> F-2
<b><u>Financial Statements:</u></b>	
<u>Balance Sheets at December 31, 2006 and 2005</u>	F-3
<u>Statements of Operations for the Years Ended December 31, 2006, 2005 and 2004</u>	F-4
<u>Statements of Stockholders' Equity (Deficit) for the Years Ended December 31, 2004, 2005 and 2006</u>	F-5
<u>Statements of Cash Flows for the Years Ended December 31, 2006, 2005 and 2004</u>	F-6
<b><u>Notes to Financial Statements</u></b>	F-7

**Table of Contents**

**Report of Independent Registered Public Accounting Firm**

To Board of Directors and Stockholders

of Achillion Pharmaceuticals, Inc.:

In our opinion, the accompanying balance sheets and the related statements of operations, of stockholders' equity (deficit) and of cash flows, present fairly, in all material respects, the financial position of Achillion Pharmaceuticals, Inc. at December 31, 2006 and 2005, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2006 in conformity with accounting principles generally accepted in the United States of America. These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these financial statements based on our audits. We conducted our audits of these statements in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements, assessing the accounting principles used and significant estimates made by management, and evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

As discussed in Note 3 to the financial statements, the Company changed the manner in which it accounts for share-based compensation in 2006.

/s/ PricewaterhouseCoopers LLP

Hartford, Connecticut

March 28, 2007

F-2

**Table of Contents****Achillion Pharmaceuticals, Inc.****Balance Sheets****(in thousands, except per share amounts)**

	<b>As of December 31,</b>	
	<b>2006</b>	<b>2005</b>
<b>Assets</b>		
Current assets:		
Cash and cash equivalents	\$ 22,662	\$ 9,583
Marketable securities	39,904	
Accounts receivable	796	761
Prepaid expenses and other current assets	1,502	707
Total current assets	64,864	11,051
Fixed assets, net	1,966	2,295
Deferred financing costs	59	94
Restricted cash	257	310
Total assets	\$ 67,146	\$ 13,750
<b>Liabilities, Redeemable Convertible Preferred Stock and Stockholders (Deficit) Equity</b>		
Current liabilities:		
Current portion of long-term debt	\$ 3,572	\$ 2,083
Accounts payable	2,633	896
Accrued expenses	2,639	2,216
Deferred revenue	2,830	5,202
Total current liabilities	11,674	10,397
Long-term debt, net of current portion	5,327	4,373
Accrued expenses, net of current portion	340	447
Deferred revenue	2,435	
Other long-term liabilities		201
Total liabilities	19,776	15,418
Commitments (Notes 13 and 14)		
Redeemable Convertible Preferred Stock:		
Series A Preferred Stock, \$.01 par value; 250 shares authorized; 0 and 250 shares issued and outstanding at December 31, 2006 and 2005, respectively		250
Series B Preferred Stock, \$.01 par value; 15,817 shares; 0 and 15,817 shares issued and outstanding at December 31, 2006 and 2005, respectively		27,893
Series C Preferred Stock, \$.01 par value; 22,436 shares authorized; 0 and 22,418 shares issued and outstanding at December 31, 2006 and 2005, respectively		47,128
Series C-1 Preferred Stock, \$.01 par value; 2,300 shares authorized; 0 and 2,300 shares issued and outstanding at December 31, 2006 and 2005, respectively		2,241
Series C-2 Preferred Stock, \$.01 par value; 20,334 and 24,000 shares authorized; 0 and 11,155 shares issued and outstanding at December 31, 2006 and 2005, respectively		16,842
		94,354

Stockholders' Equity (Deficit):



# Edgar Filing: ACHILLION PHARMACEUTICALS INC - Form 10-K

Preferred Stock, undesignated, \$.01 par value; 5,000 shares authorized at December 31, 2006; no shares issued or outstanding		
Common Stock, \$.001 par value; 100,000 and 85,000 shares authorized at December 31, 2006 and 2005; 15,535 and 513 shares issued and outstanding at December 31, 2006 and 2005, respectively	16	4
Additional paid-in capital	170,650	
Stock warrants	644	341
Stock subscription receivable	(50)	(181)
Accumulated deficit	(123,908)	(96,186)
Unrealized gain on marketable securities	18	
Total stockholders' equity (deficit)	47,370	(96,022)
Total liabilities and stockholders' equity (deficit)	\$ 67,146	\$ 13,750

*The accompanying notes are an integral part of these financial statements.*

F-3

**Table of Contents****Achillion Pharmaceuticals, Inc.****Statements of Operations****(in thousands, except per share amounts)**

	<b>Years Ended December 31,</b>		
	<b>2006</b>	<b>2005</b>	<b>2004</b>
Revenue	\$ 3,292	\$ 8,526	\$ 807
Operating expenses			
Research and development	22,741	18,112	14,841
General and administrative	4,865	3,101	3,181
Total operating expenses	27,606	21,213	18,022
Loss from operations	(24,314)	(12,687)	(17,215)
Other income (expense)			
Interest income	1,144	224	84
Interest expense	(965)	(1,200)	(593)
Net loss before tax benefits	(24,135)	(13,663)	(17,724)
Tax benefit	49	88	264
Net loss	(24,086)	(13,575)	(17,460)
Accretion of preferred stock dividends	(4,163)	(2,939)	(2,588)
Loss attributable to common stockholders	\$ (28,249)	\$ (16,514)	\$ (20,048)
Basic and diluted net loss per share attributable to common stockholders (Note 4)	\$ (9.35)	\$ (32.96)	\$ (43.77)
Weighted average shares used in computing basic and diluted net loss per share attributable to common stockholders	3,022	501	458

*The accompanying notes are an integral part of these financial statements.*

**Table of Contents****Achillion Pharmaceuticals, Inc.****Statements of Stockholders' Equity (Deficit) for the Years Ended December 31, 2004, 2005 and 2006**

(in thousands)

	Common Stock		Additional	Stock	Stock	Deferred	Accumulated	Unrealized	Total
	Shares	Amount	Paid-In	Warrants	Subscription	Compensation	Deficit	Gain	Stockholders
			Capital		Receivable			(Loss)	Equity
									(Deficit)
Balances at December 31, 2003	499	4		127	(318)	(4)	(59,781)		(59,972)
Amortization of stock-based deferred compensation						4			4
Stock compensation			8						8
Warrants issued in connection with debt financing				302					302
Exercise of stock options	1		1		36				37
Repurchase and settlement of restricted common stock	(4)		(7)						(7)
Expiration of warrants			37	(37)					
Convertible preferred stock dividends			(39)				(2,549)		(2,588)
Unrealized (loss) on marketable securities								(3)	(3)
Net (loss)							(17,460)		(17,460)
Balances at December 31, 2004	496	4		392	(282)		(79,790)	(3)	(79,679)
Stock compensation			70						70
Exercise of stock options	16		26						26
Repayment of stock subscriptions receivable	1				101				101
Expiration of warrants			22	(22)					
Reclassification of preferred stock warrants in accordance with FSP 150-5				(29)					(29)
Convertible preferred stock dividends			(118)				(2,821)		(2,939)
Unrealized gain on marketable securities								3	3
Net (loss)							(13,575)		(13,575)
Balances at December 31, 2005	513	4		341	(181)		(96,186)		(96,022)
Stock compensation			1,025						1,025
Exercise of stock options	13	1	21						22
Conversion of preferred warrants to common warrants				303					303
Repayment of stock subscriptions receivable					131				131
Issuance of common stock in initial public offering, net of issuance costs of \$1,900	5,175	5	53,395						53,400
Conversion of preferred stock into common stock	9,834	6	116,736						116,742
Convertible preferred stock dividends			(527)				(3,636)		(4,163)
Unrealized gain on marketable securities								18	18
Net (loss)							(24,086)		(24,086)
Balances at December 31, 2006	15,535	\$ 16	\$ 170,650	\$ 644	\$ (50)	\$	\$ (123,908)	\$ 18	\$ 47,370

*The accompanying notes are an integral part of these financial statements.*

F-5

**Table of Contents****Achillion Pharmaceuticals, Inc.****Statements of Cash Flows****(in thousands)**

	<b>Years Ended December 31,</b>		
	<b>2006</b>	<b>2005</b>	<b>2004</b>
<b>Cash flows from operating activities</b>			
Net loss	\$ (24,086)	\$ (13,575)	\$ (17,460)
Adjustments to reconcile net loss to net cash used in operating activities:			
Depreciation and amortization	785	1,079	1,288
Noncash stock-based compensation	1,025	70	12
Noncash interest expense		977	303
Noncash interest income on debt warrant adjustment	24		
Loss on disposal of equipment	3		
Amortization of premium on securities	(173)		
Changes in operating assets and liabilities:			
Accounts receivable	(35)	(399)	(362)
Prepaid expenses and other current assets	(783)	236	328
Account payable	1,737	(664)	589
Accrued expenses and other liabilities	317	590	926
Deferred revenue	63	(2,328)	7,530
Net cash (used in) operating activities	(21,123)	(14,014)	(6,846)
<b>Cash flows from investing activities</b>			
Purchase of property and equipment	(436)	(98)	(94)
Release of restriction on cash	53	52	52
Purchase of marketable securities	(40,713)		(4,899)
Maturities of marketable securities	1,000	4,900	1,750
Net cash provided by (used in) investing activities	(40,096)	4,854	(3,191)
<b>Cash flows from financing activities</b>			
Proceeds from issuance of Series C-1 Preferred Stock			2,024
Proceeds from issuance of Series C-2 Preferred Stock, net of issuance costs of \$182	18,224	5,287	
Proceeds from issuance of Common Stock in initial public offering, net of issuance costs of \$1,900	53,400		
Proceeds from exercise of stock options	23	26	30
Proceeds from repayment of stock subscription receivable	131	101	
Borrowings under notes payable	5,381	5,151	10,501
Repayments of notes payable	(2,861)	(1,178)	(1,232)
Payment of deferred financing costs		(125)	(48)
Net cash provided by financing activities	74,298	9,262	11,275
Net increase in cash and cash equivalents	13,079	102	1,238
Cash and cash equivalents, beginning of period	9,583	9,481	8,243
Cash and cash equivalents, end of period	\$ 22,662	\$ 9,583	\$ 9,481
<b>Supplemental disclosure of cash flow information</b>			
Cash paid for interest	\$ 847	\$ 179	\$ 290
Cash received from tax credits	\$ 336	\$	\$ 993

**Supplemental disclosure of noncash financing activities**

Issuance of warrants in connection with debt financing	\$ 174	\$ 174	\$ 302
Conversion of notes payable to Series C-2 Preferred Stock	\$	\$ 11,388	\$
Conversion of Preferred stock into Common stock in connection with initial public offering	\$ 116,742	\$	\$
Conversion of preferred warrants to common warrants	\$ 303	\$	\$

*The accompanying notes are an integral part of these financial statements.*

F-6

## **Table of Contents**

### **Achillion Pharmaceuticals, Inc.**

#### **Notes to Financial Statements**

**(in thousands, except per share amounts)**

#### **1. Nature of the Business**

Achillion Pharmaceuticals, Inc. (the Company) was incorporated on August 17, 1998 in Delaware. The Company was established to discover, develop and commercialize innovative anti-infective drug therapies. The Company is devoting substantially all of its efforts towards product research and development.

The Company incurred losses of \$109,866 from inception through December 31, 2006 and had an accumulated deficit of \$123,908 through December 31, 2006. The Company has funded our operations primarily through the sale of equity securities, borrowings from debt facilities, and the receipt of milestone and cost-sharing receipts from our collaboration partner, Gilead Sciences.

The Company expects to incur substantial and increasing losses for at least the next several years and will need substantial additional financing to obtain regulatory approvals, fund operating losses, and, if deemed appropriate, establish manufacturing and sales and marketing capabilities, which we will seek to raise through public or private equity or debt financings, collaborative or other arrangements with third parties or through other sources of financing. There can be no assurance that such funds will be available on terms favorable to us, if at all. In addition to the normal risks associated with early-stage companies, there can be no assurance that we will successfully complete our research and development, obtain adequate patent protection for our technology, obtain necessary government regulatory approval for drug candidates we develop or that any approved drug candidates will be commercially viable. In addition, we may not be profitable even if we succeed in commercializing any of our drug candidates.

#### **2. Initial Public Offering**

In October 2006, the Company completed an initial public offering of 5,175 shares of its common stock, including the underwriters overallotment option that closed in November 2006, at a public offering price of \$11.50 per share. Net proceeds to the Company were approximately \$53,400, after deducting underwriting discounts and commissions and offering expenses.

In connection with the initial public offering, the outstanding shares of Series A, Series B, Series C, Series C-1 and Series C-2 Convertible Preferred Stock (the Preferred Stock) were converted into 9,834 shares of common stock, including shares issued in satisfaction of \$15,400 of accrued but unpaid dividends on the Preferred Stock as of October 31, 2006, the closing date of the initial public offering transaction. The outstanding warrants to purchase Series C preferred stock were automatically converted into warrants to purchase 3 shares of the Company's common stock at an exercise price of \$12.11 per share, and outstanding warrants to purchase Series C-2 preferred stock were automatically converted into warrants to purchase 42 shares of the Company's common stock at an exercise price of \$12.00 per share (see Note 11).

#### **3. Summary of Significant Accounting Policies**

##### ***Use of Estimates***

The preparation of financial statements in conformity with accounting principles generally accepted in the United States requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates.

**Table of Contents*****Revenue Recognition***

The Company recognizes revenue from contract research and development and research progress payments in accordance with Staff Accounting Bulletin ( SAB ), No. 104, *Revenue Recognition* ( SAB 104 ) and Financial Accounting Standards Board ( FASB ), Emerging Issue Task Force Issue No. 00-21, *Accounting for Revenue Arrangements with Multiple Deliverables* ( EITF 00-21 ). Revenue-generating research and development collaborations are often multiple element arrangements, providing for a license as well as research and development services. Such arrangements are analyzed to determine whether the deliverables, including research and development services, can be separated or whether they must be accounted for as a single unit of accounting in accordance with EITF 00-21. The Company recognizes upfront license payments as revenue upon delivery of the license only if the license has standalone value and the fair value of the undelivered performance obligations can be determined. If the fair value of the undelivered performance obligations can be determined, such obligations would then be accounted for separately as performed. If the license is considered to either (i) not have standalone value or (ii) have standalone value but the fair value of any of the undelivered performance obligations cannot be determined, the arrangement would then be accounted for as a single unit of accounting and the upfront license payments are recognized as revenue over the estimated period of when the Company's performance obligations are performed.

When the Company determines that an arrangement should be accounted for as a single unit of accounting, it must determine the period over which the performance obligations will be performed and revenue related to upfront license payments will be recognized. Revenue will be recognized using either a proportionate performance or straight-line method. The Company recognizes revenue using the proportionate performance method provided that it can reasonably estimate the level of effort required to complete its performance obligations under an arrangement and such performance obligations are provided on a best-efforts basis. Direct labor hours or full-time equivalents are typically used as the measure of performance. Under the proportionate performance method, periodic revenue related to upfront license payments is recognized as the percentage of actual effort expended in that period to total effort expected for all of the Company's performance obligations under the arrangement. Significant management judgment is required in determining the level of effort required under an arrangement and the period over which the Company expects to complete the related performance obligations. In the event that a change in estimate occurs, the change will be accounted for using the cumulative catch-up method which provides for an adjustment to revenue in the current period. Estimates of our level of effort may change in the future, resulting in a material change in the amount of revenue recognized in future periods. We experienced a material change in estimate to reflect increased future costs during our 2006 fourth quarter, which resulted in a cumulative decrease to revenue in the quarter (see Note 18).

Collaborations may also involve substantive milestone payments. Substantive milestone payments are considered to be performance bonuses that are recognized upon achievement of the milestone only if all of the following conditions are met: (1) the milestone payments are non-refundable, (2) achievement of the milestone involves a degree of risk and was not reasonably assured at the inception of the arrangement, (3) substantive effort is involved in achieving the milestone, (4) the amount of the milestone payment is reasonable in relation to the effort expended or the risk associated with achievement of the milestone and (5) a reasonable amount of time passes between the upfront license payment and the first milestone payment as well as between each subsequent milestone payment (the Substantive Milestone Method ).

Reimbursement of costs is recognized as revenue provided the provisions of EITF Issue No. 99-19 are met, the amounts are determinable and collection of the related receivable is reasonably assured.

The Company also recognizes revenue from the National Institutes of Health ( NIH ), which is used to subsidize certain of our research projects. NIH grant revenue is recognized as efforts are expended and as eligible project costs are incurred. We perform work under the NIH grants on a best-effort basis.



## **Table of Contents**

### ***Stock-Based Compensation Employee Stock-Based Awards***

Through December 31, 2005, the Company accounted for grants of stock options and restricted stock utilizing the intrinsic value method in accordance with Accounting Principle Board ( APB ) Opinion No. 25, *Accounting for Stock Issued to Employees* ( APB 25 ), and, accordingly, recognized no compensation expense for an option when the option had an exercise price equal to or greater than the fair market value at the date of grant. Under APB 25, compensation expense was computed to the extent that fair market value of the underlying stock on the date of grant exceeded the exercise price of the employee stock option or stock award. Compensation so computed was then recognized on a straight-line basis over the vesting period. Through December 31, 2005, the Company had adopted the disclosure-only provisions of SFAS No. 123, *Accounting for Stock-Based Compensation*, as amended by SFAS No. 148, *Accounting for Stock Based Compensation Transition and Disclosure* ( SFAS No. 148 ).

Effective January 1, 2006, the Company adopted SFAS 123R, *Share-Based Payment* , which requires measurement and recognition of compensation expense for all stock-based awards made to employees and directors, including employee stock options and employee stock purchases under our 2006 Employee Stock Purchase Plan based on estimated fair values. SFAS 123R supersedes our previous method of accounting under APB 25. In March 2005, the Securities and Exchange Commission issued Staff Accounting Bulletin No. 107 ( SAB 107 ) providing supplemental guidance for SFAS 123R implementation. The Company has applied the provisions of SAB 107 in our adoption of SFAS 123R.

Upon adoption of SFAS 123R, the Company selected the Black-Scholes option pricing model as the most appropriate method for determining the estimated fair value for stock-based awards. The Black-Scholes model requires the use of assumptions which determine the fair value of the stock-based awards. Determining the fair value of stock-based awards at the grant date requires judgment, including estimating the expected term of stock options, the expected volatility of our stock and expected dividends. In addition, the Company previously accounted for forfeitures as they occurred. In accordance with SFAS 123R, the Company is required to estimate forfeitures at the grant date and recognize compensation costs for only those awards that are expected to vest. Judgment is required in estimating the amount of stock-based awards that are expected to be forfeited.

Adoption of SFAS No. 123R was implemented utilizing modified prospective application ( MPA ). Under MPA, the Company applied SFAS No. 123R for new awards granted after December 31, 2005 and for any awards that were granted prior to December 31, 2005 but were still vesting after December 31, 2005. As of December 31, 2006, no liability awards have been granted.

The Company had a choice of two attribution methods for allocating compensation cost under SFAS No. 123R: the straight-line method, which allocates expense on a straight-line basis over the requisite service period of the last separately vesting portion of an award, or the graded vesting attribution method, which allocates expense on a straight-line basis over the requisite service period for each separately vesting portion of the award as if the award was, in-substance, multiple awards. The Company chose the straight-line method.

The Company chose to continue utilizing the Black-Scholes model as its chosen option-pricing model. Management concluded that this was the most appropriate method with which to value the Company's share-based payment arrangements, but notes that if any share-based payment instruments should be granted for which the Black-Scholes method does not meet the measurement objective as stated within SFAS No. 123R, management would utilize a more appropriate method for valuing that instrument. However, management does not believe that any instruments granted to date and accounted for under SFAS No. 123R would require a method other than Black-Scholes in order to meet the measurement objective discussed above.

Management revisited its conclusions regarding the assumptions that underlie the valuation of share-based payment awards. In regards to the calculation of expected term, the Company chose to utilize the simplified method for plain vanilla options as discussed within SAB No. 107. The Company believes that all factors listed

**Table of Contents**

within SAB No. 107 as pre-requisites for utilizing the simplified method are true for the Company and its share-based payment arrangements. The Company currently intends to utilize the simplified method through December 31, 2007, at which point it is anticipated that more detailed information about exercise behavior will be more widely available. When valuing share-based payment awards reported via pro forma results for SFAS No. 123 and SFAS No. 148 prior to the adoption of SFAS No. 123R, an estimate of a five-year expected term for all employees as one weighted-average group was utilized, in accordance with the guidance for estimates provided in SFAS No. 123.

For the calculation of expected volatility, because the Company was a private company until October 26, 2006, the Company lacks company specific historical and implied volatility information. Therefore, the Company based its estimate of expected volatility on the historical volatility of similar entities whose share prices are publicly available. The Company intends to continue to consistently apply this process using the same similar entities until a sufficient amount of historical information regarding the volatility of the Company's own share price becomes available, or unless circumstances change such that the identified entities are no longer similar to the Company. In this latter case, more suitable, similar entities whose share prices are publicly available would be utilized in the calculation. This conclusion and approach is consistent with the approach utilized by management when valuing share-based payment awards reported via pro forma results for SFAS No. 123 and SFAS No. 148.

The risk-free rate utilized when valuing share-based payment arrangements is based on the U.S. Treasury yield curve in effect at the time of grant for the expected term of the particular instrument being valued. This is consistent with the approach the Company utilized when valuing share-based payment awards reported via pro forma results for SFAS No. 123 and SFAS No. 148.

Under SFAS No. 123R, the Company has separated its employees into two groupings, which can be summarized as (1) management, including the board of directors; and (2) non-management. However, given the Company's current use of the simplified method, as discussed above, the establishment of these groupings will not affect the expected term utilized by the Company until the Company ceases to employ the simplified method of estimating expected term. All employees were viewed as one grouping by the Company when valuing share-based payment awards reported via pro forma results for SFAS No. 123 and SFAS No. 148 prior to the adoption of SFAS No. 123R.

Had compensation cost for the Company's stock option plans been determined based on the fair value at the grant dates of awards under these plans consistent with the method prescribed by SFAS 123, the Company's net loss and pro forma net loss would have been as follows for the years ending December 31, 2005 and 2004:

	<b>Twelve Months Ended December 31, 2005</b>	<b>Twelve Months Ended December 31, 2004</b>
Net loss attributable to common shareholders as reported	\$ (16,514)	\$ (20,048)
Add: Stock-based employee compensation expense included in net loss	57	
Less: Total stock based employee compensation expense determined under fair-value based methods for all awards	(391)	(213)
Pro Forma net loss attributable to common shareholders	\$ (16,848)	\$ (20,261)
Net loss per share attributable to common shareholders (basic and diluted):		
As Reported	\$ (32.96)	\$ (43.77)
Pro Forma	\$ (33.63)	\$ (44.24)

**Stock-Based Compensation Non-Employee Stock-Based Awards**

The Company occasionally grants stock option awards to consultants. Such grants are accounted for pursuant to EITF Issue No. 96-18, *Accounting for Equity Instruments That Are Issued to Other Than Employees*

## **Table of Contents**

*for Acquiring, or in Conjunction with Selling, Goods or Services*, and, accordingly, we recognize compensation expense equal to the fair value of such awards and amortize such expense over the performance period. The Company estimates the fair value of each award using the Black-Scholes model. The unvested equity instruments are revalued on each subsequent reporting date until performance is complete, with an adjustment recognized for any changes in their fair value. The Company amortizes expense related to non-employee stock options in accordance with FASB Interpretation 28, *Accounting for Stock Appreciation Rights and Other Variable Stock Option or Award Plans*.

### ***Accrued Expenses***

As part of the process of preparing financial statements, the Company is required to estimate accrued expenses. This process involves identifying services which have been performed on our behalf and estimating the level of service performed and the associated cost incurred for such service as of each balance sheet date in our financial statements.

In accruing service fees, the Company estimates the time period over which services will be provided and the level of effort in each period. If the actual timing of the provision of services or the level of effort varies from the estimate, the Company will adjust the accrual accordingly. The majority of our service providers invoice us monthly in arrears for services performed. In the event that we do not identify costs that have begun to be incurred or the Company underestimates or overestimates the level of services performed or the costs of such services, our actual expenses could differ from such estimates. The date on which some services commence, the level of services performed on or before a given date and the cost of such services are often subjective determinations. The Company makes judgments based upon facts and circumstances known to us in accordance with GAAP.

### ***Cash, Cash Equivalents and Restricted Cash***

Cash and cash equivalents are stated at cost, which approximates market, and include short-term, highly-liquid investments with original maturities of less than three months. The Company also holds certificates of deposit, which collateralize the Company's facility lease which are classified as restricted cash in the accompanying balance sheets. The restricted cash will be released from restriction at various dates through 2010.

### ***Marketable Securities and Equity Investments***

The Company classifies its marketable securities as "available for sale" and carries these investments at fair value, using quoted market prices at the end of the reporting period. Unrealized gains or losses on these investments are included as a separate component of stockholders' equity (deficit). The specific identification method is used to determine amortized cost in computing unrealized gain or loss. Investments are regularly reviewed to determine whether a decline in fair value below the cost basis is other than temporary. If the decline in fair value is judged to be other than temporary, the cost basis of the security is written down to fair value. The Company's marketable securities as of December 31, 2006, consisted of U.S. Government bonds and agency securities. As of December 31, 2006, these securities had a maximum maturity of less than twelve months and none of the Company's investments were determined to be other than temporarily impaired.

### ***Fair Value of Financial Instruments***

The Company's financial instruments, including cash, cash equivalents, accounts receivable, and accounts payable are carried at cost, which approximates their fair value because of the short-term maturity of these instruments.

## **Table of Contents**

### ***Concentration of Risk***

Concentration of credit risk exists with respect to cash and cash equivalents, accounts receivable, and investments. The Company maintains its cash and cash equivalents and investments with high quality financial institutions. At times, amounts may exceed federally insured deposit limits.

For the years ended December 31, 2006, 2005 and 2004, 90%, 97% and 100% of the Company's revenue was generated from an agreement with one collaboration partner (see Note 5) and at December 31, 2006, 2005 and 2004, 97%, 96% and 100% of accounts receivable was due from the same collaboration partner.

### ***Fixed Assets***

Property and equipment are recorded at cost and are depreciated and amortized over the shorter of their lease term or their estimated useful lives on a straight-line basis as follows:

Laboratory equipment	4 - 7 years
Office equipment	3 - 5 years
Leasehold improvements	8 - 10 years

Expenditures for maintenance and repairs, which do not improve or extend the useful lives of the respective assets, are expensed as incurred.

When assets are sold or retired, the related cost and accumulated depreciation are removed from their respective accounts and any resulting gain or loss is included in income (loss).

### ***Long-lived Assets***

SFAS No. 144, *Accounting for the Impairment or Disposal of Long-Lived Assets*, addresses the financial accounting and reporting for impairment or disposal of long-lived assets. The Company reviews the recorded values of long-lived assets for impairment whenever events or changes in business circumstance indicate that the carrying amount of an asset or group of assets may not be fully recoverable.

### ***Research and Development Expenses***

All costs associated with internal research and development, research and development services for which the Company has externally contracted, and licensed technology are expensed as incurred. Research and development expense includes direct costs for salaries, employee benefits, subcontractors, including clinical research organizations (CROs), operating supplies, facility-related expenses and depreciation.

### ***Patent Costs***

The Company expenses the costs of obtaining patents.

### ***Convertible Preferred Stock***

The carrying value of convertible preferred stock was increased by periodic accretion to account for accrued but unpaid dividends (see Note 11.) These increases were effected through charges against additional paid-in-capital, if any, and then accumulated deficit.

In connection with the initial public offering, the Company's outstanding shares of Series A, Series B, Series C, Series C-1 and Series C-2 Convertible Preferred Stock were converted into 9,834 shares of common stock, including shares issued in satisfaction of \$15,400 of accrued but unpaid dividends on the Preferred Stock as of October 31, 2006, the closing date of the initial public offering (see Note 2).

**Table of Contents****Comprehensive Income (Loss)**

The Company reports and presents comprehensive income (loss) in accordance with SFAS No. 130, *Reporting Comprehensive Income*, which establishes standards for reporting and display of comprehensive income (loss) and its components in a full set of general purpose financial statements. The objective of the statement is to report a measure of all changes in equity of an enterprise that result from transactions and other economic events of the period other than transactions with owners (comprehensive income (loss)). The Company's other comprehensive income (loss) arises from net unrealized gains (losses) on marketable securities.

Details relating to unrealized gains and losses and other comprehensive loss are as follows (in thousands):

	Years Ended December 31,		
	2006	2005	2004
Net loss	\$ (24,086)	\$ (13,575)	\$ (17,460)
Unrealized gain (loss) arising during the year	18	3	(3)
<b>Total comprehensive loss</b>	<b>\$ (24,068)</b>	<b>\$ (13,572)</b>	<b>\$ (17,463)</b>

**Income Taxes**

The Company utilizes the asset and liability method of accounting for income taxes, as set forth in SFAS 109, *Accounting for Income Taxes* (SFAS 109). Under this method, deferred tax liabilities and assets are recognized for the expected future tax consequences of temporary differences between the carrying amounts and the tax bases of assets and liabilities. A valuation allowance is established against net deferred tax assets if, based on the weight of available evidence, it is more likely than not that some or all of the net deferred tax assets will not be realized.

**Reclassifications**

Certain reclassifications have been made to the 2005 financial statements to conform to the 2006 presentation.

**Segment Information**

The Company is engaged solely in the discovery and development of innovative anti-infective drug therapies. Accordingly, the Company has determined that it operates in one operating segment.

**Recently Issued Accounting Pronouncements**

In July 2006, the FASB issued Interpretation No.48, *Accounting for Uncertainty in Income Taxes* an interpretation of FASB Statement No.109 (FIN 48). FIN 48 prescribes a comprehensive model for how a company should recognize, measure, present, and disclose in its financial statements uncertain tax positions that the company has taken or expects to take on a tax return (including a decision whether to file or not file a return in a particular jurisdiction). Under FIN 48, the financial statements will reflect expected future tax consequences of such positions presuming the taxing authorities' full knowledge of the position and all relevant facts, but without considering time values. FIN 48 substantially changes the applicable accounting model and is likely to cause greater volatility in income statements as more items are recognized discretely within income tax expense. FIN 48 also revises disclosure requirements and introduces a prescriptive, annual tabular rollforward of the unrecognized tax benefits. FIN 48 is effective for the Company beginning January 1, 2007. The Company is evaluating the impact of adopting FIN 48 on our financial position and results of operations and currently anticipates an increase to retained earnings based on the cumulative effect of approximately \$180 from adoption.

**Table of Contents**

In September 2006, the FASB issued SFAS No. 157, *Fair Value Measurements*. SFAS No. 157 defines fair value, establishes a framework for measuring fair value in generally accepted accounting principles, and expands disclosures about fair value measurements. The standard is effective for financial statements issued for fiscal years beginning after November 15, 2007 and interim periods within those fiscal years. The Company does not believe that its adoption in the first quarter of 2008 will have a material impact on the Company's financial statements.

In September 2006, the SEC issued Staff Accounting Bulletin No. 108, *Considering the Effects of Prior year Misstatements when Quantifying Misstatements in Current Year Financial Statements* (SAB 108). SAB 108 provides interpretive guidance on how the effects of the carryover or reversal of prior year misstatements should be considered in quantifying a current year misstatement. The SEC staff believes that registrants should quantify errors using both a balance sheet and an income statement approach and evaluate whether either approach results in quantifying a misstatement that, when all relevant quantitative and qualitative factors are considered, is material. The adoption of SAB 108 had no effect on the Company's financial statements for the year ending December 31, 2006.

In February 2007, the FASB issued SFAS No. 159, *The Fair Value Option for Financial Assets and Financial Liabilities*. SFAS No. 159 permits an entity to elect to report many financial assets and liabilities at fair value. Entities electing the fair value option would be required to recognize changes in fair value in earnings and are required to distinguish, on the face of the statement of financial position, the fair value of assets and liabilities for which the fair value option has been elected and similar assets and liabilities measured using another measurement attribute. The initial adjustment to reflect the difference between the fair value and the carrying amount would be accounted for as a cumulative-effect adjustment to retained earnings as of the date of initial adoption. SFAS No. 159 is effective as of the beginning of an entity's first fiscal year beginning after November 15, 2007. The Company is currently evaluating the impact, if any, of FAS 159 on our Financial Statements.

**4. Earnings (Loss) Per Share (EPS)**

Basic EPS is calculated in accordance with SFAS No. 128, *Earnings per Share*, by dividing net income or loss attributable to common stockholders by the weighted average common stock outstanding. Diluted EPS is calculated in accordance with SFAS No. 128 by adjusting weighted average common shares outstanding for the dilutive effect of common stock options, warrants, convertible preferred stock and accrued but unpaid convertible preferred stock dividends. In periods where a net loss is recorded, no effect is given to potentially dilutive securities, since the effect would be antidilutive. Total securities that could potentially dilute basic EPS in the future that were not included in the computation of diluted EPS because to do so would have been antidilutive for the years ended December 31, 2006, 2005 and 2004 were as follows (prior to consideration of the treasury stock method):

	December 31, 2006	December 31, 2005	December 31, 2004
Options	1,208	864	615
Warrants	336	315	319
Convertible Preferred Stock, as converted		6,936	5,098
Accrued but unpaid Convertible Preferred Stock dividends		846	591
Total potentially dilutive securities outstanding	1,544	8,961	6,623

Excluded from the weighted average shares are 0, 4 and 19 restricted shares subject to repurchase as of December 31, 2006, 2005 and 2004, respectively.

## **Table of Contents**

### **5. Collaboration Arrangement**

In November 2004, the Company entered into a collaboration arrangement (the "Gilead Arrangement") with Gilead Sciences Inc. ("Gilead") to jointly develop and commercialize compounds for use in treating hepatitis C infection which inhibit viral replication through a specified novel mechanism of action. Commercialization efforts will commence only if such compounds are found to be commercially viable and all appropriate regulatory approvals have been obtained. In connection with this arrangement, Gilead paid to the Company \$10,000 as payment for 2,300 newly issued shares of Series C-1, and for a non-refundable up-front license fee.

Under the Gilead Arrangement, the Company and Gilead will work together to develop one or more compounds for use in treating hepatitis C infection until proof-of-concept in one compound, as defined, is achieved (the "Research Period"). Subsequent to the achievement of proof-of-concept, the Company has no further obligation to continue providing services to Gilead but, at Gilead's request, the Company may elect to extend the Research Period for up to an additional two years after proof-of-concept is established, based upon good faith negotiations at that point in time. Further, if it is agreed that potential back-up compounds should continue to be researched, good faith negotiations would also be conducted to determine the specifics of that arrangement.

Gilead has agreed to make milestone payments to the Company upon the achievement of various defined clinical, regulatory and commercial milestones, such as regulatory approval in the United States, the European Union, or Japan, which could total up to \$157,500 assuming the successful simultaneous development and commercialization achieving more than \$600,000 in worldwide net sales of a lead and back-up compound.

The up-front payment of \$10,000 was first allocated to the fair value of the Series C-1 (see Note 11), as determined by management after considering a valuation analysis performed by an unrelated third-party valuation firm at the direction of the Company, in which each share of the Series C-1 was determined to be worth \$0.88 per share, or approximately \$2,000 in aggregate. The remaining \$8,000 balance of the \$10,000 is being accounted for as a non-refundable up-front license fee. Due to certain provisions contained within the Gilead Arrangement relating to services to be performed on both the primary and backup compounds, as defined, the non-refundable up-front license fee, as well as any milestones achieved during the Research Period, including a \$2,000 milestone received in 2005, will not be accounted for under the substantive milestone method, but rather under the proportionate performance model (see Note 3). Revenue recognized under a proportionate performance model will be limited by the aggregate cash received or receivable to date by the Company. Milestones achieved, if any, after the termination of the Research Period, will be recognized when the milestone is achieved as the Company has no further research or development obligations after the Research Period.

Under the Gilead Arrangement through December 31, 2006, agreed upon research or development expenses, including internal full-time equivalent ("FTE") costs and external costs, incurred by both companies during the period up to proof-of-concept were borne equally by both parties. The Company was incurring the majority of those expenses and, therefore, was the net receiver of funds under this cost-sharing portion of the arrangement. Effective April 1, 2007, internal full-time equivalent costs will no longer be subject to this cost-sharing arrangement. Instead, each party will provide for the costs of their own full-time equivalents. External costs will continue to be shared equally by both parties. (See Note 18.)

Payments of \$1,646 and \$725 were made by the Company to Gilead in connection with this collaboration for the years ended December 31, 2006 and 2005, respectively, and have been recognized as a reduction in revenue.

Gilead has the right to terminate the agreement without cause upon 120 days written notice to the Company beginning at the earlier of proof-of-concept or November 24, 2006. Upon termination of the agreement for any reason, all cost share amounts due and payable through the date of termination shall be paid by the appropriate party and no previously paid amounts will be refundable.

**Table of Contents**

During the years ended December 31, 2006, 2005 and 2004, the Company recognized revenue of \$2,978, \$8,277 and \$807, respectively, under this collaboration agreement, respectively, of which \$1,511, \$4,328 and \$446, respectively, related to the recognition of the non-refundable fee and pre-proof-of-concept milestone under the proportionate performance model. The remaining \$1,468, \$3,949 and \$361 recognized during 2006, 2005 and 2004, respectively, relate to FTE and other external costs billed under the collaboration. Included in the accompanying 2006 and 2005 balance sheets is \$772 and \$734, respectively, of receivables resulting from this collaboration agreement and \$5,265 and \$5,202, respectively, of deferred revenue resulting from the up-front fee and the \$2,000 milestone payment received during the Research Period. As a result of revisions to the research program in early 2007 (see Note 18), effective as of the fourth quarter of 2006, the Company adjusted its estimate of completion of performance and remaining obligations under the collaboration to reflect the Company's proportionate performance as of December 31, 2006. As a result of such revisions, accounted for under the cumulative catch up method, the Company reduced revenue previously recognized by \$4,195. In addition to Gilead's rights to unilaterally terminate this agreement, each party has the right to terminate for material breach; however the Company may terminate for Gilead's breach only on a market-by-market basis, and, if applicable, a product-by-product basis.

**6. Marketable Securities**

The Company classifies its entire investment portfolio as available for sale as defined in SFAS No. 115, Accounting for Certain Investments in Debt and Equity Securities. As of December 31, 2006 and 2005, the Company's investment portfolio consisted of U.S. government and agency securities held by a major banking institution. The maturities of marketable securities of \$39,904 December 31, 2006 are less than one year.

Securities are carried at fair value with the unrealized gains/losses reported as a separate component of stockholders' equity. The unrealized gain from marketable securities was \$18 and \$3 at December 31, 2006 and 2005, respectively.

As of December 31, 2006, none of the Company's investments were determined to be other than temporarily impaired.

**7. Other Current Assets**

A summary of other current assets is as follows:

	As of December 31,	
	2006	2005
Prepaid development costs	\$ 768	\$ 24
Tax credit receivable	68	374
Interest receivable	65	17
Maintenance agreements	272	180
Prepaid other	329	112
Total	\$ 1,502	\$ 707



**Table of Contents****8. Fixed Assets**

A summary of property and equipment is as follows:

	As of December 31,	
	2006	2005
Laboratory equipment	\$ 4,331	\$ 3,964
Office equipment	786	745
Leasehold improvements	2,919	2,919
	8,036	7,628
Less accumulated depreciation and amortization	(6,070)	(5,333)
Total	\$ 1,966	\$ 2,295

Depreciation expense was \$762, \$955 and \$1,260 for the years ended December 31, 2006, 2005 and 2004, respectively.

**9. Accrued Expenses**

Current and long-term accrued expenses consist of the following:

	As of December 31,	
	2006	2005
Accrued compensation	\$ 749	\$ 725
Accrued clinical trial expense	783	584
Accrued preclinical trial expense	213	364
Accrued licenses	100	180
Accrued rent expense	160	167
Accrued manufacturing and formulation	218	165
Accrued consulting expenses	218	67
Other taxes	180	180
Other accrued expenses	358	231
Total	\$ 2,979	\$ 2,663

Accrued clinical trial and preclinical expenses are comprised of amounts owed to third-party CROs, clinical investigators, laboratories and data managers for research and development work performed on behalf of the Company. At each period end the Company evaluates the accrued clinical trial expense balance based upon information received from each party and ensures that the estimated balance is reasonably stated based upon the information available to the Company. The clinical trial accrual balances represent the Company's best estimate of amounts owed for clinical trial services based on all information available. Such estimates are subject to change as additional information becomes available.

**Table of Contents****10. Long-Term Debt**

Long-term debt consists of the following:

	As of December 31,	
	2006	2005
CII Term Loan, payable in monthly installments of \$13 through September 2010 with a final balloon payment of \$686, with interest at 7.5% per annum	\$ 1,015	\$ 1,091
2002 CII Term Loan, payable in monthly installments of \$6 through October 2007, with interest at 7.5% per annum	54	114
2002 Credit Facility, payable in monthly installments as the individual notes mature through January 2007, with interest ranging from 8.01% to 10.17% per annum	26	321
2003 Credit Facility, payable in monthly installments as the individual notes mature through May 2008, with interest ranging from 6.72% to 8.72% per annum	458	266
2005 Credit Facility, payable in monthly installments as notes mature through December 2009, with interest of 10.92% to 11.56% per annum	7,346	4,664
Total long-term debt	8,899	6,456
Less: current portion	(3,572)	(2,083)
Total long-term debt, net of current portion	\$ 5,327	\$ 4,373

During November 2000, the Company entered into a \$1,400 term loan ( CII Term Loan ) with Connecticut Innovations, Inc. (CII), a stockholder of the Company. The CII Term Loan is collateralized by personal and real property located at the Company's facility in New Haven, Connecticut. The current carrying value of the personal and real property located at the Company's facility that acts as collateral for the loan was \$654 as of December 31, 2006. The CII Term Loan contains certain non-financial covenants, including the requirement that the Company maintain its principal place of business and conduct the majority of its operations in Connecticut ( Connecticut Presence ). If the Company fails to maintain its Connecticut Presence, all amounts due under the CII Term Loan shall be immediately due and payable. Maintaining a Connecticut Presence is within management's control, and the Company currently has no plans to relocate the majority of its operations, and therefore the classification of the CII Term Loan is based on the scheduled payment dates.

In 2002, the Company entered into a term loan ( 2002 CII Term Loan ) with CII. The 2002 CII Term Loan has other terms that are similar to the CII Term Loan, which includes collateral, non-financial covenants and a requirement that the Company maintain its Connecticut Presence.

The CII Term Loan and the 2002 CII Term Loan each contain certain subjective acceleration clauses, which upon the occurrence of a material adverse change in the financial condition, business or operations of the Company in the view of CII ( Material Adverse Change ), may cause amounts due under each of the agreements to become immediately due and payable. Should a Material Adverse Change occur, then the amounts due under each of the 2002 Credit Facility and 2003 Credit Facility could become immediately due and payable. The Company has no indication that it is in default of any such clauses and judged acceleration by the lender to be remote based on the Company's financial circumstances.

In 2002, the Company entered into a credit facility with GE Capital ( 2002 Credit Facility ). In connection with the facility, the Company issued warrants to purchase 18 shares of Series C preferred stock at an exercise price of \$1.81. Following the Company's initial public offering these automatically converted to warrants to purchases 3 shares of common stock at an exercise price of \$12.11.

In 2003, the Company entered into a credit facility with Webster Bank ( 2003 Credit Facility ) for the purchase of capital equipment. The purchased equipment serves as collateral for credit facility.

**Table of Contents**

On December 30, 2005, the Company entered into a credit facility with two lenders ( 2005 Credit Facility ). In connection therewith, the Company issued warrants to purchase 167 shares of Series C-2 at an exercise price of \$1.50 per share. Following the Company's initial public offering, these automatically converted to warrants to purchase 21 shares of common stock at an exercise price of \$12.00 (See Note 11).

In May 2006, the Company expanded the 2005 Credit Facility, drawing down an additional \$5,000 to fund the Company's working capital needs and issued warrants to purchase an additional 167 shares of Series C-2 at an exercise price of \$1.50 per share. Substantially all of the Company's tangible assets are collateral for the 2005 Credit Facility. Following the Company's initial public offering, these automatically converted to warrants to purchase 21 shares of common stock at an exercise price of \$12.00 (See Note 11).

Future maturities of long-term debt are as follows:

<b>Years Ended December 31,</b>	
2007	3,572
2008	3,832
2009	997
2010	749
	9,150
Less: unamortized debt discount	(251)
<b>Total</b>	<b>\$ 8,899</b>

**11. Capital Structure*****Preferred Stock***

At December 31, 2006, the Company had 5,000 authorized shares of undesignated Preferred Stock of which no shares were issued and outstanding. Immediately prior to the Company's initial public offering, the Company had 80,620 authorized shares of Convertible Preferred Stock, of which 250, 15,817, 22,436, 2,300 and 24,000 were designated as Series A, Series B, Series C, Series C-1 and Series C-2 shares, respectively, and 250, 15,817, 22,418, 2,300 and 23,425, respectively, were issued and outstanding.

In October 2006, the Company completed an initial public offering of its common stock. In connection with the initial public offering, the then outstanding shares of Series A, Series B, Series C, Series C-1 and Series C-2 Convertible Preferred Stock (the Preferred Stock ) were converted into 9,834 shares of common stock, including shares issued in satisfaction of \$15,400 of accrued but unpaid dividends on the Preferred Stock as of October 31, 2006, the closing date of the initial public offering transaction. In addition, outstanding warrants to purchase Series C preferred stock were automatically converted into 3 warrants to purchase shares of the Company's common stock at an exercise price of \$12.11 per share, and outstanding warrants to purchase Series C-2 preferred stock were automatically converted into 42 warrants to purchase shares of the Company's common stock at an exercise price of \$12.00 per share.

In March 2006 and May 2006, the Company raised \$18,224, net of \$182 of issuance costs, through the issuance of 12,271 shares of Series C-2 Preferred Stock, under a second and third closing of the Series C-2 financing. Per share price, rights and preferences were the same as those offered in a November 2005 close of the Series C-2 financing.

During 2005, the Company issued 3,563 shares of Series C-2 Preferred stock, raising \$5,289, net of issuance costs. As part of this issuance, holders of the convertible notes (see Note 10) converted all outstanding principal and interest, totaling \$11,400, into an additional 7,592 shares of Series C-2 Preferred Stock at a conversion price of \$1.50 per share. As part of this issuance, the purchasers of the Series C-2 Preferred Stock committed to

**Table of Contents**

purchase, subject to the satisfaction of certain representations and warranties, an additional 3,104 shares of Series C-2 at identical terms during a second closing to be held before June 30, 2006. The Company determined that the fair value of this option to purchase additional shares was de minimus both at the time of issuance and at December 31, 2005.

During 2004, the Company issued 2,300 shares of Series C-1 Preferred Stock in connection with the collaboration agreement with Gilead Sciences, Inc. The Company determined, after considering an unrelated third party valuation, that the fair value of these newly issued shares of the Company's Series C-1 Convertible Preferred Stock was \$0.88 per share, or \$2,000 in aggregate. The stated terms of the agreement with Gilead provided that accrued dividends, liquidation rights, and conversion rights related to these shares be based upon a \$2.17 per share price, as discussed in the significant terms section below.

The significant terms of the Series A, Series B, Series C, Series C-1 and Series C-2 were as follows, prior to the conversion of the preferred into common stock in connection with the company's initial public offering.

*Dividends.* Through October 31, 2006, cumulative dividends accrued whether or not declared, except with respect to the Series A. When and if declared by the board of directors, such accrued but unpaid dividends would be payable in cash. Upon an optional conversion at the option of the holder, or a mandatory conversion in connection with a firm commitment underwritten public offering pursuant to an effective registration statement under the Securities Act of 1933, all such accrued but unpaid dividends on the Series B, Series C, Series C-1 and Series C-2 preferred stock would be payable in additional shares of Series B, Series C, Series C-1 and Series C-2 preferred stock calculated by dividing the accrued but unpaid dividends by \$1.81, \$1.81, \$2.17 and \$1.50, respectively. Upon the Company's initial public offering, such shares of Series B, Series C, Series C-1 and Series C-2 would then automatically convert into shares of common stock. Given that conversion of the preferred stock was at the option of the holder at any time, and that upon conversion the holder was entitled to receive cumulative accrued but unpaid dividends, and given that the Company had the option to declare and pay such dividends in cash, the Company's policy had been to accrue dividends at the stated dividend rates.

Each share of Series B, Series C and Series C-1 earned cumulative dividends at 4% per annum. Each share of Series C-2 earned cumulative dividends at 8% per annum. No dividends or other distributions were made with respect to the Series A or the common stock. The following reflects dividends accrued prior to the Company's initial public offering:

	Years ended December 31,		
	2006	2005	2004
Series B	\$ 792	\$ 949	\$ 949
Series C	1,349	1,623	1,623
Series C-1	166	200	16
Series C-2	1,856	167	
Total	\$ 4,163	\$ 2,939	\$ 2,588

Upon the closing of the Company's initial public offering 8,722 shares of convertible preferred stock were issued to the holders of our series B, series C, series C-1 and series C-2 convertible preferred stock in satisfaction of \$15,442 of accumulated dividends.

*Conversion.* At the option of the holder, the Series A, Series B, Series C, Series C-1 and Series C-2 stockholders could elect to convert their preferred shares into common stock at an initial conversion price of \$1.00, \$1.50, \$1.81, \$2.17 and \$1.50 per share, respectively, subject to certain anti-dilution adjustments, as defined.

**Table of Contents**

The Company had determined that none of its preferred stock required liability classification under SFAS 150, *Accounting for Certain Financial Instruments with Characteristics of both Liabilities and Equity*, as the preferred stock outstanding had no date certain mandatory redemption that was unconditional. In addition, the Company had determined there had been no beneficial conversion features related to any of its outstanding preferred stock from each date of issuance through October 31, 2006, the date of conversion.

**Common Stock**

At December 31, 2006 and 2005, the Company had 100,000 and 85,000, respectively, authorized shares of \$0.001 par value common stock. There are 1,932 shares reserved for future exercise of outstanding stock options and warrants.

In October 2006, the Company amended its articles of incorporation to effect a 1-for-8 reverse stock split of outstanding common stock. Such reverse stock split had been previously approved by the Company's Board of Directors in September 2006. Such reverse stock split has been retroactively reflected within the accompanying financial statements. As a result of the reverse stock split, the conversion ratios of the Company's preferred stock changed as follows:

	Prior	After
Series A	1 : 1	1 : 0.1250
Series B	1 : 1	1 : 0.1250
Series C	1 : 1.196	1 : 0.1495
Series C-1	1 : 1.196	1 : 0.1495
Series C-2	1 : 1	1 : 0.1250

**Warrants**

A summary of the status of the Company's warrant activity for the years ended December 31, 2005 and 2006 is presented in converted amounts below:

	Warrants	Weighted Average Exercise price
Outstanding at January 1, 2005	319	\$ 4.92
Granted	21	12.00
Exercised		
Expired	(25)	1.20
Outstanding at January 1, 2006	315	\$ 5.68
Granted	21	12.00
Exercised		
Expired		
Outstanding at December 31, 2006	336	\$ 6.08

As part of the 2005 Credit Facility, the Company issued a warrant to the lenders to purchase 167 shares of Series C-2 Preferred Stock exercisable for a period of 7 years at an exercise price of \$1.50 per share. Following the Company's initial public offering, these automatically converted to a warrant to purchase 21 shares of Common Stock at an exercise price of \$12.00 per share. The relative fair value of such warrants at the date of issuance was estimated to be \$174, utilizing the Black-Scholes method, using assumptions similar to those outlined in Note 3. Such value was recorded as a debt discount which is being amortized as interest expense over the life of the related obligation.

## **Table of Contents**

In May 2006, the Company expanded the 2005 Credit Facility and issued warrants to purchase an additional 167 shares of Series C-2 at an exercise price of \$1.50 per share. Following the Company's initial public offering, these automatically converted to a warrant to purchase 21 shares of Common Stock at an exercise price of \$12.00 per share. The relative fair value of such warrants at the date of issuance was estimated to be \$174, utilizing the Black-Scholes method, using assumptions similar to those outlined in Note 3. Such value was recorded as a debt discount which is being amortized as interest expense over the life of the related obligation.

The Company classified its outstanding Series C and Series C-2 preferred stock warrants as a liability in its December 31, 2005 balance sheet in accordance with FSP 150-5, *Issuers Accounting under FASB Statement No. 150 for Freestanding Warrants and Other Similar Instruments on Shares that are Redeemable* (FSP 150-5). The cumulative effect of early adoption of FSP 150-5 was not material to the Company's financial position or operating results. The Company's preferred stock warrants were marked to market through the date of the Company's initial public offering in October 2006, at which point, these warrants automatically converted to warrants to purchase shares of Common Stock.

## **12. Stock-Based Compensation**

### *1998 Stock Option Plan*

The Company's 1998 stock option plan, or the 1998 plan, as amended and restated, was adopted by our board of directors in January 2000 and approved by our stockholders in March 2000. A maximum of 1,094 shares of common stock are authorized for issuance under the 1998 plan.

The 1998 plan, as amended, provides for the grant of options intended to qualify as incentive stock options under Section 422 of the Internal Revenue Code of 1986, as amended, and nonqualified stock options. The Company's employees, officers, directors, consultants and advisors are eligible to receive options under the 1998 plan. Under present law, however, incentive stock options may only be granted to our employees. In accordance with the terms of the 1998 plan, our board of directors administers the 1998 plan.

Following the adoption of the 2006 stock incentive plan described below, the Company no longer grants stock options or other awards under the 1998 plan.

### *2006 Stock Incentive Plan*

The Company's 2006 stock incentive plan, or the 2006 plan, was adopted by our board of directors in May 2006, amended by our board of directors in September 2006 and approved by our stockholders in September 2006 and became effective in October 2006, upon the closing of our initial public offering. The Company has reserved for issuance 750 shares of common stock under the 2006 plan. In addition, the plan contains an "evergreen" provision, which allows for an annual increase in the number of shares available for issuance under the plan on the first day of each fiscal year during the period beginning on the first day of fiscal year 2007 and ending on the second day of fiscal year 2010. The annual increase in the number of shares shall be equal to the lowest of:

750 shares;

a number of shares that, when added to the number of shares already reserved under the plan, equals 5% of our outstanding shares as of such date; or

an amount determined by our board of directors.

The 2006 plan provides for the grant of incentive stock options, nonstatutory stock options, restricted stock, restricted stock units, stock appreciation rights and other stock-based awards. The Company's officers, employees, consultants, advisors and directors, and those of any subsidiaries, are eligible to receive awards under the 2006 plan; however, incentive stock options may only be granted to our employees.

**Table of Contents**

The Company's board of directors administers the 2006 plan, although it may delegate its authority to a committee. The board, or a committee to which it has delegated its authority, will select the recipients of awards and determine, subject to any limitations in the 2006 plan:

the number of shares of common stock covered by options and the dates upon which those options become exercisable;

the exercise prices of options;

the duration of options;

the methods of payment of the exercise price; and

the number of shares of common stock subject to any restricted stock or other stock-based awards and the terms and conditions of those awards, including the conditions for repurchase, issue price and repurchase price.

Options granted under the Company's 1998 Stock Option Plan and 2006 Stock Option Plan (the "Plans"), are exercisable for a period determined by the Company, but in no event longer than ten years from the date of the grant. Options generally vest ratably over four years. There were 388 shares available under the Plans as of December 31, 2006.

In connection with the exercise of certain options prior to December 31, 2002, the Company entered into notes with the option holders for the exercise price of the options, resulting in an aggregate stock subscription receivable of \$50 and \$181 at December 31, 2006 and 2005, respectively. The notes bear interest at the prevailing interest rate with principal and interest due five years after issuance. The Company has full recourse on all of the accrued but unpaid interest and 20% of the outstanding principal, in addition to the underlying stock collateralizing the notes.

A summary of the status of the Company's stock option activity for the year ended December 31, 2006 is presented in the table and narrative below:

	Options	Weighted Average Exercise Price
		2006
Outstanding at January 1, 2006	864	\$ 2.28
Granted	413	14.72
Exercised	(13)	1.60
Forfeited/Cancelled	(56)	2.42
Outstanding at December 31	1,208	\$ 6.53
Options exercisable at December 31	469	\$ 2.71
Options vested and expected to vest at December 31	1,143	\$ 6.33
Weighted-average fair value of options granted during the period		\$ 9.82

The following table summarizes information about stock options outstanding at December 31, 2006:

Range of Exercise Prices	Options Outstanding			Options Vested	
	Number Outstanding	Weighted Average Remaining Contractual Life (Years)	Weighted Average Exercise Price	Number Vested	Weighted Average Exercise Price
\$ 1.20	41	2.2	\$ 1.20	41	\$ 1.20
\$ 1.60	521	7.1	1.60	340	1.60
\$ 4.00	234	9.0	4.00	58	4.00
\$14.00 \$14.75	412	10.0	14.74	30	14.75
	1,208	8.3	\$ 6.53	469	\$ 2.71

F-23



## **Table of Contents**

As of December 31, 2006, the intrinsic value of the options of the options outstanding was \$11,569, of which \$6,282 related to vested options and \$5,287 related to unvested options. The intrinsic value for stock options is calculated based on the difference between the exercise prices of the underlying awards and the quoted stock price of our common stock as of the reporting date.

The total intrinsic value, the amount by which the stock price exceeds the exercise of the option on the date of exercise, of stock options exercised for the years ended December 31, 2006, 2005, and 2004 was \$172, \$65, and \$0, respectively.

The weighted-average grant-date fair value of options granted during the years ended December 31, 2006 and 2005 was \$9.82 and \$8.34, respectively. The weighted-average grant-date fair value of options vested at December 31, 2006 and 2005 was \$2.67 and \$1.14, respectively.

### *2006 Employee Stock Purchase Plan*

The Company established an Employee Stock Purchase Plan effective December 1, 2006 (the 2006 ESPP Plan). A total of 250 shares of common stock are available for issuance under the 2006 ESPP Plan. Eligible employees can purchase common stock pursuant to payroll deductions at a price equal to 85% of the lower of the fair market value of the common stock at the beginning or end of each six-month offering period.

The Company measures the fair value of issuances under the employee stock purchase plan using the Black-Scholes option pricing model at the end of each reporting period. The compensation cost for the Plan consists of the discount (15% of the grant date stock price) and the fair value of the option features. For the year ended December 31, 2006, the Company had not yet issued any shares associated with the Plan. However, the Company recorded compensation cost of \$12 for the year ended December 31, 2006. As of December 31, 2006, all 250 shares remained available for future issuance under the 2006 ESPP Plan.

### *Stock Based Compensation*

Effective January 1, 2006, the Company adopted SFAS 123R, Share-Based Payment, which requires measurement and recognition of compensation expense for all stock-based awards made to employees and directors, including employee stock options and employee stock purchases under our 2006 ESPP Plan based on estimated fair values. SFAS 123R supersedes our previous method of accounting under APB 25. In March 2005, the SEC issued SAB 107 providing supplemental guidance for SFAS 123R implementation. We have applied the provisions of SAB 107 in our adoption of SFAS 123R.

Under the fair value recognition provisions of SFAS No. 123R, stock-based compensation cost is based on the value of the portion of stock-based awards that is ultimately expected to vest during the period. Stock-based compensation expense recognized during the year ended December 31, 2006 includes compensation expense for stock-based awards granted prior to, but not yet vested as of December 31, 2005, based on the fair value on the grant date estimated in accordance with the pro forma provisions of SFAS 123, and compensation expense for the stock-based awards granted subsequent to December 31, 2005, based on the fair value on the grant date, estimated in accordance with the provisions of SFAS 123R.

Total compensation expense recorded in the accompanying statements of operations associated with consultant option grants is \$45, \$13 and \$12 for the years ended December 31, 2006, 2005 and 2004, respectively.

As of December 31, 2006, the total compensation cost related to nonvested options not yet recognized in the financial statements is approximately \$5,000, net of estimated forfeitures, and the weighted average period over which it is expected to be recognized is 1.89 years.

**Table of Contents**

Upon adoption of SFAS 123R, the Company selected the Black-Scholes option pricing model as the most appropriate method for determining the estimated fair value for stock-based awards. The Black-Scholes model requires the use of assumptions which determine the fair value of the stock-based awards. Determining the fair value of stock-based awards at the grant date requires judgment, including estimating the expected term of stock options, the expected volatility of our stock and expected dividends. In addition, the Company previously accounted for forfeitures as they occurred. In accordance with SFAS 123R, the Company is required to estimate forfeitures at the grant date and recognize compensation costs for only those awards that are expected to vest. Judgment is required in estimating the amount of stock-based awards that are expected to be forfeited. The assumptions used to value options granted are as follows:

	For the Years Ended		
	2006	2005	2004
Expected term of option	6.1 years	5 years	5 years
Expected volatility	70%	70%	70%
Risk free interest rate	4.69	4.83%	4.30%
Expected dividend yield	0%	0%	0%

Adoption of SFAS No. 123R was implemented utilizing modified prospective application ( MPA ). Under MPA, the Company applied SFAS No. 123R for new awards granted after December 31, 2005 and for any awards that were granted prior to December 31, 2005 but were still vesting after December 31, 2005. As of December 31, 2006, no liability awards have been granted.

The Company had a choice of two attribution methods for allocating compensation cost under SFAS No. 123R: the straight-line method, which allocates expense on a straight-line basis over the requisite service period of the last separately vesting portion of an award, or the graded vesting attribution method, which allocates expense on a straight-line basis over the requisite service period for each separately vesting portion of the award as if the award was, in-substance, multiple awards. The Company chose the straight-line method.

The Company chose to continue utilizing the Black-Scholes model as its chosen option-pricing model. Management concluded that this was the most appropriate method with which to value the Company's share-based payment arrangements, but notes that if any share-based payment instruments should be granted for which the Black-Scholes method does not meet the measurement objective as stated within SFAS No. 123R, management would utilize a more appropriate method for valuing that instrument. Management does not believe that any instruments granted to date and accounted for under SFAS No. 123R would require a method other than Black-Scholes in order to meet the measurement objective discussed above.

Management revisited its conclusions regarding the assumptions that underlie the valuation of share-based payment awards. In regards to the calculation of expected term, the Company chose to utilize the simplified method for plain vanilla options as discussed within SAB No. 107. The Company believes that all factors listed within SAB No. 107 as pre-requisites for utilizing the simplified method are true for the Company and its share-based payment arrangements. The Company currently intends to utilize the simplified method through December 31, 2007, at which point it is anticipated that more detailed information about exercise behavior will be more widely available. When valuing share-based payment awards reported via pro forma results for SFAS No. 123 and SFAS No. 148 prior to the adoption of SFAS No. 123R, an estimate of a five-year expected term for all employees as one weighted-average group was utilized, in accordance with the guidance for estimates provided in SFAS No. 123.

For the calculation of expected volatility, because the Company was a private company until October 26, 2006, the Company lacks company specific historical and implied volatility information. Therefore, the Company based its estimate of expected volatility on the historical volatility of similar entities whose share prices are publicly available. The Company intends to continue to consistently apply this process using the same similar entities until a sufficient amount of historical information regarding the volatility of the Company's own

## **Table of Contents**

share price becomes available, or unless circumstances change such that the identified entities are no longer similar to the Company. In this latter case, more suitable, similar entities whose share prices are publicly available would be utilized in the calculation. This conclusion and approach is consistent with the approach utilized by management when valuing share-based payment awards reported via pro forma results for SFAS No. 123 and SFAS No. 148.

The risk-free rate utilized when valuing share-based payment arrangements is based on the U.S. Treasury yield curve in effect at the time of grant for the expected term of the particular instrument being valued. This is consistent with the approach the Company utilized when valuing share-based payment awards reported via pro forma results for SFAS No. 123 and SFAS No. 148.

Under SFAS No. 123R, the Company has separated its employees into two groupings, which can be summarized as (1) management, including the board of directors; and (2) non-management. However, given the Company's current use of the simplified method, as discussed above, the establishment of these groupings will not affect the expected term utilized by the Company until the Company ceases to employ the simplified method of estimating expected term. All employees were viewed as one grouping by the Company when valuing share-based payment awards reported via pro forma results for SFAS No. 123 and SFAS No. 148 prior to the adoption of SFAS No. 123R.

During 2006, in connection with our initial public offering, our board of directors determined to undertake a reassessment of the fair value of common stock as of the December 20, 2005 grant date. Following this assessment, our board of directors, with input from management, reassessed the fair value of our common stock and determined that the exercise price of the employee stock options granted on December 20, 2005 was less than the reassessed fair value of \$11.00 per share of our common stock at the date of grant for accounting purposes. In connection with our adoption of SFAS No. 123R effective January 1, 2006, the Company reassessed the fair value of our unvested options using a Black-Scholes model. As a result, the restated aggregate fair value of this grant to be recognized over the four-year vesting period is \$2,200, or \$8.73 per share. The Company had previously assigned an aggregate fair value of \$611 to this grant.

The Company also occasionally grants stock option awards to consultants. Such grants are accounted for pursuant to EITF Issue No. 96-18, *Accounting for Equity Instruments That Are Issued to Other Than Employees for Acquiring, or in Conjunction with Selling, Goods or Services*, and, accordingly, we recognize compensation expense equal to the fair value of such awards and amortize such expense over the performance period. We estimate the fair value of each award using the Black-Scholes-Merton, or Black-Scholes, model. The unvested equity instruments are revalued on each subsequent reporting date until performance is complete, with an adjustment recognized for any changes in their fair value. We amortize expense related to non-employee stock options in accordance with FASB Interpretation 28. Total expense for the years ended December 31, 2006, 2005, and 2004 was \$45, \$13, and \$12, respectively.

Total compensation expense recorded in the accompanying statements of operations associated with option grants made to employees for the year ended December 31, 2006 was \$968. The Company recorded no tax benefit related to these options since the Company currently maintains a full valuation allowance.

### **13. License and Research and Development Agreements**

The Company has entered into certain license and collaborative research agreements with third parties relating to the Company's drug discovery and development initiatives. Under these agreements, the Company has been granted certain worldwide exclusive licenses to use the licensed compounds or technologies. Included in the accompanying 2006, 2005 and 2004 statements of operations is \$27, \$311 and \$831, respectively, of research and development expense resulting from these arrangements, respectively. In order to maintain its rights under these agreements, and provided that the Company does not terminate such agreements, the Company may also be required to pay an additional \$525 of aggregate minimum payments over the next five years. The Company may

**Table of Contents**

also be required to make future payments to these licensors upon achievement of certain product development milestones for anti-viral products utilizing the third party's intellectual property, as well as pay royalties on future net sales, if any.

**14. Commitments****401(k) Retirement Plan**

The Company has a 401(k) defined contribution retirement plan covering substantially all full-time employees. The decision to match any employee contributions is at the sole discretion of the Company. The Company did not make any matching contributions in 2006, 2005 or 2004.

**Operating Leases**

The Company leases its operating facility located in New Haven, Connecticut. The lease agreements require monthly lease payments through March 2011. The Company is recording the expense associated with the lease on a straight-line basis over the expected ten-year minimum term of the lease and, as a result, has accrued amounts of \$160 and \$167 outstanding as long-term accruals at December 31, 2006 and 2005, respectively.

The future minimum annual lease payments under these operating leases at December 31, 2006 are as follows:

Years Ended December 31,	
2007	\$ 960
2008	976
2009	991
2010	637
2011	21

Rent expense under operating leases was approximately \$991, \$1,006 and \$934 for the years ended December 31, 2006, 2005, 2004, respectively.

**15. Income Taxes**

The Company uses an asset and liability approach for financial accounting and reporting of income taxes. Deferred tax assets and liabilities are determined based on temporary differences between financial reporting and tax basis assets and liabilities and are measured by applying enacted rates and laws to taxable years in which differences are expected to be recovered or settled. Further, the effect on deferred tax assets and liabilities of a change in tax rates is recognized in income in the period that includes the enactment date.

The income tax provision (benefit) consists of the following:

	As of December 31,		
	2006	2005	2004
Current:			
Federal	\$	\$	\$
State	(49)	(88)	(264)
Total Current	\$ (49)	\$ (88)	\$ (264)
Deferred			
Federal and state	\$ (10,882)	\$ (5,823)	\$ (7,815)
Valuation allowance	10,882	5,823	7,815
Total Deferred	\$	\$	\$

Total provision	\$	(49)	\$	(88)	\$	(264)
-----------------	----	------	----	------	----	-------

F-27

**Table of Contents**

In 2006, the Company's tax benefit was reduced by \$19 to account for 2005 expenses that were originally claimed under the State of Connecticut research and development tax credit but were deemed unallowable.

A reconciliation of the provision for income taxes at statutory rates to the provision in the financial statements is as follows:

	Years Ended December 31,		
	2006	2005	2004
Federal statutory rate	(34.0)%	(34.0)%	(34.0)%
State tax, net of federal benefit	(5.0)%	(5.0)%	(5.0)%
Other	0.1%	0.1%	0.1%
Share-based compensation	2.3%		
Valuation allowance	36.6%	38.9%	38.9%
Research & development credit saleback	(0.2)%	(0.6)%	(1.5)%
	(0.2)%	(0.6)%	(1.5)%

Future tax benefits (deferred tax liabilities) related to temporary differences are as follows:

	As of December 31,	
	2006	2005
<b>Gross deferred tax assets:</b>		
Net operating losses	\$ 42,111	\$ 32,800
Tax credits (Federal and State)	3,957	2,619
Deferred revenue	2,185	2,159
Other	816	609
	\$ 49,069	\$ 38,187
Less valuation allowance	(49,069)	(38,187)
Net deferred tax asset	\$	\$

At December 31, 2006 and 2005, the Company had gross deferred income tax assets of approximately \$49,069 and \$38,187, respectively, which result primarily from net operating loss and tax credit carryforwards. Statement of Financial Standards No. 109 *Accounting for Income Taxes* (SFAS 109) requires that a valuation allowance be established when it is more likely than not that all or a portion of deferred tax assets will not be realized. A review of all positive and negative evidence is required when measuring the need for a valuation allowance. The Company's cumulative loss from inception represents sufficient negative evidence to require a valuation allowance. The Company concluded that it is appropriate to maintain a full valuation allowance for its net deferred tax assets. Additionally, the Company intends to maintain a valuation allowance until sufficient positive evidence exists to support its reversal.

At December 31, 2006 and 2005, the Company had available the following net operating loss and credit carryforwards:

	As of December 31,	
	2006	2005
Federal net operating loss carryforwards	\$ 101,201	\$ 78,773
State net operating loss carryforwards	102,709	80,234
Federal research and development carryforwards	2,393	2,246
State research and development carryforwards	1,563	1,417

The Company's federal net operating loss carryforwards expire commencing in fiscal 2018 through 2026 and state net operating loss carryforwards which expire commencing in fiscal 2020 through 2026.



**Table of Contents**

The Company's ability to utilize its federal net operating losses and federal tax credits may be limited under Section 382 and 383 of the Internal Revenue Code. The limitations apply if an ownership change, as defined by Section 382, occurs. Generally, an ownership change occurs when certain shareholders increase their aggregate ownership by more than 50 percentage points over their lowest ownership percentage in a testing period (typically 3 years). The company may already be subject a Section 382 limitation due to previous ownership changes. In addition, future changes in stock ownership may also trigger an ownership change and, consequently, a Section 382 limitation.

The State of Connecticut provides companies with the opportunity to exchange certain research and development credit carryforwards for cash in exchange for foregoing the carryforward of the research and development credit. The program provides for such exchange of the research and development credits at a rate of 65% of the annual research and development credit, as defined. As of December 31, 2006, 2005 and 2004, the Company had recorded a benefit of approximately \$68, \$88 and \$264, respectively, for the estimated proceeds from this exchange.

**16. Related Party**

In November 2004, the Company entered into the Gilead Arrangement with Gilead Sciences Inc. to jointly develop and commercialize compounds for use in treating hepatitis C infection which inhibit viral replication through a specified novel mechanism of action. Commercialization efforts will commence only if such compounds are found to be commercially viable and all appropriate regulatory approvals have been obtained (see Note 5).

In addition to being a collaboration partner, Gilead Sciences Inc. is also a shareholder of the Company. As of December 31, 2006, Gilead holds 1,116 shares, representing 6% of total shares outstanding.

**17. Unaudited Quarterly Results**

The following tables summarize unaudited quarterly financial data for the years ended December 31, 2006 and 2005. This data has been derived from unaudited financial statements that, in the Company's opinion, include all adjustments necessary for a fair presentation of such information. The operating results for any quarter are not necessarily indicative of results for any future period.

	<b>2006 Quarters</b>			
	<b>First</b>	<b>Second</b>	<b>Third</b>	<b>Fourth</b>
Total operating revenue	\$ 2,151	\$ 2,167	\$ 1,196	\$ (2,222)
Total operating expenses	7,406	5,949	6,323	7,928
Net loss	(5,347)	(3,819)	(5,116)	(9,804)
Net loss attributable to common shareholders	(6,375)	(5,077)	(6,523)	(10,274)
Net loss per share attributable to common shareholders basic and diluted	\$ (12.52)	\$ (9.92)	\$ (12.69)	\$ (.98)
Weighted average number of shares outstanding basic and diluted	509	512	514	10,470

	<b>2005 Quarters</b>			
	<b>First</b>	<b>Second</b>	<b>Third</b>	<b>Fourth</b>
Total operating revenue	\$ 2,677	\$ 2,187	\$ 2,293	\$ 1,369
Total operating expenses	5,509	5,525	5,179	5,000
Net loss	(3,025)	(3,603)	(3,125)	(3,822)
Net loss attributable to common shareholders	(3,718)	(4,296)	(3,818)	(4,682)
Net loss per share attributable to common shareholders basic and diluted	\$ (7.57)	\$ (8.59)	\$ (7.58)	\$ (9.23)
Weighted average number of shares outstanding basic and diluted	491	500	504	507



**Table of Contents**

The unaudited condensed financial statements for the periods ending March 31, 2006 and June 30, 2006 were previously reported in the Company's pre-effective S-1 filings dated May 17, 2006 and September 1, 2006, respectively. These periods were subsequently restated in the Company's pre-effective S-1 filing dated October 10, 2006 to include a \$81 and \$89, respectively, incremental compensation charge resulting from the fair value of options that were granted by the Company to its employees on December 20, 2005 (see Note 3). Subsequent to the issuance of its interim financial statements for June 30, 2006, the Company reassessed the fair value of its common stock and determined the exercise price of the employee stock options granted on December 20, 2005 was less than the reassessed fair value of the Company's common stock at the date of grant for accounting purposes. The following table reflects the summary financial data which was affected by this revision for the periods ending March 31, 2006 and June 30, 2006 as previously reported.

	2006 quarters as previously reported	
	First	Second
Total operating expenses	7,325	5,860
Net Loss	(5,266)	(3,730)
Net loss applicable to common shareholders	(6,294)	(4,988)
Net loss per share - basic and diluted	\$ (12.37)	\$ (9.74)

**18. Subsequent Events**

On February 8, 2007, the Company announced its decision to discontinue the development of GS 9132, also known as ACH-806, for the treatment of hepatitis C viral infection, based on preliminary data from a proof-of-concept trial. The Company and Gilead Sciences have elected to shift focus to the evaluation of other NS4A antagonists developed by the Company to identify a lead candidate for development.

Pursuant to a jointly-agreed upon research plan for these next generation NS4A antagonists adopted in February 2007, the joint research committee determined that Achillion would perform certain early-stage preclinical activities while Gilead Sciences would perform later preclinical and all clinical studies. Achillion would continue to be responsible for certain back-up activities until such time as proof-of-concept is achieved, and Gilead Sciences would continue to be responsible for manufacturing, formulation and commercialization activities.

On March 26, 2007, the Company and Gilead Sciences amended their collaboration agreement to provide for the equal sharing of only external program costs. Effective April 1, 2007, each party will bear their own full-time equivalent personnel costs, which under the current research plan will approximate one-half of total combined efforts.

**Table of Contents**

**EXHIBIT INDEX**

<b>Exhibit No.</b>	<b>Exhibit</b>
3.1#	Amended and Restated Certificate of Incorporation of the Registrant, as amended.
3.2#	Amended and Restated Bylaws.
4.1(1)	Specimen Certificate evidencing shares of common stock.
10.1(1)	Research Collaboration and License Agreement, dated November 24, 2004, by and between the Registrant and Gilead Sciences, Inc.
10.2#	Amendment Number 1 to Research Collaboration and License Agreement, dated November 24, 2004 by and between the Registrant and Gilead Sciences, Inc., dated March 26, 2007.
10.3(1)	License Agreement, dated February 3, 2000, by and between Vion Pharmaceuticals, Inc. and the Registrant, as amended on January 28, 2002.
10.4(1)	Letter Agreement, dated September 22, 2006, by and between the Registrant and Yale University.
10.5(1)	License Agreement, dated July 19, 2002 by and between the Registrant and Emory University.
10.6(1)	License Agreement, dated November 15, 2002, by and between The University of Maryland and the Registrant.
10.7*(1)	Employment Agreement between the Registrant and Michael Kishbauch, dated as of July 19, 2004.
10.8*(1)	Employment Agreement between the Registrant and Milind Desphande, dated as of September 10, 2003, as amended January 1, 2006.
10.9*(1)	Employment Agreement between the Registrant and John C. Pottage, dated as of September 10, 2003, as amended January 1, 2006.
10.10*#	Employment Agreement between the Registrant and Mary Kay Fenton, dated as of September 10, 2003, as amended January 1, 2006.
10.11*(1)	Employment Agreement between the Registrant and Gautam Shah, dated as of May 26, 2004, as amended January 1, 2006.
10.12(1)	Second Amended and Restated Investor Rights Agreement, dated as of November 17, 2005, by and among the Registrant and the Holders named therein.
10.13(1)	Third Amended and Restated Stockholders Agreement, dated as of November 17, 2005, by and among the Registrant and the Stockholders named therein.
10.14(1)	Promissory Notes and Master Security Agreement by and between the Registrant and Oxford Finance Corporation, dated as of December 30, 2005.
10.15(1)	Promissory Notes and Master Security Agreement by and between the Registrant and GE Capital Corporation, dated as of January 24, 2002, as amended.
10.16(1)	Lease Agreement by and between the Registrant and WE George Street LLC for Suite 202, dated as of March 6, 2002.
10.17(1)	Lease Agreement by and between the Registrant and WE George Street LLC, dated as of May, 2000.
10.18(1)	Lease Agreements and subsequent Assignment and Assumption of Lease Agreements by and between the Registrant, Yale University and WE George Street LLC for Suites 802, 803, 804.
10.19*(1)	1998 Stock Option Plan, as amended, dated March 30, 2001.

## **Table of Contents**

<b>Exhibit No.</b>	<b>Exhibit</b>
10.20*(1)	2006 Stock Incentive Plan as amended.
10.21*(1)	Form of Incentive Stock Option Agreement under the 1998 Stock Option Plan.
10.22*(1)	Form of Incentive Stock Option Agreement for Non-Executives under the 1998 Stock Option Plan.
10.23*(1)	Form of Nonstatutory Stock Option Agreement under the 1998 Stock Option Plan.
10.24*(1)	Form of Incentive Stock Option Agreement under the 2006 Stock Incentive Plan.
10.25*(1)	Form of Nonstatutory Stock Option Agreement under the 2006 Stock Incentive Plan.
10.26*(1)	2006 Employee Stock Purchase Plan as amended.
10.27(1)	Form of Common Stock Warrant.
10.28(1)	Form of Series C-2 Convertible Preferred Stock Warrant.
10.29(1)	Promissory Notes and Master Security Agreement by and between the Registrant and Webster Bank, dated as of May 15, 2003, as amended by the First, Second, Third and Fourth Amendments to Master Security Agreement, dated May 15, 2003, October 29, 2004, March 24, 2005 and August 7, 2006, respectively.
10.30(1)	Loan Agreement by and between the Registrant and Connecticut Innovations, Incorporated, dated March 30, 2001.
10.31(1)	Common Stock Warrants issued to Connecticut Innovations, Inc. on March 29, 2001 and November 7, 2000.
23.1#	Consent of PricewaterhouseCoopers LLP, Independent Registered Public Accounting Firm.
31.1#	Certification of Chief Executive Officer pursuant to Rule 13a-14(a)/Rule 15d-14(a) of the Securities Exchange Act of 1934, as amended
31.2#	Certification of Chief Financial Officer pursuant to Rule 13a-14(a)/Rule 15d-14(a) of the Securities Exchange Act of 1934, as amended
32.1#	Certification of Chief Executive Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002
32.1#	Certification of Chief Financial Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002

\* Management contracts or compensatory plans or arrangement

Indicates confidential treatment requested as to certain portions, which portions were omitted and filed separately with the Securities and Exchange Commission pursuant to a Confidential Treatment Request.

# Filed herewith

(1) Incorporated herein by reference to our Registration Statement on Form S-1 filed on March 31, 2006, as amended (File No. 333-132921).