VERTEX PHARMACEUTICALS INC / MA
Form 10-K
February 17, 2011

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UNITED STATES
SECURITIES AND EXCHANGE COMMISSION

WASHINGTON, D.C. 20549

FORM 10-K

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

For the Fiscal Year Ended December 31, 2010

or

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

For the transition period from _____ to _____
Commission file number 000-19319

Vertex Pharmaceuticals Incorporated

(Exact name of registrant as specified in its charter)

Massachusetts	**04-3039129**
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification No.)
130 Waverly Street, Cambridge, Massachusetts	**02139-4242**
(Address of principal executive offices)	(Zip Code)

Registrant's telephone number, including area code **(617) 444-6100**

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

Title of Each Class	**Name of Each Exchange on Which Registered**

Common Stock, $0.01 Par Value Per Share	The NASDAQ Global Select Market
Rights to Purchase Series A Junior Participating Preferred Stock	

Securities registered pursuant to Section 12(g) of the Exchange 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 ý No o

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

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 ý No o

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes ý No o

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. ý

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

Large accelerated filer ý	Accelerated filer o	Non-accelerated filer o (Do not check if a smaller reporting company)	Smaller reporting company o

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

The aggregate market value of the registrant's common stock held by non-affiliates of the registrant (without admitting that any person whose shares are not included in such calculation is an affiliate) based on the last reported sale price of the common stock on June 30, 2010 (the last trading day of the registrant's second fiscal quarter of 2010) was $6.6 billion. As of February 9, 2011, the registrant had 204,412,712 shares of common stock outstanding.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the definitive Proxy Statement for the 2011 Annual Meeting of Shareholders to be held on May 12, 2011 are incorporated by reference into Part III of this Annual Report on Form 10-K.

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VERTEX PHARMACEUTICALS INCORPORATED

ANNUAL REPORT ON FORM 10-K

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"We," "us," "Vertex" and the "Company" as used in this Annual Report on Form 10-K, refer to Vertex Pharmaceuticals Incorporated, a Massachusetts corporation, and its subsidiaries.

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PART I

ITEM 1. BUSINESS

OVERVIEW

We are in the business of discovering, developing and commercializing small molecule drugs for the treatment of serious diseases. In November 2010, we submitted a new drug application, or NDA, requesting approval to market telaprevir in the United States for the treatment of patients with chronic hepatitis C virus, or HCV, infection. In January 2011, we received priority review designation for our telaprevir NDA from the United States Food and Drug Administration, or FDA, and the target date for the FDA to complete its review of the telaprevir NDA is May 23, 2011. We expect to obtain approval for and initiate sales of telaprevir in the United States in 2011. We are pursuing a number of other clinical development programs, including a registration program for VX-770, the lead drug candidate in our cystic fibrosis, or CF, program. We plan to continue investing in our research and development programs and to develop and commercialize selected drug candidates that emerge from those programs, alone or with third-party collaborators.

OUR PIPELINE

Our pipeline is described in the following table. In addition to the drug candidates listed below, we are engaging in Phase 1 clinical trials and/or nonclinical activities with respect to a number of additional drug candidates, including compounds intended for the treatment of HCV infection, CF and influenza.

Drug Candidate	Clinical Indication	Mechanism/Target	Development Stage	Collaborator(s)
HCV Infection				
telaprevir (VX-950)	HCV Infection	HCV Protease Inhibitor	NDA accepted with priority review designation granted	Janssen Pharmaceutica, N.V.; Mitsubishi Tanabe Pharma Corporation
VX-222	HCV Infection	HCV Polymerase Inhibitor	Phase 2a	
Cystic Fibrosis				
VX-770	Cystic Fibrosis	CFTR Potentiator	Phase 3	Cystic Fibrosis Foundation Therapeutics Incorporated
VX-809	Cystic Fibrosis	CFTR Corrector	Phase 2a	Cystic Fibrosis Foundation Therapeutics Incorporated
Immune-mediated Inflammatory Diseases				
VX-509	Rheumatoid Arthritis	JAK3 Inhibitor	Phase 2a	
Epilepsy				
VX-765	Epilepsy	Caspase-1 Inhibitor	Phase 2a	

OUR STRATEGY

Our goal is to be a biopharmaceutical company with industry-leading capabilities in the research, development and commercialization of innovative drugs that provide substantial benefits to patients with serious diseases. The key elements of our strategy are:

Obtain FDA marketing approval for and effectively commercialize telaprevir in the United States. We are focused on obtaining approval for and successfully commercializing telaprevir as a treatment for patients infected with genotype 1 HCV. We have submitted our NDA for telaprevir to the FDA and plan to initiate sales of telaprevir in the United States in 2011. We are seeking approval to market telaprevir as a treatment for patients infected with genotype 1 HCV who have not received previous treatment for their infection, referred to as treatment-naïve patients, and patients infected with

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genotype 1 HCV who have failed to achieve a sustained viral response, or SVR, after prior treatment with pegylated-interferon, or peg-IFN, and ribavirin, or RBV, referred to as treatment-failure patients.

Become a biopharmaceutical company capable of discovering, developing and commercializing medicines. We believe we need an effective sales and marketing organization to augment our research capabilities, late-stage development organization and third-party manufacturing relationships. In 2010, we established a sales and marketing organization in the United States to support the sale of telaprevir, if approved. In order to support the potential Canadian launch of telaprevir, we have begun establishing sales and marketing capabilities in Canada. If our registration program for VX-770 is successful, we also intend to establish sales and marketing capabilities in Europe in order to prepare for potential commercial sales of VX-770 in international markets.

Invest in research and early-stage and mid-stage clinical development programs. We intend to continue to invest significant resources in research programs and early-stage and mid-stage clinical development programs as part of our strategy to develop drug candidates in disease areas with significant unmet medical need. In 2011, we are continuing to conduct Phase 2 clinical trials involving drug candidates that could address significant unmet needs in HCV, CF, rheumatoid arthritis and epilepsy. We expect to continue focusing our research activities toward therapies addressing serious diseases, because we believe these therapies have the potential to deliver the greatest value for patients, physicians and the health care system.

Capitalize on collaboration arrangements and business development opportunities. Collaborations have provided us with financial support and other valuable resources for our development and research programs, and business development opportunities have provided us with drug candidates and important research resources that have contributed to a number of the drug candidates in our current development pipeline. We plan to continue to rely on collaborators to support, develop and/or commercialize some of our drug candidates in markets in which we are not concentrating our resources. We also opportunistically seek to license or acquire drugs, drug candidates and other technologies that have the potential to strengthen our pipeline, drug discovery platform or commercial opportunities.

DRUG CANDIDATES

HCV Infection

Telaprevir (VX-950) (investigational oral HCV protease inhibitor for the treatment of HCV infection)

Telaprevir, our lead drug candidate, is an orally-administered hepatitis C protease inhibitor that we have evaluated in treatment-naïve and treatment-failure patients with genotype 1 HCV infection in combination with peg-IFN and RBV. Telaprevir works by inhibiting the NS3-4A serine protease, an enzyme necessary for HCV replication.

We have collaboration agreements with Janssen Pharmaceutica, N.V., or Janssen, a Johnson & Johnson company, and Mitsubishi Tanabe Pharma Corporation, or Mitsubishi Tanabe, relating to the development and commercialization of telaprevir. Pursuant to these agreements, we are responsible for the commercialization of telaprevir in North America, Mitsubishi Tanabe is responsible for the commercialization of telaprevir in certain Far East countries, including Japan, and Janssen is responsible for the commercialization of telaprevir in the rest of the world. Telaprevir was discovered in our collaboration, now ended, with Eli Lilly and Company. We expect to pay Eli Lilly certain royalties on future sales of telaprevir.

On November 23, 2010, the FDA received our NDA for telaprevir. In January 2011, the telaprevir NDA was accepted for filing by the FDA, and we received priority review designation. The FDA's target review completion date for telaprevir is May 23, 2011. The FDA's regulatory review process for

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the telaprevir NDA includes, among other things, a detailed review by the FDA of the data and information contained in the NDA, meetings and frequent communications between us and representatives of the FDA, and FDA inspections, including inspections of clinical trial sites and third-party facilities used to manufacture telaprevir. If applicable regulatory criteria are not satisfied, the FDA could refuse to approve or delay the approval of the telaprevir NDA. In addition, we have completed our New Drug Submission to the Therapeutic Product Directorate of Health Canada. Telaprevir was granted priority review in Canada. We are seeking to obtain approval for and launch telaprevir in Canada in the second half of 2011.

In December 2010, Janssen announced that the marketing authorization application, or MAA, for telaprevir was granted accelerated assessment by the European Medicines Agency, or EMA, in the European Union. Review under the accelerated assessment procedure is provided by the EMA for drug candidates of major therapeutic interest and shortens the timeframe for review by the EMA. In the first quarter of 2011, the EMA accepted the telaprevir MAA. Janssen is seeking to obtain approval for and launch telaprevir in the European Union in the second half of 2011.

Background: Prevalence and Treatment of Hepatitis C Virus Infection

Exposure to the hepatitis C virus often leads to chronic infection, although patients frequently do not have symptoms and are unaware that they have become infected. Over time, liver inflammation develops in many patients, which can progress to scarring of the liver, called fibrosis, or more advanced scarring of the liver, called cirrhosis. Patients with cirrhosis may go on to develop liver failure or other complications of cirrhosis, including liver cancer. The World Health Organization has reported that HCV infection is responsible for more than 50% of all liver cancer cases and two-thirds of all liver transplants in the developed world.

The World Health Organization has estimated that about 170 million people are chronically infected with HCV worldwide and that an additional 3 million to 4 million people are infected each year. The Centers for Disease Control and Prevention have estimated that approximately 3.2 million people in the United States are chronically infected with HCV. The Institute of Medicine has estimated the infected population to be between 2.7 million and 3.9 million people.

Our clinical development activities related to telaprevir are focused on genotype 1 HCV infection, which is the most prevalent form of HCV infection in the United States, the European Union and Japan. We believe that approximately 2.6 million patients in the United States have genotype 1 HCV infection. We believe that these patients include approximately 750,000 patients who already have been diagnosed with genotype 1 HCV infection and 1.8 million patients who remain undiagnosed.

In addition to being the most prevalent form of HCV infection, infection with genotype 1 HCV is the most difficult to treat of the primary HCV genotypes. The current standard treatment for infection with genotype 1 HCV, which was first approved in 2001, is a combination of peg-IFN and RBV, generally administered for 48 weeks. This treatment regimen is associated with significant side-effects, including fatigue, flu-like symptoms, rash, depression and anemia. Among patients who begin treatment, a significant percentage of patients infected with genotype 1 HCV fail to achieve a long-term sustained response to therapy. In a clinical trial conducted by another company, involving approximately 3,070 treatment-naïve patients in the United States infected with genotype 1 HCV, between 59% and 62% of patients receiving peg-IFN and RBV failed to achieve an SVR. On an intent-to-treat basis, 56% of treatment-naïve patients in the control arm of our Phase 3 ADVANCE clinical trial, who received the current standard treatment for genotype 1 HCV infection, failed to achieve an SVR. We believe that there are over 250,000 patients infected with genotype 1 HCV in the United States who have failed to achieve an SVR after therapy with peg-IFN and RBV.

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Telaprevir Clinical Development

Our registration program for telaprevir included the REALIZE clinical trial, a Phase 3 clinical trial in patients infected with genotype 1 HCV who failed to achieve an SVR with prior interferon-based treatment, and two Phase 3 clinical trials, ADVANCE and ILLUMINATE, in treatment-naïve patients infected with genotype 1 HCV.

REALIZE

REALIZE was a pivotal three-arm double-blinded placebo-controlled clinical trial of telaprevir-based treatment regimens that enrolled 662 patients with genotype 1 HCV infection who failed to achieve an SVR after treatment with peg-IFN and RBV. Patients were randomized 2:2:1 to the two telaprevir-based treatment arms and the control arm, respectively. REALIZE included the following patient groups:

null responders those patients who experienced at week 12 of prior therapy less than a 2 $\log_{10}$ reduction in HCV RNA levels;

partial responders those patients who experienced in their prior course of therapy at least a 2 $\log_{10}$ reduction in HCV RNA levels at week 12, but who failed to achieve undetectable HCV RNA levels by week 24; and

relapsers those patients who experienced undetectable HCV RNA levels at the completion of at least 42 weeks of prior treatment, but who relapsed after treatment ended.

REALIZE is the only Phase 3 clinical trial of an HCV protease inhibitor to date to enroll null responders. REALIZE's primary endpoint was SVR, defined as the percentage of patients who had undetectable HCV RNA levels both at the end of treatment and 24 weeks after the end of treatment, measured on an intent-to-treat basis. SVR was measured in each of the two telaprevir-based treatment arms compared to the control arm, as well as across the three subgroups of patients in the trial arms. One of the two telaprevir-based treatment arms evaluated a lead-in approach in which patients received four weeks of pre-treatment with peg-IFN and RBV before receiving telaprevir. Another objective of REALIZE was to explore the safety of telaprevir when dosed in combination with peg-IFN and RBV.

The following table sets forth the SVR rates on an intent-to-treat basis for patients in the control arm and the combined telaprevir-based treatment arms. In addition, the table includes a supplemental pooled analysis of the SVR rates on an intent-to-treat basis of the relapser and partial responder patients together, across both the control arm and the two telaprevir-based treatment arms combined.

	Relapsers	Partial Responders	Null Responders	Overall
All telaprevir-based treatment arms	86%	57%	31%	65%
	(245/286)	(55/97)	(46/147)	(346/530)
	Pooled Results: 78% (300/383)			
Control arm	24%	15%	5%	17%
	(16/68)	(4/27)	(2/37)	(22/132)
	Pooled Results: 21% (20/95)			

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The table below sets forth the SVR rates on an intent-to-treat basis in each of the arms across the three subgroups of patients.

	Relapsers	Partial Responders	Null Responders	Overall
Telaprevir-based treatment arm (simultaneous start):				
telaprevir in combination with peg-IFN and RBV for 12 weeks, followed by peg-IFN combined with RBV for 36 weeks	83%	59%	29%	64%
Telaprevir-based treatment arm (lead-in approach):				
peg-IFN and RBV for 4 weeks, followed by telaprevir in combination with peg-IFN and RBV for 12 weeks, followed by peg-IFN combined with RBV for 32 weeks	88%	54%	33%	66%
Control arm:				
peg-IFN combined with RBV for 48 weeks	24%	15%	5%	17%

ADVANCE

ADVANCE was a pivotal three-arm double-blinded placebo-controlled clinical trial that enrolled 1,088 treatment-naïve patients with genotype 1 HCV infection. ADVANCE had two telaprevir-based treatment arms, one in which patients received 12 weeks of telaprevir-based triple combination therapy and one in which patients received 8 weeks of telaprevir-based triple combination therapy, in each case taking additional peg-IFN and RBV for a period of time after completing telaprevir dosing. Patients in both of the telaprevir-based treatment arms who met criteria for extended rapid viral response, or eRVR, completed all treatment after 24 weeks, while patients who responded to treatment but did not meet the eRVR criteria continued receiving peg-IFN and RBV for a total of 48 weeks of therapy. To satisfy our eRVR criteria, a patient must have had undetectable HCV RNA levels at the end of week 4 and week 12 after the start of treatment.

The primary endpoint of ADVANCE was SVR in each of the telaprevir-based treatment arms compared to the control arm. Another objective of ADVANCE was to explore the safety and tolerability of telaprevir when dosed in combination with peg-IFN and RBV. The SVR rates on an intent-to-treat basis for patients in ADVANCE are set forth in the table below.

	SVR Rates
12-week telaprevir-based treatment arm:	
telaprevir in combination with peg-IFN and RBV for 12 weeks, followed by peg-IFN combined with RBV for 12 weeks or 36 weeks	75%
8-week telaprevir-based treatment arm:	
telaprevir in combination with peg-IFN and RBV for 8 weeks, followed by peg-IFN combined with RBV for 16 weeks or 40 weeks	69%
48-week control arm:	
48 weeks of therapy with peg-IFN and RBV	44%

ILLUMINATE

ILLUMINATE was a supplemental Phase 3 clinical trial that included evaluation of 24-week and 48-week total treatment durations in treatment-naïve patients infected with genotype 1 HCV who achieved an eRVR in response to a telaprevir-based treatment regimen. This clinical trial was a randomized, open-label trial that enrolled 540 patients. ILLUMINATE was designed to supplement SVR data obtained from ADVANCE by evaluating the benefits and risks, for patients achieving an eRVR, of extending total treatment duration from 24 to 48 weeks. The SVR rates from the trial met predefined non-inferiority criteria established to compare the 24-week regimen and the 48-week regimen and thus indicated that there was no additional benefit to extending treatment to 48 weeks in

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patients who achieve an eRVR. The following table provides SVR rates for patients who achieved an eRVR at week 4 and week 12, and remained on treatment through week 20.

	SVR Rate (For Patients Who Achieved eRVR)	Patients with SVR/Total Patients (Who Achieved eRVR)
24-week telaprevir-based treatment regimen:		
telaprevir in combination with peg-IFN and RBV for 12 weeks, followed by peg-IFN combined with RBV for 12 weeks	92%	149/162
48-week telaprevir-based treatment regimen:		
telaprevir in combination with peg-IFN and RBV for 12 weeks, followed by peg-IFN combined with RBV for 36 weeks	88%	140/160

The overall SVR rate for the patients enrolled in ILLUMINATE on an intent-to-treat basis was 72%. For patients who received the 24-week telaprevir-based treatment regimen after achieving an eRVR, remained on treatment through week 20 and had undetectable HCV levels at the end of treatment, the relapse rate was 5.7% (9/159). The relapse rate for patients who achieved an eRVR and received the 48-week telaprevir-based treatment regimen was 1.9% (3/154).

Safety and Tolerability

The safety and tolerability results of telaprevir-based combination therapy were consistent across the Phase 3 clinical trials. The most common adverse events, regardless of treatment regimen, were rash, fatigue, pruritis, headache, nausea, anemia, insomnia, diarrhea, flu-like symptoms and pyrexia. The majority were graded mild or moderate in severity.

Discontinuation of all study drugs in REALIZE, ADVANCE and ILLUMINATE during the telaprevir-based dosing period was as follows:

	Discontinuation of All Study Drugs During Telaprevir-dosing Period		
	Total	Rash	Anemia
REALIZE			
Telaprevir-based treatment arms:	4%	0.4%	0.6%
Control arm:	3%	0.0%	0.0%
ADVANCE			
12-week telaprevir-based treatment arm:	7%	1.4%	0.8%
8-week telaprevir-based treatment arm:	8%	0.5%	3.3%
Control arm:	4%	0.0%	0.6%
ILLUMINATE			
Telaprevir-based treatment regimen (no control arm):	7%	0.6%	1.1%

Additional Telaprevir Clinical Trials

In addition to our registration program for telaprevir, we have ongoing and planned clinical trials exploring telaprevir-based treatment regimens that may offer advantages to the regimens evaluated in our completed Phase 3 clinical trials. The first of these trials is an ongoing Phase 3b clinical trial, referred to as OPTIMIZE, designed to evaluate twice-daily dosing of telaprevir compared to three-times-daily dosing. We also are planning a Phase 2 clinical trial designed to evaluate shorter duration telaprevir-based treatment regimens for specific patient populations. We have ongoing and planned clinical trials designed to evaluate the potential for telaprevir to address other patient populations, including an ongoing Phase 2 clinical trial involving patients co-infected with genotype 1 HCV and the human immunodeficiency virus, or HIV. We also are planning a Phase 2 clinical trial in patients with

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recurrent genotype 1 HCV infection who have received a liver transplant and are receiving commonly used immunosuppressive agents.

Mitsubishi Tanabe Clinical Program

Mitsubishi Tanabe has conducted Phase 3 clinical trials of telaprevir-based combination therapy in Japan that involved approximately 300 treatment-naïve and treatment-failure patients with HCV infection. Mitsubishi Tanabe filed for regulatory approval of telaprevir in Japan in January 2011.

VX-222 (investigational oral HCV polymerase inhibitor for the treatment of HCV infection)

HCV polymerase inhibitors, including our HCV polymerase inhibitor VX-222, are direct-acting antiviral agents that inhibit the replication of HCV, but through a mechanism distinct from HCV protease inhibitors such as telaprevir. We are conducting a Phase 2a clinical trial in patients with genotype 1 HCV designed to evaluate response-guided combination treatment regimens of telaprevir and VX-222. Dosing in this clinical trial began in August 2010. This trial originally included two treatment arms of patients receiving two-drug treatment regimens consisting of telaprevir and VX-222 and two treatment arms of patients receiving four-drug treatment regimens consisting of telaprevir, VX-222, peg-IFN and RBV. In the fourth quarter of 2010, we discontinued both of the two-drug treatment arms because patients in those arms met a pre-defined stopping rule related to viral breakthrough. The remaining two original treatment arms, with four-drug treatment regimens, are continuing without modification. In the four-drug treatment arms, patients who meet pre-defined rapid response criteria complete all treatment after 12 weeks and patients who respond to treatment but do not meet the rapid response criteria continue receiving peg-IFN and RBV for a total of 24 weeks of therapy. In the first quarter of 2011, we plan to begin enrolling patients in a new treatment arm for this clinical trial to evaluate 12-week or 24-week response-guided treatment regimens with telaprevir, VX-222 and RBV but without peg-IFN. We believe the initiation of this treatment arm is supported by emerging data from multiple ongoing clinical trials of direct-acting antiviral therapies, including trials of telaprevir/VX-222-based combination therapy, which suggest that adding RBV to a direct-acting antiviral treatment regimen may increase antiviral activity.

In addition to the clinical trial evaluating VX-222 in combination with telaprevir, we are conducting a Phase 2a clinical trial to evaluate multiple doses of VX-222 in combination with only peg-IFN and RBV. This Phase 2a clinical trial is designed to evaluate the safety, tolerability and antiviral activity of two dose levels of VX-222 (400 mg and 750 mg) in a total of 50 patients with genotype 1 HCV infection. Patients in the clinical trial are receiving VX-222 in combination with peg-IFN and RBV for 12 weeks, followed by peg-IFN and RBV for 36 weeks.

Cystic Fibrosis

Cystic fibrosis is a genetic disorder that affects about 30,000 people in the United States and 70,000 people worldwide. The drug candidates that we are developing for CF were selected because of their potential to address the underlying cause of CF by increasing the function of a defective protein in patients with CF, known as the cystic fibrosis transmembrane conductance regulator, or CFTR. The underlying cause of CF is a genetically inherited deficiency in the production or activity of the CFTR protein. The CFTR protein is involved in controlling the movement of chloride ions into and/or out of cells in the lung, sweat glands, pancreas and other organs. While CF is a systemic disease, progressive loss of lung function is the primary cause of increased mortality in patients with CF. Abnormally thick mucus in the lungs of patients with CF leads to chronic lung infections, lung inflammation and progressive decline in lung function. Some patients with CF also experience problems with digestion, due to a lack of CFTR function in the pancreas, resulting in the need for enzyme replacement therapy. According to the Cystic Fibrosis Foundation in 2008, the predicted median survival for patients with cystic fibrosis is 37 years.

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CF develops when neither of the two copies of the *CFTR* gene, referred to as alleles, produce sufficient functional CFTR protein. There are numerous mutations in the *CFTR* gene that result in CF, including the G551D mutation and the F508del mutation. The G551D mutation results in a defect known as a gating defect, in which the CFTR protein reaches the cell surface but does not efficiently transport chloride ions across the cell membrane. The F508del mutation results in a defect known as a trafficking defect, in which the CFTR protein does not reach the cell surface in sufficient quantities.

According to the 2007 Cystic Fibrosis Foundation Patient Registry Annual Data Report in the United States, approximately 4% of patients with CF have the G551D mutation on at least one allele, 49% of patients with CF have the F508del mutation on both alleles and an additional approximately 38% of patients with CF have the F508del mutation on one allele. There are numerous other less prevalent CF mutations that result in gating and/or trafficking defects.

There is no available therapy that improves the function of defective CFTR proteins. Instead, available treatments for CF pulmonary disease focus on improving mucus clearance from the lungs as well as treating lung infections and inflammation. Improved mucus clearance is sought through physical therapy, inhalation of a mucus thinning drug such as Pulmozyme (dornase alpha), or inhalation of hypertonic saline. Lung infections are treated with inhaled and systemic antibiotics while inflammation is treated with anti-inflammatory agents like ibuprofen. In addition, the majority of CF patients take pancreatic enzyme supplements to assist with food absorption in digestion.

FEV_1, a measure of the amount of air that an individual can exhale in one second, is a test used to evaluate lung function. CF is characterized by progressive decreases in FEV_1 values compared to FEV_1 values observed in healthy individuals. The FEV_1 test has been used as an efficacy endpoint during testing of the currently approved pulmonary drugs for the treatment of CF. Since CF is a chronic disease, pivotal clinical trials of CF drug candidates have involved the measurement of FEV_1 values over a number of months. Mean increases in percent predicted FEV_1 of between 5% and 10% over 24-week periods have been observed in the pivotal clinical trials of the mucus thinning drugs and antibiotics most widely used for the management of CF.

We are conducting clinical trials of two drug candidates, VX-770 and VX-809, that were selected because of their potential to improve the function of defective CFTR proteins in patients with CF. We discovered VX-770 and VX-809 in our research collaboration with The Cystic Fibrosis Foundation Therapeutics Incorporated, or CFFT, and with the support and participation of the Cystic Fibrosis Foundation. We hold worldwide development and commercialization rights to VX-770 and VX-809, and we will pay royalties to CFFT on any future sales of VX-770 or VX-809.

VX-770 (investigational oral CFTR potentiator for the treatment of CF)

VX-770 is an investigational oral drug candidate that has the potential to increase chloride ion transport across cell membranes by partially restoring the activity of defective CFTR protein on the surface of the cells. In May 2009, we initiated a registration program, referred to as ENDEAVOR, for VX-770. The VX-770 registration program focuses on patients with the G551D mutation, because the G551D mutation is the most prevalent gating mutation in patients with CF. The registration program consists of three clinical trials designed to evaluate the safety and efficacy of VX-770.

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The primary clinical trial, which is referred to as STRIVE, is a Phase 3 clinical trial of VX-770 that enrolled approximately 170 patients 12 years of age and older with the G551D mutation on at least one of the patient's two *CFTR* genes, or alleles. In this randomized, placebo-controlled, double-blind, parallel-group clinical trial, patients received either VX-770 or placebo for 48 weeks. The second clinical trial, which is referred to as ENVISION, is a Phase 3 clinical trial of VX-770 in patients between 6 to 11 years of age with the G551D mutation on at least one allele. ENVISION is a two-part, randomized, placebo-controlled, double-blind, parallel-group clinical trial of VX-770. We have completed Part 1 of ENVISION, which evaluated single-dose pharmacokinetics to determine the dose selection for children ages 6 to 11. Part 2 of the ENVISION trial enrolled approximately 50 patients who are receiving either VX-770 or placebo for 48 weeks. The primary endpoint for the STRIVE and ENVISION clinical trials is absolute change from baseline in percent predicted FEV_1 through week 24. Additional FEV_1 measurements taken through 48 weeks are a secondary endpoint. Secondary endpoints, including sweat chloride levels, will be measured to evaluate the effectiveness of VX-770 in improving the function of the defective CFTR protein.

The third clinical trial, which is referred to as DISCOVER, is a Phase 2 exploratory clinical trial of VX-770 that enrolled approximately 120 patients with CF who are 12 years of age and older and who have the F508del mutation on both alleles. In this randomized, placebo-controlled, double-blind, parallel-group trial, patients received either VX-770 or placebo for 16 weeks. The primary endpoints of the DISCOVER clinical trial are safety and change from baseline in percent predicted FEV_1 through week 16. Additional secondary endpoints, including sweat chloride levels, were measured. Based on data from our clinical trials and *in vitro* data to date, we anticipate that further clinical trials in patients homozygous for the F508del mutation will involve two drug candidates in combination, with one compound designed to address trafficking defects, such as VX-809, and another compound designed to address gating defects, such as VX-770.

We completed patient dosing in STRIVE in the first quarter of 2011 and in DISCOVER in 2010, and we expect to receive data from both these clinical trials in the first quarter of 2011. We expect to complete patient dosing in ENVISION in the first half of 2011 and to receive data from ENVISION in mid-2011. If our registration program for VX-770 is successful, we could submit an NDA and an MAA for VX-770 in the second half of 2011.

Completed Phase 2a Clinical Trial of VX-770

The Phase 2a clinical trial of VX-770 that preceded the ongoing registration program enrolled 39 patients with the G551D mutation on at least one allele, 20 of whom were enrolled in Part 1 of the clinical trial and 19 of whom were enrolled in Part 2 of the clinical trial. Patients in Part 1 of this clinical trial were dosed with VX-770 or placebo over 14 day periods. In Part 2 of this Phase 2a clinical trial, patients were dosed over 28 days in the following three arms: eight patients received 150 mg of VX-770 twice daily; seven patients received 250 mg of VX-770 twice daily; and four patients received a placebo twice daily. The primary endpoint of this Phase 2a clinical trial was safety. There were no serious adverse events attributable to VX-770 in this clinical trial, and no patients discontinued treatment over the 28-day dosing period of Part 2 of this clinical trial. The safety data from this clinical trial supported the initiation of the registration program for VX-770.

The secondary endpoints of this Phase 2a clinical trial measured lung function and CFTR protein function. We measured changes in lung function using FEV_1, and we evaluated CFTR activity through measurements of sweat chloride levels. Elevated sweat chloride levels high levels of salt in sweat occur in CF patients and result directly from defective CFTR activity in epithelial cells in the sweat ducts. Patients with CF typically have elevated sweat chloride levels that are in excess of 60 mmol/L, compared to normal values of less than 40 mmol/L. A summary of data regarding lung function and biomarkers of the CFTR protein function, including "p-values" from Part 2 of this Phase 2a clinical trial, is set forth in the table below. The result of statistical testing is often defined in terms of a

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statistical "p-value," with a p-value of 0.05 or less generally considered to represent a statistically significant difference.

Number of Patients	Treatment Arm	FEV_1 Mean Increase from Baseline at Day 28 (p-value)	Sweat Chloride Mean Decrease from Baseline at Day 28 (p-value)	Sweat Chloride Baseline
8	150 mg	11.6% (p<0.01)	-52.8 mmol/L (p<0.01)	102 mmol/L
7	250 mg	7.4% (p<0.05)	-32.4 mmol/L (p<0.05)	95 mmol/L
4	Placebo	7.0% (p=0.13)	+4.8 mmol/L (p=0.38)	98 mmol/L

VX-809 (investigational oral CFTR corrector compound for the treatment of CF)

We are evaluating VX-809, an oral corrector compound that was selected because of its potential to increase the concentration of CFTR proteins on cell surfaces in patients with the F508del mutation, a mutation that results in a trafficking defect. *In vitro*, studies of correctors have suggested that these compounds can restore function of defective F508del CFTR protein, with increased trafficking of F508del CFTR protein to the cell surface and enhanced gating activity of F508del CFTR protein on the cell surface.

In the first quarter of 2010, we completed a Phase 2a, 28-day clinical trial of VX-809 as a single agent in 89 patients 18 years of age or older with the F508del mutation on both alleles. This Phase 2a clinical trial was a randomized, double-blind, placebo-controlled, multiple dose clinical trial. Patients received one of four doses of VX-809, or placebo, in addition to standard therapies for 28 days. The trial was designed primarily to evaluate the safety and tolerability of VX-809. Multiple secondary endpoints were utilized to determine any effect of VX-809 on CFTR protein function and lung function.

VX-809 was well-tolerated through 28 days of 25 mg, 50 mg, 100 mg and 200 mg once-daily dosing. In the trial, one patient discontinued treatment in each of the VX-809 treatment arms due to adverse events. Respiratory-related adverse events were the most commonly reported adverse events in the trial.

We also evaluated several secondary endpoints in the Phase 2a clinical trial. In the trial, there was a statistically significant decline in sweat chloride, compared to the baseline value prior to treatment, at both the 100 mg and 200 mg once-daily doses, suggesting that the activity of the CFTR protein was increased in patients during dosing. Additionally, we observed a dose response correlation with change in sweat chloride across the four dose groups. A summary of the data regarding sweat chloride levels from this Phase 2a clinical trial is set forth in the table below. The patients' mean baseline sweat chloride levels were approximately 100 mmol/L, which is consistent with sweat chloride measurements of patients with severe CF.

Treatment Arm	Mean Change in Sweat Chloride Levels from Baseline at Day 28	p-value
25 mg (once-daily)	0.1 mmol/L	.9753
50 mg (once-daily)	-4.6 mmol/L	.1323
100 mg (once-daily)	-6.1 mmol/L	.0498
200 mg (once-daily)	-8.2 mmol/L	.0092

The trial also included additional secondary endpoints to evaluate CFTR protein function, including CFTR protein trafficking, and lung function. The results from this Phase 2a clinical trial did not show any change in lung function, as measured by FEV_1.

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Phase 2a Combination Clinical Trial of VX-770 and VX-809

We are conducting a Phase 2a combination clinical trial of VX-770 and VX-809 in patients with the F508del mutation on both alleles. Enrollment is ongoing in Part 1 of this trial, which is designed to evaluate a 200 mg dose of VX-809, or placebo, alone for 14 days and then in combination with VX-770, or placebo, for 7 days. We expect to receive interim data from Part 1 of this combination trial in the first half of 2011.

Immune-mediated Inflammatory Diseases

VX-509 (investigational oral JAK3 inhibitor for the treatment of immune-mediated inflammatory diseases)

VX-509 is designed to inhibit Janus kinase 3, or JAK3, which is involved in signaling pathways that control the survival and proliferation of a type of white blood cell referred to as a lymphocyte. Because of JAK3's role in lymphocyte biology, we believe it is a promising target for the design of immunosuppressant drugs for treatment of a variety of immune-mediated diseases. Based on *in vitro* data, VX-509 appears to be a potent and selective inhibitor of JAK3.

In 2010, we initiated a Phase 2a clinical trial of VX-509 in patients with moderate-to-severe rheumatoid arthritis, or RA. We expect to enroll approximately 200 patients in this double-blind, randomized, placebo-controlled trial, which will evaluate the safety, tolerability and clinical activity of four doses of VX-509. Patients are receiving 12 weeks of treatment with VX-509 dosed twice daily compared to placebo. The primary endpoints of this clinical trial are to evaluate safety and to measure clinical signs and symptoms of RA in patients after 12 weeks of treatment. Efficacy assessments include the American College of Rheumatology criteria ACR20, ACR50 and ACR70 for defining clinical improvement in patients with RA. ACR20, ACR50 and ACR70 are standardized measures of the number of patients who achieve at least a 20, 50 or 70 percent improvement, respectively, in ACR-specified measures of RA activity. The trial also utilizes disease activity scores, or DAS, and European League Against Rheumatism, or EULAR, response criteria as additional efficacy assessments. We expect to complete enrollment in this clinical trial in the first quarter of 2011 and to obtain clinical data, including measurements of safety, tolerability and clinical activity, in the third quarter of 2011.

Epilepsy

VX-765 (investigational oral Caspase-1 inhibitor for the treatment of epilepsy)

VX-765 is designed to inhibit Caspase, which is an enzyme that controls the generation of two cytokines, IL-1β and IL-18, that are believed to mediate a wide range of immune and inflammatory responses in many cell types. Epilepsy is a chronic neurological disorder that is defined by recurrent seizures that are the result of overactive neurons in the brain. Recent studies suggest that inflammation and overproduction of IL-1β may be associated with the initiation and maintenance of epileptic seizures. While there are a number of approved anticonvulsant medications used to treat patients with epilepsy, a substantial portion of patients are considered to be treatment-resistant because they continue to have seizures while taking approved anti-epileptic drugs.

VX-765 has been shown to inhibit acute seizures in preclinical models. In addition, VX-765 has shown activity in preclinical models of chronic epilepsy that do not respond to approved anti-epileptic drugs. VX-765 previously had been dosed in over 100 patients in Phase 1 and Phase 2a clinical trials relating to other diseases, including a 28-day Phase 2a clinical trial in patients with psoriasis. We terminated development for psoriasis in 2006 because patients did not show an adequate response to therapy with VX-765. We believe that the data we have from the nonclinical studies together with safety information from previous clinical trials in humans for VX-765 provide a rationale to explore the

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clinical potential of this drug candidate as a treatment for epilepsy. We expect that VX-765 will be the first clinical drug candidate to target epilepsy through the inflammation pathway.

We recently completed the treatment phase of a Phase 2a clinical trial of VX-765 that enrolled approximately 75 patients with treatment-resistant epilepsy. The double-blind, randomized, placebo-controlled clinical trial was designed to evaluate the safety, tolerability and clinical activity of VX-765. Patients were monitored for seizure frequency during an initial six-week baseline period and then for six weeks while they received treatment with VX-765, followed by a further six-week observation period while they were no longer receiving VX-765. The primary endpoints of the trial were safety and tolerability. The secondary endpoints evaluated clinical efficacy relative to baseline, measured by reduction in seizure frequency and number of patients with a 50 percent or greater reduction in seizure frequency versus baseline. We currently are analyzing data from this trial.

COMMERCIAL ORGANIZATION

Over the past several years, we have expanded significantly our commercial organization in the United States. In 2010, we hired an experienced management team and more than 100 field-based employees, prepared our initial marketing strategies, and designed and implemented infrastructure that will be required to support commercial sales of telaprevir if it is approved for sale in the United States. We expect to complete these activities in the first half of 2011 and believe that our commercial organization will be prepared for the potential mid-2011 commercial launch of telaprevir in the United States. We also are planning to market telaprevir in Canada and believe that our commercial organization will be prepared for the potential Canadian launch of telaprevir in the second half of 2011.

We believe that we have developed a deep understanding of the HCV market in the United States and Canada. Our understanding incorporates information regarding the current standard of care as well as the attitudes of patients and health care providers toward current and potential therapies. We will be updating and refining our marketing strategies as we near the potential commercial launch of telaprevir. In addition, our government affairs and public policy group advocates for policies that promote life sciences innovation and increase awareness of the diseases on which we are focusing with state and federal legislatures, government agencies, public health officials and other policy-makers.

RESEARCH PROGRAMS

We believe that our integrated drug design approach has significantly enhanced our ability to discover and develop small molecule drug candidates directed at biologically complex targets associated with serious diseases. Our drug design platform integrates biology, pharmacology, drug metabolism and pharmacokinetics, toxicology, material sciences, biophysics, medicinal chemistry and process chemistry, automation and information technologies in a coordinated and simultaneous fashion throughout the discovery process. We believe that our approach has been validated through our success in moving drug candidates into clinical trials. We have decided to focus on several core therapeutic areas, in order to expand and develop our expertise in specific therapeutic areas and to permit a framework for portfolio planning and execution. Currently, the four therapeutic areas of highest priority to us are: infectious diseases, including viral infections, such as influenza, and bacterial infections; immune-mediated inflammatory diseases; cancer; and neurological diseases and disorders, including pain. Driven by the complexity of the therapeutic areas selected, we are attempting to identify multiple targets within each indication that, either as a stand-alone therapy or combination therapy, could provide treatment options that are transformational in nature. The objective of this approach is to enable us to eventually provide multiple drugs in each of these therapeutic areas. We select therapeutic areas by mapping our research strengths, including expertise in kinases, proteases and membrane proteins, onto therapeutic areas with high unmet need, with an emphasis on indications where we believe we, independently or in collaboration with other pharmaceutical companies, will be able to discover, develop, and

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commercialize important medicines for serious diseases. Within each therapeutic area, we focus initially on specific indications.

Our past drug discovery efforts have produced a variety of drug candidates that have been commercialized or are in preclinical or clinical development. We believe our ongoing research programs continue to create value for us by generating new drug candidates in areas of significant unmet medical need. We are evaluating drug candidates in Phase 1 clinical trials and are engaged in nonclinical activities involving a number of additional investigational compounds, one or more of which may enter clinical development in 2011.

To augment our internal research programs, we seek to collaborate with leading academic research institutions, government laboratories, foundations and other organizations in order to advance research in our areas of therapeutic interest as well as in areas of basic technological enablement. We have established relationships with organizations and organized consortia of organizations from around the world with expertise in areas of interest to us, and intend to leverage that experience to further our research efforts.

CORPORATE COLLABORATIONS

We have entered into corporate collaborations with pharmaceutical and other companies and organizations that provide financial and other resources, including capabilities in research, development, manufacturing, and sales and marketing, to support our research and development programs.

Janssen Pharmaceutica, N.V.

In June 2006, we entered into a license, development, manufacturing and commercialization agreement with Janssen. Under the collaboration agreement, we collaborate with Janssen to develop and commercialize telaprevir. Under the terms of the collaboration agreement, we retain exclusive commercial rights to telaprevir in North America and lead the development plan for telaprevir in North America and the Janssen territories. Janssen has exclusive rights to commercialize telaprevir outside of North America and the Far East. In connection with the execution of the collaboration agreement, we received an up-front payment of $165.0 million in July 2006. As of December 31, 2010, we had received $100.0 million of contingent milestone payments related to the development of telaprevir under the collaboration agreement. In addition, the agreement provides for additional contingent milestone payments to us of up to $250.0 million related to the regulatory filing with and approval of telaprevir by the EMA, and the launch of telaprevir in the European Union. In the third quarter of 2009, we entered into two financial transactions related to these $250.0 million in potential future milestone payments, which are discussed in detail in our consolidated financial statements and management's discussion and analysis of financial condition and results of operations contained in this Annual Report on Form 10-K. In these transactions, we received $155.0 million in 2009 and a third party will receive the proceeds from the $250.0 million in potential milestone payments payable to us by Janssen, when and if we become entitled to them.

Janssen is responsible for 50% of drug development costs under the development program for North America and the Janssen territories. Each of the parties to the collaboration agreement is responsible for drug supply in their respective territories. The collaboration agreement also includes a tiered royalty payable to us averaging in the mid-20% range, as a percentage of net sales in the Janssen territories, depending upon successful commercialization. In addition, Janssen will be responsible for certain third-party royalties in its territories. Janssen may terminate the collaboration agreement upon six months' notice to us. In such an event, all manufacturing, commercialization and intellectual property rights to telaprevir in the Janssen territories under the collaboration agreement will revert to us.

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As part of the collaboration agreement, following regulatory approval and commercialization of telaprevir in both North America and Janssen's territories, we have agreed to establish a global health initiative with Tibotec, an affiliate of Janssen, with the goals of advancing the prevention, diagnosis, treatment and cure of HCV infection, which will be principally directed toward developing countries.

Mitsubishi Tanabe Pharma Corporation

In June 2004, we entered into a collaboration agreement with Mitsubishi Tanabe pursuant to which Mitsubishi Tanabe agreed to provide financial and other support for the development and commercialization of telaprevir. Under the terms of the agreement, Mitsubishi Tanabe has the right to develop and commercialize telaprevir in Japan and specified other Far East countries. The original agreement provided for payments by Mitsubishi Tanabe to us through Phase 2 clinical development, including an up-front license fee, development stage milestone payments and reimbursement of certain drug development costs for telaprevir.

In July 2009, we amended the collaboration agreement with Mitsubishi Tanabe. Under the amended agreement, we received $105.0 million in 2009, and will be eligible to receive a further contingent milestone payment, which if realized would range between $15.0 million and $65.0 million. The amended agreement provides Mitsubishi Tanabe with a fully-paid license to manufacture and commercialize telaprevir to treat HCV infection in Japan and specified other countries in the Far East. Mitsubishi Tanabe is responsible for its own development and manufacturing costs in its territory. Mitsubishi Tanabe may terminate the agreement at any time without cause upon 60 days' prior written notice to us, in which case all rights to telaprevir will revert to us.

Cystic Fibrosis Foundation Therapeutics Incorporated

In May 2004, we entered into a collaboration agreement with CFFT, the non-profit drug discovery and development affiliate of the Cystic Fibrosis Foundation, pursuant to which CFFT provided us with partial funding through 2008 for our CF research and development programs. VX-770 and VX-809 were discovered by us under this research collaboration. We retain the right to develop and commercialize any compounds discovered in the course of the research collaboration, including VX-770 and VX-809, and we will pay a royalty to CFFT on the net sales of any approved drugs discovered in the collaboration.

GlaxoSmithKline plc

In 1993, we entered into a collaboration with GlaxoSmithKline plc covering the research, development and commercialization of HIV protease inhibitors. Lexiva/Telzir and Agenerase, two HIV protease inhibitors that have been approved as treatments for HIV infection, were discovered under this agreement. The agreement provides that GlaxoSmithKline will pay us a royalty on all net sales of the HIV protease inhibitors covered by the agreement. In May 2008, we sold our right to receive future royalties from GlaxoSmithKline with respect to these HIV protease inhibitors, excluding the amount necessary to pay a third party a subroyalty on these net sales, for a one-time cash payment to us of $160.0 million.

INTELLECTUAL PROPERTY

We actively seek protection for our products and proprietary information by means of United States and foreign patents, trademarks and copyrights, as appropriate. In addition, we rely upon trade secret protection and contractual arrangements to protect certain of our proprietary information and products. We have patents and pending patent applications that relate to potential drug targets, compounds we are developing to modulate those targets, methods of making or using those compounds and proprietary elements of our drug discovery platform.

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Much of our technology and many of our processes depend upon the knowledge, experience and skills of key scientific and technical personnel. To protect our rights to our proprietary know-how and technology, we require all employees, as well as our consultants and advisors when feasible, to enter into confidentiality agreements that require disclosure and assignment to us of ideas, developments, discoveries and inventions made by these employees, consultants and advisors in the course of their service to us.

While we have numerous issued patents and pending patent applications in our patent portfolio, we believe that the patents and patent applications in the United States and the European Union that are the most important to our business are those that claim the composition-of-matter of drug candidates that have progressed at least into Phase 2 clinical trials. The following table sets forth the status of the primary patents and patent applications in the United States and the European Union covering the composition-of-matter of these drug candidates:

Drug Candidate	Status of United States Patent (Anticipated Expiration, Subject to Potential Extensions)	Status of European Union Patent (Anticipated Expiration, Subject to Potential Extensions)
telaprevir (VX-950)	Granted (2025)	Granted (2021)
VX-770	Granted (2025)	Application Pending (2025)
VX-222	Granted (2027)	Application Pending (2027)
VX-809	Application Pending (2026)	Application Pending (2026)
VX-509	Application Pending (2025)	Application Pending (2025)
VX-765	Granted (2021)	Application Pending (2021)

The United States patent covering the composition-of-matter for telaprevir was granted in 2010 with a term that expires in 2025. We do not expect material extensions to the term of the patent covering the composition-of-matter of telaprevir in the United States. In the European Union, we expect to obtain extensions to the term of the patent covering the composition-of-matter of telaprevir and that as a result of these extensions the patents will expire in 2026. We will need to apply separately for the extensions in the European Union on a country-by-country basis.

We hold issued patents and pending patent applications in the United States, and in foreign countries we deem appropriate, claiming intellectual property developed as part of each of our significant research and development programs. In addition to the composition-of-matter patents and patent applications listed above, our intellectual property holdings include but are not limited to:

United States and foreign patents and patent applications covering telaprevir, VX-222 and other HCV protease and polymerase inhibitors and the use of these compounds to treat HCV infection.

United States and foreign patent applications covering potentiators and correctors of the CFTR protein, including VX-770 and VX-809 and many other related compounds, and the use of those potentiators and correctors to treat CF.

United States and foreign patents and patent applications covering inhibitors of a variety of kinase proteins, including VX-509, a JAK3 inhibitor.

United States and foreign patents and patent applications covering caspase-1 inhibitors, including VX-765.

United States and foreign patent applications covering the manufacture, pharmaceutical compositions, related solid forms, formulations, dosing regimens and methods of use of these compounds, including telaprevir and VX-770.

We cannot be certain, however, that issued patents will be enforceable or provide adequate protection or that pending patent applications will result in issued patents.

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From time to time we enter into non-exclusive license agreements for proprietary third-party technology used in connection with our research activities. These license agreements typically provide for the payment by us of a license fee, but may also include terms providing for milestone payments or royalties for the development and/or commercialization of our drug products arising from the related research.

MANUFACTURING

Manufacturing Approach and Philosophy

As we advance our proprietary drug candidates through clinical development toward commercialization, we continue to build and maintain our supply chain and quality assurance resources. We rely on an international network of third parties to manufacture and distribute our drug candidates for clinical trials, and we expect that we will continue for the foreseeable future to rely on third parties to meet our commercial supply needs for any of our drug candidates that are approved for sale.

Our supply chain for sourcing raw materials and manufacturing drug product ready for distribution is a multi-step international endeavor. Third-party contract manufacturers, including some in China, supply us with raw materials, and contract manufacturers in the European Union and the United States convert these raw materials into drug substance, and convert the drug substance into final dosage form. Establishing and managing this global supply chain requires a significant financial commitment and the creation and maintenance of numerous third-party contractual relationships.

We are focusing resources on the development of systems and processes to track, monitor and oversee our third-party manufacturers' activities. We regularly evaluate the performance of our third-party manufacturers with the objective of confirming their continuing capabilities to meet our needs efficiently and economically. Manufacturing facilities, both foreign and domestic, are subject to inspections by or under the authority of the FDA and by or under the authority of other federal, state, local or foreign authorities. A failure by any of our third-party manufacturers to pass an inspection could adversely affect our ability to launch telaprevir or VX-770 in a timely manner, if we obtain marketing approval, or adversely affect our ability to continue to distribute telaprevir or VX-770 after launch.

We have established a quality assurance program intended to ensure that our third-party manufacturers and service providers produce materials and provide services, when applicable, in accordance with the FDA's current Good Manufacturing Practices, or cGMP, and other applicable regulations.

Manufacture of Telaprevir Clinical and Commercial Supplies

We require a supply of telaprevir for our clinical trials and have agreed to exercise our contractual rights from our third-party manufacturers to provide a supply of telaprevir to Janssen and Mitsubishi Tanabe for their clinical trials. We also will require a supply of telaprevir for sale in North America if we obtain marketing approval. In addition, we have agreed to exercise our contractual rights from our third-party manufacturers to provide, until April 2012, a supply of telaprevir drug substance to Mitsubishi Tanabe for their use in manufacturing telaprevir in final dosage form for sale, if approved, in its territory. We also have agreed to supply telaprevir drug substance, intermediates and final drug product to Janssen as a secondary source until June 2011.

We are manufacturing telaprevir, through our third-party manufacturing network, to meet our, Janssen's and Mitsubishi Tanabe's clinical supply needs and our needs for commercial supplies of telaprevir, if approved. We believe our past and continuing efforts to expand our relationships with third-party manufacturers and oversee their activities will be important to support a timely and effective commercial launch of telaprevir and its consistent supply in subsequent years.

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We have completed the transfer of technical information regarding the manufacture of telaprevir to Janssen so that Janssen will be able to manufacture telaprevir, if approved, for sale in Janssen's territories and as a secondary supply source of drug substance for us. While we believe there are multiple third parties capable of providing most of the materials and services we need in order to manufacture and distribute telaprevir, and that supply of materials that cannot be second-sourced can be managed with inventory planning, there is always a risk that we may underestimate demand, and that our manufacturing capacity through third-party manufacturers may not be sufficient. In addition, because of the significant lead times involved in our supply chain for telaprevir, we may have less flexibility to adjust our supply in response to changes in demand than if we had shorter lead times.

Manufacture of VX-770 Clinical and Commercial Supplies

We require VX-770 for clinical trials in North America and Europe, and will require a supply of VX-770 for sale in North America and international markets if we obtain marketing approval. We obtain VX-770 to meet our clinical supply needs through a third-party manufacturing network and are in the process of validating the manufacturing processes that will be required to produce VX-770, if approved, at a commercial scale.

COMPETITION

The pharmaceutical industry is characterized by extensive research efforts, rapid technological progress and intense competition. There are many public and private companies, including pharmaceutical companies, chemical companies and biotechnology companies, engaged in developing products for the same human therapeutic areas that we are targeting. Many of our competitors have substantially greater financial, technical and human resources than we do and have more experience than us in the development of new drugs. In order for us to compete successfully, we may need to demonstrate greater safety, efficacy, ease of manufacturing and/or market acceptance of our products relative to competitors' products that have received or will receive regulatory approval for marketing.

We face competition based on the safety and efficacy of our drug candidates, the timing and scope of regulatory approvals, the availability and cost of supply, marketing and sales capabilities, reimbursement coverage, price, patent protection and other factors. Our competitors may develop or commercialize more effective, safer or more affordable products than we are able to develop or commercialize or obtain more effective patent protection. As a result, our competitors may commercialize products more rapidly or effectively than we do, which would adversely affect our competitive position, the likelihood that our drug candidates, if approved, would achieve initial market acceptance and our ability to generate meaningful revenues from those drugs. Even if our drug candidates are approved and achieve initial market acceptance, future competitive products may render our drugs obsolete or noncompetitive. If any such drug is rendered obsolete or noncompetitive, we may not be able to recover the expenses of developing, stockpiling and commercializing that drug. With respect to all of our drugs and drug candidates, we are aware of existing treatments and numerous drug candidates in development by our competitors.

HCV Infection

Current HCV Market

A 48-week course of both peg-IFN, which requires weekly injections, and RBV, which is an oral drug, is the current standard treatment for genotype 1 HCV infection. This treatment regimen is associated with significant side-effects, including fatigue, flu-like symptoms, rash, depression and anemia. A majority of patients who begin treatment do not achieve an SVR. Based on discussions with physicians who treat patients infected with HCV, we believe that there are a significant number of patients with HCV who may consider treatment with new, more effective therapies.

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Initial Anticipated Competitive Landscape for Telaprevir

Merck & Co., Inc.'s protease inhibitor, boceprevir, is the only HCV protease inhibitor that is being developed on a timeline comparable to telaprevir. Merck completed Phase 3 clinical trials of boceprevir-based treatment regimens in 2010. Merck announced in January 2011 the FDA had granted priority review of its NDA for boceprevir. As a result, we expect that boceprevir will be reviewed by the FDA on a very similar timeline to telaprevir and may be approved shortly prior to telaprevir. Merck's Phase 3 clinical trials of boceprevir included a clinical trial, RESPOND-2, that evaluated response-guided boceprevir-based triple combination therapy in treatment-failure patients but excluded null responders to prior treatment, and a clinical trial, SPRINT-2, that evaluated response-guided boceprevir-based triple combination therapy in treatment-naïve patients. Merck reported results from these clinical trials in the second half of 2010. In November 2009, Merck initiated another Phase 3 clinical trial for boceprevir that it estimated would enroll approximately 660 patients infected with genotype 1 HCV to compare the effect on efficacy of erythropoietin use versus reducing the dose of RBV for the management of anemia.

If telaprevir and boceprevir are both approved on a comparable timeline, we believe that the drugs would compete in the marketplace based on, among other things, safety and efficacy data from their respective clinical trials, breadth of approved use, dosing regimen, cost, cost of co-therapies and side-effect profiles.

Long-term Competitive Landscape in HCV

We are aware of numerous other compounds in clinical trials that target HCV infection through a number of different mechanisms of action, and we believe that there are many additional potential HCV treatments in research or early development. There are a number of earlier-stage protease inhibitors, HCV polymerase inhibitors and HCV NS5A inhibitors, each of which is a direct-acting antiviral compound. We believe the most advanced of these compounds is TMC-435, a protease inhibitor being developed by Tibotec, an affiliate of our collaborator Janssen, and Medivir AB. In the first quarter of 2011, Tibotec initiated the first Phase 3 clinical trial of TMC-435. We believe that these earlier-stage drug candidates, if approved, would be launched several years after telaprevir. If any of these drug candidates is approved as a treatment for HCV infection, we expect that they would compete with telaprevir on the basis of the factors described above.

Future competition in the HCV treatment market may result from the administration of combinations of new oral therapies, and we are aware of a number of companies focusing on developing combinations of direct-acting antiviral compounds. We are conducting a Phase 2a clinical trial in which we plan to evaluate an all-oral combination of VX-222, our lead polymerase inhibitor, with telaprevir and RBV, but without peg-IFN. We are aware that many companies, including Abbot Laboratories, Bristol-Myers Squibb Company, Gilead Sciences, Inc., Intermune, Inc., Merck, Pharmasset, Inc., and Hoffman-La Roche, are seeking to develop combination regimens to treat HCV infection, including several combinations being evaluated in Phase 2 clinical trials.

CF

Several companies are engaged in the process of developing treatments for CF, including a number of antibiotics and anti-inflammatory drug candidates and at least one drug candidate that is designed to improve the function of the CFTR protein. PTC Therapeutics, Inc. in collaboration with Genzyme Corporation is evaluating ataluren in a Phase 3 clinical trial in patients with CF. Ataluren is a drug candidate designed to improve the production of CFTR proteins in patients with nonsense genetic mutations that halt the production of CFTR proteins before the protein is fully formed.

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GOVERNMENT REGULATION

The research, development, testing, manufacture, quality control, approval, labeling, packaging, storage, record keeping, promotion, advertising, distribution and marketing of the drug candidates that we are developing are subject to extensive regulation by United States and foreign governmental authorities. In particular, pharmaceutical products are subject to rigorous preclinical, nonclinical and clinical testing and other approval requirements by the FDA in the United States under the Federal Food, Drug and Cosmetic Act, and by comparable agencies in most foreign countries. In addition to prohibiting the sale and distribution of pharmaceutical products prior to regulatory approval, the FDA and comparable agencies in most foreign countries prohibit the pre-approval promotion of investigational drugs. We have summarized the FDA process below, but other countries may have different approval processes with which we or our collaborators will need to comply if we seek to conduct clinical trials or obtain marketing approval in those countries. In addition, even if we ultimately intend to seek initial marketing approval in the United States, we may conduct early clinical trials in other countries, for a variety of reasons, and therefore the submission of our initial investigational new drug, or IND, application in the United States might not occur until after one or more foreign-sited clinical trials have been initiated.

FDA Approval Process

As an initial step in the FDA regulatory review process, toxicity studies in animals and other nonclinical studies typically are conducted to help identify potential safety problems that might be associated with administration of the drug candidate being tested. For certain diseases, animal models exist that are believed to be predictive of efficacy in humans. For such diseases, a drug candidate typically is tested for efficacy in that animal model. The results of these initial animal safety and disease model studies are submitted to the FDA as a part of the IND submission, prior to commencement of human clinical trials in the United States. For several of our drug candidates, no appropriately predictive animal model exists. As a result, no *in vivo* evidence of efficacy will be available until those drug candidates progress to human clinical trials. A variety of nonclinical studies in a number of animal species, and other nonclinical studies, ordinarily are conducted while human clinical trials are underway, to provide supplemental toxicology and other information. This information as well as the results from the early clinical trials provide a foundation for the design of broader and more lengthy human clinical trials.

Clinical trials typically are conducted in three sequential phases, although the phases may overlap. Phase 1 frequently begins with the initial introduction of the drug candidate into healthy human subjects prior to introduction into patients. The drug candidate may then be tested in a relatively small number of patients for preliminary information, dosage tolerance, absorption, metabolism, excretion, clinical pharmacology and, if possible, for early information on efficacy. Phase 2 typically involves trials in a small sample of the intended patient population to assess the efficacy of the drug for a specific indication, to determine dose tolerance and the optimal dose range and to gather additional information relating to safety and potential adverse effects. Phase 3 trials are undertaken to further evaluate clinical safety and efficacy in an expanded patient population at geographically dispersed trial sites, to obtain information on the overall risk-benefit ratio of the drug candidate and to provide an adequate basis for proposed labeling. Each trial is conducted in accordance with standards set forth in a protocol that details the design and objectives of the trial, the parameters to be used to monitor safety and the efficacy criteria to be evaluated. For clinical trials in the United States, each protocol must be submitted to the FDA to supplement the original IND submission. Further, each clinical trial must be evaluated by an independent Institutional Review Board, or IRB, which evaluates clinical research at or for each institution at which the trial will be conducted. The IRBs will consider, among other things, ethical factors and the safety of human subjects in the proposed trials.

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Data from nonclinical testing and all clinical trials, along with descriptions of the manufacturing process, analytical tests, proposed labeling and the proposed risk evaluation and mitigation strategies and other relevant information, are submitted to the FDA as part of requesting approval to market the drug in the NDA. The process of completing nonclinical and clinical testing, submitting the NDA and obtaining FDA approval for a new drug is likely to take a number of years and require the expenditure of substantial resources. Preparing an NDA involves extensive data collection, verification, analysis and expense, and there can be no assurance that approval of the drug candidate that is the subject of a particular NDA will be granted on a timely basis, if at all. The FDA reviews all NDAs to ensure that they are sufficiently complete for substantive review before it accepts them for filing. The approval process is affected by a number of factors, including the severity of the targeted disease, the availability of alternative treatments and the risks and benefits demonstrated in clinical trials. The FDA may deny an NDA if applicable regulatory criteria are not satisfied or may require additional testing or information. Among the conditions for marketing approval is the requirement that the prospective manufacturer's quality control and manufacturing procedures conform to the FDA's cGMP regulations, which must be followed at all times. In complying with standards set forth in these regulations, manufacturers must continue to expend time, money and effort in the area of production and quality control to ensure full compliance. Manufacturing facilities, both foreign and domestic, also are subject to inspections by the FDA and by other federal, state, local agencies or foreign authorities. In addition, the company developing a drug candidate typically must submit a plan setting forth its risk evaluation and mitigation strategies.

Under the FDA Modernization Act of 1997, the FDA may grant "Fast Track" designation to facilitate the development of a drug intended for the treatment of a serious or life-threatening condition if the drug demonstrates, among other things, the potential to address an unmet medical need. The benefits of Fast Track designation include scheduled meetings with the FDA to receive input on development plans, the option of submitting an NDA in sections rather than submitting all sections simultaneously, and the option of requesting evaluation of trials using surrogate endpoints. Fast Track designation does not necessarily lead to a priority review or accelerated approval of a drug candidate by the FDA. Telaprevir and VX-770 have received Fast Track designation by the FDA.

Timing to Approval

We estimate that it generally takes 10 to 15 years, or possibly longer, to discover, develop and bring to market a new pharmaceutical product in the United States as outlined below:

Phase:	Objective:	Estimated Duration:
Discovery	Lead identification and target validation	2 to 4 years
Preclinical	Initial toxicology for preliminary identification of risks for humans; gather early pharmacokinetic data; submit IND	1 to 2 years
Phase 1	Initial evaluation of safety in humans; study how the drug candidate works and is metabolized	1 to 2 years
Phase 2	Gather data on the effectiveness of the drug candidate and its optimal dosage; continue safety evaluation	2 to 4 years
Phase 3	Confirm efficacy, dosage regimen and safety profile of the drug candidate; submit NDA	2 to 4 years
FDA approval	Approval by the FDA to sell and market the drug for the approved indication	6 months to 2 years

A drug candidate may fail to progress at any point during this process. Animal and other nonclinical studies typically are conducted during each phase of human clinical trials.

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Patent Term Restoration

Pursuant to the Drug Price Competition and Patent Term Restoration Act of 1984, referred to in the industry as the Hatch-Waxman Amendments, some of our patents, under certain conditions, may be eligible for limited patent term extension for a period of up to five years as compensation for patent term lost during drug development and the FDA regulatory review process. However, this extension period cannot go beyond 14 years from the drug's approval date. The patent term restoration period is generally one-half the period of time elapsed between the effective date of an IND application and the submission date of an NDA, plus the period of time between the submission date of the NDA and FDA approval. The United States Patent and Trademark Office, in consultation with the FDA, reviews and approves applications for any patent term extension or restoration. We intend to seek the benefits of this statute, but there can be no assurance that we will be able to obtain any such benefits.

Orphan Drug Designation

Under the Orphan Drug Act, the FDA may grant orphan drug designation to drugs intended to treat a "rare disease or condition" that affects fewer than 200,000 individuals in the United States. Orphan drug designation must be requested before submitting an NDA. Orphan drug designation does not convey any advantage in, or shorten the duration of, the regulatory review and approval process. If a drug that has an orphan drug designation subsequently receives the first FDA approval for the indication for which it has such designation, the product is entitled to orphan exclusivity. The first developer to receive FDA marketing approval for an orphan drug is entitled to a seven year exclusive marketing period in the United States for that drug. However, a drug that the FDA considers to be clinically superior to, or different from, another approved orphan drug, even though for the same indication, may also obtain approval in the United States during the seven-year exclusive marketing period. In addition, holders of exclusivity for orphan drugs are expected to assure the availability of sufficient quantities of their orphan drugs to meet the needs of patients. Failure to do so could result in the withdrawal of marketing exclusivity for the drug. VX-770 and VX-809 have been granted orphan drug designation.

Legislation similar to the Orphan Drug Act has been enacted in countries and regions outside the United States, including the European Union. The Orphan drug statutes in the European Union are available for therapies addressing chronic debilitating or life-threatening conditions that affect five or fewer out of 10,000 persons or that are financially not viable to develop. The market exclusivity period for orphan drugs in the European Union is ten years and may be extended to twelve years if the sponsor completes agreed-upon pediatric investigations. The exclusivity period can be reduced to six years if the sponsor cannot justify maintenance of market exclusivity based on available evidence regarding the profitability of the drug.

Post-approval Studies

Even after FDA approval has been obtained, further studies, including post-approval trials, may be required to provide additional data on safety and will be required to gain approval for the sale of a drug as a treatment for clinical indications other than those for which the drug initially was approved. Also, the FDA will require post-approval reporting to monitor the side-effects of the drug. Results of post-approval programs may limit or expand the indications for which the drug may be marketed. Further, if there are any requests for modifications to the initial FDA approval for the drug, including changes in indication, manufacturing process, labeling or manufacturing facilities, submission of a supplemental NDA to the FDA may be required.

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Pricing and Reimbursement

Sales of drugs depend in significant part on the availability of reimbursement from third-party payors for the cost of the drug. Third-party payors include government health administrative authorities, managed care providers, private health insurers and other organizations. We anticipate third-party payors will provide reimbursement for our drugs if we are successful in obtaining marketing approval. Governments may regulate access to, prices of or reimbursement levels for our drugs to control costs or to affect levels of use of our drugs, and private insurers may be influenced by government reimbursement methodologies. In addition, third-party payors are increasingly raising challenges to proposed pricing, and in some cases, examining the cost-effectiveness of drugs before agreeing to a rate of reimbursement. The process of seeking reimbursement from third-party payors is time-consuming and expensive.

We expect to participate in the Medicaid rebate program. Under the Medicaid rebate program, we would pay a quarterly rebate for all drug sales that are reimbursed by Medicaid. The amount of the rebate is set by law as a minimum 23.1% of the average manufacturer price, or AMP, for the drug, or if it is greater, the difference between AMP and the best price available from us to any non-government customer. The rebate amount also includes an inflation adjustment if AMP increases greater than inflation.

Part D of the Medicare Prescription Drug, Improvement and Modernization Act of 2003, or Medicare Part D, provides coverage to enrolled Medicare patients for self-administered drugs such as pills, tablets and creams, that do not need to be injected or infused by a physician. However, Medicare Part D is administered by private prescription drug plans approved by the United States government and each drug plan establishes its own Medicare Part D formulary for prescription drug coverage and pricing, which the drug plan may modify from time-to-time. Some vendors solicit discounted pricing from manufacturers and commonly condition formulary placement on the availability of manufacturer discounts. We may need to provide such discounts in exchange for advantageous positioning for telaprevir, if approved, on formularies of nation-wide prescription drug plans participating in the Medicare Part D program as well as many of the large regional plans. The United States Congress could significantly change the Medicare Part D program in the future, including requiring the federal government to negotiate discounts for our drugs or matching mandatory discounts to those required in other federal programs.

Participation in the Medicaid rebate program will require us to extend comparable discounts under the Public Health Service, or PHS, pharmaceutical pricing program. The PHS pricing program extends discounts to community health clinics and other entities that receive health services grants from the PHS, as well as the many hospitals that serve a disproportionate share of financially needy patients. We also are required to offer discounted pricing to federal agencies via the Federal Supply Schedule, or FSS. FSS pricing is negotiated periodically with the Department of Veterans Affairs. Although FSS pricing is negotiated, it is intended to be no more than the price that we charge our most-favored non-federal customer for the drug. The minimum discount is set by statute at approximately 24%.

We expect that there may continue to be a number of federal and state proposals to implement governmental pricing controls and limit the growth of healthcare costs, including the cost of prescription drugs. For example, the Patient Protection and Affordable Care Act, as amended by the Health Care and Education Affordability Reconciliation Act, collectively referred to as the PPACA, was enacted in 2010. The PPACA is expected to significantly affect the pharmaceutical industry. In addition, the PPACA imposes an annual fee, which will increase annually, on sales by branded pharmaceutical manufacturers starting in 2011. The financial impact of these discounts, increased rebates and fees and the other provisions of the PPACA on our business is unclear.

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Reimbursement Outside of the United States

Outside the United States drugs are paid for by a variety of payors, with governments being the primary source of payment. In many countries the government closely regulates drug pricing and reimbursement and often has significant discretion in determining whether a product will be reimbursed at all and, if it is, how much will be paid. Negotiating prices with governmental authorities can delay patient access to and commercialization of drugs. Payors in many countries use a variety of cost-containment measures that can include referencing prices in other countries and using those reference prices to set their own price, mandatory price cuts and rebates. This international patchwork of price regulation has led to different prices across countries and could lead to cross-border trade from markets with lower prices.

Foreign Regulation

In addition to regulations in the United States, we and our collaborators are and will be subject to a variety of foreign regulations governing clinical trials and commercial sales and distribution of drugs. We are responsible for seeking approval for telaprevir in countries in North America and have submitted our application for regulatory approval in Canada. Under our telaprevir collaboration agreements, Janssen and Mitsubishi Tanabe are responsible for seeking regulatory approval and compliance with foreign regulations in their respective territories. Whether or not we obtain FDA approval for a drug, approval of a drug candidate by the comparable regulatory authorities of foreign countries must be obtained before we or our collaborators can commence clinical trials or marketing of the drug 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, marketing authorization applications may be submitted either under a centralized or decentralized procedure. The centralized procedure, which is compulsory for medicines produced by certain biotechnological processes and optional for those that 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 European Union member state, the decentralized procedure provides for assessment of a marketing application by one member state, known as the reference member state, and review and possible approval of that assessment by one or more other, or concerned, member states. Under this procedure, an applicant submits an application, or dossier, and related materials 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 of the European Union.

Other Regulations

Pharmaceutical companies also are subject to various federal and state laws pertaining to health care "fraud and abuse," including anti-kickback laws and false claims laws. Anti-kickback laws make it illegal for any entity or person to solicit, offer, receive or pay any remuneration in exchange for or to induce the referral of business, including the purchase or prescription of a particular drug. False claims laws prohibit anyone from presenting or causing to be presented, to third-party payors, including Medicare and Medicaid, claims for payment for drugs or services that are false or fraudulent, claims for items or services not provided as claimed or claims for medically unnecessary items or services.

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Actual knowledge of federal anti-kickback and criminal healthcare fraud laws or specific intent to violate those laws is not required.

In recent years, several states also have enacted legislation requiring pharmaceutical companies to establish marketing compliance programs with respect to interactions with health care providers and/or make reports to a designated state agency or otherwise publicly disclose information related to, among other things, transfers of value to health care providers. Many of these requirements are new and uncertain, and the penalties for failure to comply are unclear.

In addition to the statutes and regulations described above, we also are subject to regulation under the Occupational Safety and Health Act, the Environmental Protection Act, the Toxic Substances Control Act, the Resource Conservation and Recovery Act and other federal, state, local and foreign statutes and regulations, now or hereafter in effect.

EMPLOYEES

As of December 31, 2010, we had 1,691 employees. The number of our employees increased by 18% during 2010, from 1,432 on December 31, 2009. We are likely to further increase our headcount in 2011. Of these employees, approximately 1,550 were based in the United States, 100 were based in Europe and 40 were based in Canada. Our scientific staff members have diversified experience and expertise in molecular and cell biology, biochemistry, synthetic organic chemistry, protein X-ray crystallography, protein nuclear magnetic resonance spectroscopy, microbiology, computational chemistry, biophysical chemistry, medicinal chemistry, clinical pharmacology and clinical medicine. Our clinical development personnel have extensive expertise in designing and executing clinical trials, and we are continuing to build our commercialization organization. Employees in our commercial organization have extensive experience in selling and marketing pharmaceutical products as well as seeking reimbursement from government and third-party payors for pharmaceutical products. Our employees are not covered by a collective bargaining agreement, and we consider our relations with our employees to be good.

OTHER MATTERS

Information Available on the Internet

Our internet address is *www.vrtx.com*. Our annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K, and all amendments to those reports, are available to you free of charge through the "Finances/Investor Info-SEC Filings" section of our website as soon as reasonably practicable after those materials have been electronically filed with, or furnished to, the Securities and Exchange Commission.

Corporate Information

Vertex was incorporated in Massachusetts in 1989, and our principal executive offices are located at 130 Waverly Street, Cambridge, Massachusetts 02139. We have research sites located in San Diego, California; Coralville, Iowa; Montreal, Canada and Milton Park, U.K. We also have an office in Washington, D.C.

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EXECUTIVE OFFICERS AND DIRECTORS

The names, ages and positions held by our executive officers and directors are as follows:

Name	Age	Position
Matthew W. Emmens	59	Chief Executive Officer, Chairman of the Board and President
Peter Mueller, Ph.D.	54	Executive Vice President, Global Research and Development, and Chief Scientific Officer
Ian F. Smith, C.P.A., A.C.A.	45	Executive Vice President and Chief Financial Officer
Nancy J. Wysenski	53	Executive Vice President and Chief Commercial Officer
Kenneth S. Boger, M.B.A., J.D.	64	Senior Vice President and General Counsel
Lisa Kelly-Croswell	44	Senior Vice President, Human Resources
Amit K. Sachdev, J.D.	43	Senior Vice President, Corporate Affairs and Public Policy, and Commercial Business Lead, Canada
Christiana Stamoulis, M.B.A.	40	Senior Vice President, Corporate Strategy and Business Development
Paul M. Silva	44	Vice President and Corporate Controller
Joshua S. Boger, Ph.D.	59	Director
Stuart J.M. Collinson, Ph.D.	51	Director
Eugene H. Cordes, Ph.D.	74	Director
Jeffrey M. Leiden, M.D., Ph.D.	55	Lead Independent Director
Wayne J. Riley, M.D., M.B.A.	51	Director
Bruce I. Sachs	51	Director
Elaine S. Ullian	63	Director
Dennis L. Winger	63	Director

Mr. Emmens has been our Chairman, Chief Executive Officer and President since May 2009. He has been a member of our Board of Directors since 2004 and became our President in February 2009. Mr. Emmens is the Chairman of the Board of Directors of Shire plc, a specialty biopharmaceutical company, and has been a member of Shire's board since March 2003. From March 2003 to June 2008, Mr. Emmens was also the Chief Executive Officer of Shire plc. Before joining Shire in 2003, Mr. Emmens served as President of Merck KGaA's global prescription pharmaceuticals business in Darmstadt, Germany. In 1999, he joined Merck KGaA and established EMD Pharmaceuticals, Inc., its United States prescription pharmaceutical business. Mr. Emmens held the position of President and Chief Executive Officer at EMD Pharmaceuticals from 1999 to 2001. Prior to this, Mr. Emmens held various positions, including Chief Executive Officer, at Astra Merck, Inc. as well as several positions at Merck & Co., Inc. Mr. Emmens was a member of the Board of Directors of Incyte Corporation from 2006 through February 2009. Mr. Emmens received a B.S. degree in business management from Farleigh Dickinson University.

Dr. Mueller is our Executive Vice President, Global Research and Development, a position he has held since May 2009, and has been our Chief Scientific Officer since July 2003. Dr. Mueller was our Executive Vice President, Drug Innovation and Realization, from February 2006 to May 2009, and our Senior Vice President, Drug Discovery and Innovation, from July 2003 to February 2006. Prior to joining us, Dr. Mueller was the Senior Vice President, Research and Development, of Boehringer Ingelheim Pharmaceuticals, Inc., with responsibility for the development of all drug candidates in the

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company's portfolio in North America. He led research programs in the areas of immunology, inflammatory cardiovascular disease and gene therapy on a global basis. During his time with Boehringer Ingelheim, Dr. Mueller oversaw the discovery of numerous development candidates and held several positions in basic research, medicinal chemistry and management. Dr. Mueller received both an undergraduate degree and a Ph.D. in chemistry at the Albert Einstein University of Ulm, Germany, where he also holds a Professorship in Theoretic Organic Chemistry. He completed fellowships in quantum pharmacology at Oxford University and in biophysics at Rochester University.

Mr. Smith is our Executive Vice President and Chief Financial Officer, a position he has held since February 2006. From November 2003 to February 2006, he was our Senior Vice President and Chief Financial Officer, and from October 2001 to November 2003, he served as our Vice President and Chief Financial Officer. Prior to joining us, Mr. Smith served as a partner in the Life Science and Technology Practice Group of Ernst & Young LLP, an accounting firm, from 1999 to 2001. Mr. Smith initially joined Ernst & Young's U.K. firm in 1987, and then joined its Boston office in 1995. Mr. Smith currently is a member of the Boards of Directors of Acorda Therapeutics, Inc., Infinity Pharmaceuticals, Inc. and TolerRx Inc. Mr. Smith holds a B.A. in accounting and finance from Manchester Metropolitan University, U.K., is a member of the American Institute of Certified Public Accountants and is a Chartered Accountant of England and Wales.

Ms. Wysenski is our Executive Vice President and Chief Commercial Officer, a position she has held since December 2009. Prior to joining us, Ms. Wysenski held the position of Chief Operating Officer of Endo Pharmaceuticals, a 1,200-person specialty pharmaceutical company, where she led sales, marketing, commercial operations, supply chain management, human resources and various business development initiatives. Prior to her role at Endo, Ms. Wysenski participated in the establishment of EMD Pharmaceuticals, Inc., where she held various leadership positions, including the role of President and Chief Executive Officer from 2001 to 2006 and Vice President of Commercial from 1999 to 2001. From 1984 to 1998, Ms. Wysenski held several sales-focused roles at major pharmaceutical companies, including Vice President of Field Sales for Astra Merck, Inc. Ms. Wysenski serves on the North Carolina Central University Board of Trustees and as a director for Reata Pharmaceuticals, Inc., a privately held company. She is a founder of the Research Triangle Park chapter of the Healthcare Business Women's Association. Ms. Wysenski holds a B.S. from Kent State University and an Executive M.B.A. from Baldwin Wallace College.

Mr. Kenneth Boger is our Senior Vice President and General Counsel, a position he has held since joining us in 2001. He came to us from the law firm of Kirkpatrick & Lockhart LLP, now known as K&L Gates, where he was a partner specializing in business and corporate law and was a member of the firm's Management Committee. Prior to the merger of Kirkpatrick & Lockhart with the Boston law firm of Warner & Stackpole LLP in 1999, Mr. Boger was a partner at Warner & Stackpole, where he served on its Executive Committee from 1988 to 1997. Mr. Boger holds an A.B. in history from Duke University, an M.B.A. from the Graduate School of Business at the University of Chicago, and a J.D. from Boston College Law School. Mr. Boger is the brother of Dr. Joshua Boger, one of our directors.

Ms. Kelly-Croswell is our Senior Vice President, Human Resources, a position she has held since July 2007. Ms. Kelly-Croswell served as our Vice President, Human Resources from July 2006 through June 2007. From November 2005 through June 2006, Ms. Kelly-Croswell served as Vice President of Human Resources of NitroMed, Inc., a pharmaceutical company. From February 2004 to November 2005, Ms. Kelly-Croswell served as Senior Vice President, Human Resources, for the Health Care Division and Service Operations, of CIGNA, an employee benefits company. From September 2001 to February 2004, Ms. Kelly-Croswell served as Vice President of Human Resources for Global Research and Development for the Monsanto Company, an agricultural products and solutions company that she joined in 1998. Ms. Kelly-Croswell holds a B.S. in Finance and an M.A. in Labor and Industrial Relations from the University of Illinois at Urbana-Champaign.

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Mr. Sachdev is our Senior Vice President, Corporate Affairs and Public Policy, and Commercial Business Lead, Canada. As a Senior Vice President, he has led our government affairs, public policy and patient advocacy functions since he joined us in July 2007. In October 2010, he took on the added role of building and managing our Canadian business operations. Mr. Sachdev served as Executive Vice President, Health of the Biotechnology Industry Organization (BIO) from April 2005 through June 2007. At BIO, he was the senior executive responsible for managing BIO's Health Section and its Governing Board, and for directing all health care policy and execution. Mr. Sachdev was the Deputy Commissioner for Policy at the FDA from April 2004 through April 2005, and held several other senior positions within the FDA from September 2002 through April 2004. From 1998 to 2002, Mr. Sachdev served as Majority Counsel to the Committee on Energy and Commerce in the United States House of Representatives, where he was responsible for bioterrorism, food safety and environmental issues. From 1993 to 1997, Mr. Sachdev practiced law, first at the Chemical Manufacturers Association, and then with the law firm of Ropes & Gray. Mr. Sachdev holds a B.S from Carnegie Mellon University, and a J.D. from Emory University School of Law.

Ms. Stamoulis is our Senior Vice President, Corporate Strategy and Business Development, a position she has held since October 2009. She became a member of our executive team in October 2010. Prior to joining us, she was a Managing Director in Citigroup's Healthcare Banking Group from April 2006 to February 2009. From 2000 to April 2006, Ms. Stamoulis was an investment banker in the Healthcare Investment Banking Group of Goldman, Sachs & Co., where she was a Vice President from January 2002 through April 2006. Ms. Stamoulis started her career as a strategy consultant at The Boston Consulting Group. Ms. Stamoulis holds a B.S. in Economics and a B.S. in Architecture from the Massachusetts Institute of Technology and an M.B.A. from the MIT Sloan School of Management.

Mr. Silva is our Vice President and Corporate Controller, a position he has held since September 2008. Mr. Silva joined us in August 2007 as Senior Director, Accounting Operations. Prior to joining us, he was the Vice President, Internal Reporting at Iron Mountain Incorporated from July 2006 until August 2007 and a consultant to Iron Mountain's financing department from April 2005 until July 2006. He was the Finance Director of the Bioscience Technologies Division of Thermo Electron Corporation from 2002 to April 2005. Mr. Silva holds a B.S. in accounting from Assumption College.

Dr. Joshua Boger is the founder of Vertex and has been a director since our inception in 1989. He was our Chief Executive Officer from 1992 through May 2009. He was our Chairman of the Board from 1997 until May 2006 and our President from our inception until December 2000, and from 2005 through February 2009. He was our Chief Scientific Officer from 1989 until May 1992. Prior to founding Vertex in 1989, Dr. Boger held the position of Senior Director of Basic Chemistry at Merck Sharp & Dohme Research Laboratories in Rahway, New Jersey, where he headed both the Department of Medicinal Chemistry of Immunology & Inflammation and the Department of Biophysical Chemistry. Dr. Boger holds a B.A. in chemistry and philosophy from Wesleyan University and M.S. and Ph.D. degrees in chemistry from Harvard University. Dr. Boger is the brother of Mr. Kenneth Boger, our Senior Vice President and General Counsel.

Dr. Collinson has been a member of our Board of Directors since July 2001. He currently serves as a Partner at Forward Ventures, a venture capital firm. Prior to our acquisition of Aurora Biosciences Corporation in 2001, Dr. Collinson served as the President, Chief Executive Officer and Chairman of the Board of Aurora. Dr. Collinson held senior management positions with Glaxo Wellcome from December 1994 to June 1998, most recently serving as Co-Chairman, Hospital and Critical Care Therapy Management Team and Director of Hospital and Critical Care. Dr. Collinson received his Ph.D. in physical chemistry from the University of Oxford, England and his M.B.A. from Harvard University.

Dr. Cordes has been a member of our Board of Directors since 2005, and a scientific advisor to us since 1996. Dr. Cordes was the Chairman of Vitae Pharmaceuticals, Inc., a position he held from

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January 2002 to March 2006. Prior to joining Vitae Pharmaceuticals, Dr. Cordes was a professor of pharmacy at the University of Michigan. Dr. Cordes received a B.S. degree in chemistry from the California Institute of Technology and a Ph.D. in biochemistry from Brandeis University.

Dr. Leiden has been a member of our Board of Directors since July 2009 and was appointed our lead independent director in October 2010. He has more than 20 years of experience in the biomedical and pharmaceutical sectors. Dr. Leiden was President and Chief Operating Officer of Abbott Laboratories, Pharmaceuticals Products Group, and a member of the Board of Directors of Abbott Laboratories from 2001 to 2006. From 1987 to 2000, Dr. Leiden held several academic appointments, including the Rawson Professor of Medicine and Pathology and Chief of Cardiology and Director of the Cardiovascular Research Institute at the University of Chicago, the Elkan R. Blout Professor of Biological Sciences at the Harvard School of Public Health, and Professor of Medicine at Harvard Medical School. He is an elected member of both the American Academy of Arts and Sciences, and the Institute of Medicine of the National Academy of Sciences. Dr. Leiden is currently a Managing Director at Clarus Ventures, a life sciences venture capital firm he joined in 2006. Dr. Leiden is also currently a director and the non-executive Vice Chairman of the board of Shire plc, and a director of several private biotechnology companies. Dr. Leiden was a member of the Board of Directors of Millennium Pharmaceuticals, Inc. from October 2007 until it was acquired in June 2008. Dr. Leiden received both his M.D. and Ph.D. degrees from the University of Chicago.

Dr. Riley has been a member of our Board of Directors since July 2010. Dr. Riley is President and Chief Executive Officer of Meharry Medical College, a position he has held since January 2007. In addition, he holds the academic rank of Professor of Internal Medicine at both Meharry and Vanderbilt University Schools of Medicine. From May 2004 to December 2006, Dr. Riley served as a corporate officer and member of the executive management team as Vice President and Vice Dean for Health Affairs and Governmental Relations and Associate Professor of Medicine at Baylor College of Medicine, and Assistant Chief of Medicine at Ben Taub General Hospital, Baylor's primary adult public hospital teaching affiliate. He served as Assistant Dean for Education at Baylor College of Medicine from 2000 to 2004. Dr. Riley is a member of the Board of Directors of Pinnacle Financial Partners, Inc., a financial services holding firm, where he serves on the Audit and Corporate Governance and Nominating Committees. Dr. Riley earned a B.A. from Yale University, an M.P.H. in health systems management from the Tulane University School of Public Health and Tropical Medicine, an M.D. from the Morehouse School of Medicine and an M.B.A. from the Jones Graduate School of Business, Rice University.

Mr. Sachs has been a member of our Board of Directors since 1998. He is a General Partner at Charles River Ventures, a venture capital firm he joined in 1999. From 1998 to 1999, he served as Executive Vice President and General Manager of Ascend Communications, Inc. From 1997 until 1998, Mr. Sachs served as President and Chief Executive Officer of Stratus Computer, Inc. From 1995 to 1997, he served as Executive Vice President and General Manager of the Internet Telecom Business Group at Bay Networks, Inc. From 1993 to 1995, he served as President and Chief Executive Officer at Xylogics, Inc. Mr. Sachs was a director of BigBand Networks, Inc. from 2005 through June 2009. Mr. Sachs holds a B.S.E.E. in electrical engineering from Bucknell University, an M.E.E. in electrical engineering from Cornell University, and an M.B.A. from Northeastern University.

Ms. Ullian has been a member of our Board of Directors since 1997. From 1996 through January 2010, she served as President and Chief Executive Officer of Boston Medical Center, a private, not-for-profit, 626-bed, academic medical center with a community-based focus. From 1994 to 1996, she served as President and Chief Executive Officer of Boston University Medical Center Hospital. From 1987 to 1994, Ms. Ullian served as President and Chief Executive Officer of Faulkner Hospital. She also serves as a director of Thermo Fisher Scientific Inc. and Hologic, Inc. In addition, Ms. Ullian was a member of the Board of Directors of Valeant Pharmaceuticals, Inc. during 2005 through 2007.

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Ms. Ullian holds a B.A. in political science from Tufts University and an M.P.H. from the University of Michigan.

Mr