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Positive Phase 2 Interim Data from First Study of Telaprevir in People Co-Infected with Hepatitis C and HIV Presented at CROI Conference

Early results from ongoing study showed that the hepatitis C virus was undetectable by week 4 in 70% of people treated with telaprevir-based combination therapy

BOSTON, Mar 2, 2011 (BUSINESS WIRE)-- Vertex Pharmaceuticals Incorporated (Nasdaq: VRTX) announced today interim results from an ongoing, two-part (A and B), Phase 2 study evaluating telaprevir in combination with pegylated-interferon and ribavirin compared to pegylated-interferon and ribavirin alone in people who are infected with both genotype 1 hepatitis C virus (HCV) and human immunodeficiency virus (HIV), also known as HCV-HIV co-infection. All people in this study were new to hepatitis C treatment. Part A of the study is evaluating telaprevir in people who are not currently being treated with antiretroviral therapy (ART) for HIV infection. Part B of the study is evaluating telaprevir in people receiving Atripla® or a Reyataz®-based regimen for HIV. These initial HIV regimens were selected based on current HIV treatment guidelines(1) and data from drug-drug interaction studies of telaprevir and commonly used ART medicines. Data from the co-infection study were presented today at the 18th Conference on Retroviruses and Opportunistic Infections (CROI) taking place February 27 to March 2, 2011 in Boston.

The primary endpoint of the study is to evaluate the safety and tolerability of telaprevir-based combination therapy in people co-infected with hepatitis C and HIV. The interim analysis was conducted when all patients had reached week 4 of treatment. At that time, 70 percent (n=26/37) of people in the study (Parts A and B) who received telaprevir-based combination therapy had undetectable hepatitis C virus by week 4 (rapid viral response, RVR) compared to 5 percent (n=1/22) of people who received pegylated-interferon and ribavirin alone. HIV viral load and CD4 counts were stable among patients receiving a telaprevir-based regimen. Adverse events that occurred more frequently (≥10% difference) in the telaprevir arms compared to placebo were pruritus, nausea, dizziness, pyrexia, anorexia and vomiting. The majority of adverse events were mild or moderate.

"Research in hepatitis C has shown that people who respond early to treatment have a higher likelihood of achieving a viral cure," said Robert Kauffman, M.D., Ph.D., Senior Vice President and Chief Medical Officer at Vertex. "These interim results are encouraging because they showed a high proportion of people in the study had a rapid viral response to telaprevir. We will use what we are learning from this study to inform the design of a Phase 3 co-infection study of telaprevir planned for the end of the year."

Interim Study Results
Sixty people were enrolled in this Phase 2 study. At the time of the analysis, all study participants had reached week 4 of treatment and 69 percent of patients (n=41/59) had completed a week 12 assessment. Data on one patient were not available when the analysis was performed. The preliminary results from this study are based on an interim analysis of 59 patients. For the purposes of this analysis, the 12-week results do not include patients who were still on treatment but had not yet reached the 12-week time point in the study.

Intent-to-Treat Interim Analysis

	Part A (No HAART)		Part B Atripla®		Part B Reyataz®-based regimen		Total	
	TVR-based Arm+	Control Arm++	TVR-based Arm+	Control Arm++	TVR-based Arm+	Control Arm++	TVR-based Arm+	Control Arm++
RVR*	71% (5/7)	0% (0/6)	75% (12/16)	13% (1/8)	64% (9/14)	0% (0/8)	70% (26/37)	5% (1/22)
cEVR**	71% (5/7)	17% (1/6)	75% (12/16)	13% (1/8)	57% (8/14)	13% (1/8)	68% (25/37)	14% (3/22)

Atripla (efavirenz, tenofovir disoproxil fumarate and emtricitabine): TVR was dosed at 1,125 mg, every 8 hours (q8h).

Reyataz-based regimen (ritonavir-boosted atazanavir, tenofovir disoproxil fumarate and emtricitabine or lamivudine): TVR was dosed at 750 mg, every 8 hours (q8h).

**RVR: rapid viral response; undetectable (<25IU/mL undetectable by Roche COBAS Taqman HCV test) at week 4.*
***cEVR: complete early viral response; undetectable (<25IU/mL undetectable by Roche COBAS Taqman HCV test) at week 12.*

+12 weeks of telaprevir (TVR), Pegasys® (PEG, pegylated-interferon alfa-2a) and Copegus® (RBV, ribavirin) followed by 36 weeks of only PEG and RBV.
++48 weeks of PEG and RBV only for hepatitis C treatment.

The most common adverse events (≥15% of people) regardless of treatment arm were fatigue, pruritus, nausea, headache, dizziness, pyrexia, anorexia, vomiting, diarrhea and chills. Of these adverse events, pruritus, nausea, dizziness, pyrexia, anorexia and vomiting occurred more frequently in the telaprevir arms (≥10% difference) compared to placebo. The majority of adverse events were mild or moderate. Two people (n=2/14, or 14 percent) in a telaprevir-based treatment arm who were also receiving a Reyataz-based regimen discontinued part or all of the hepatitis C treatment regimen due to adverse events. There were no discontinuations due to adverse events in any of the other treatment arms. Final sustained viral response (SVR, or viral cure) results from this study in all 60 people are expected in 2012.

About the Ongoing Phase 2 Study
This study is a Phase 2, two-part (A and B), randomized, double-blind, placebo-controlled, parallel group, multi-center study in people chronically infected with both genotype 1 hepatitis C virus and human immunodeficiency virus (HIV) who were new to hepatitis C treatment. The study enrolled 60 people. This interim analysis includes 59 people who received at least one dose of telaprevir or placebo and for whom data were available. The primary endpoint of the study is to evaluate the safety and tolerability of telaprevir-based combination therapy in people co-infected with hepatitis C and HIV. A secondary endpoint is to evaluate rates of SVR. The study is being conducted by Vertex in collaboration with Tibotec BVBA.

People in Part A and Part B of the study were randomized to receive either 12 weeks of telaprevir or placebo in combination with peginterferon alfa-2a (Pegasys®) and ribavirin (Copegus®) followed by 36 weeks of peginterferon alfa-2a and ribavirin alone. Part A (n=13) of the study enrolled people who were not receiving antiretroviral therapy (ART) for the treatment of HIV. Part B (n=47) enrolled people who were being treated for HIV with either Atripla (n=24) or a Reyataz-based regimen (n=23). For people in Part B who were receiving Atripla, telaprevir was dosed at 1,125 mg every eight hours (q8h) based on drug-drug interaction data from a Phase 1 study. For people in Part B who were receiving a Reyataz-based regimen telaprevir was dosed at 750 mg every eight hours (q8h). The ART regimens evaluated in this study were selected based on current HIV treatment guidelines from the U.S. Department of Health and Human Services and International AIDS Society and drug-drug interaction studies of telaprevir and HIV medicines.

Additional Data Presented at CROI: Results from Multiple Phase 1 Drug-Drug Interaction Studies
Results from multiple Phase 1 studies evaluating the drug-drug interactions between telaprevir and commonly used HIV medicines were also presented at the CROI conference. The HIV medicines evaluated in these studies included ritonavir, ritonavir-boosted protease inhibitors, a non-nucleoside reverse-transcriptase inhibitor (NNRTI) and a nucleotide analogue reverse-transcriptase inhibitor (NRTI). The ritonavir-boosted protease inhibitors studied were lopinavir, atazanavir, darunavir and fosamprenavir; the NNRTI was efavirenz and the NRTI was tenofovir.

Results from a Phase 1 study of telaprevir and ritonavir (Abstract #629)

- No significant boosting of telaprevir exposure by low-dose ritonavir was observed when telaprevir was given in combination with ritonavir.

Results from multiple Phase 1 studies evaluating the interaction between telaprevir and ritonavir-boosted protease inhibitors, NNRTIs and NRTIs (Abstract #119)

- Telaprevir slightly increased the exposure to ritonavir-boosted atazanavir. Ritonavir-boosted atazanavir slightly reduced the exposure to telaprevir. This interaction was not considered to be clinically significant. A HIV regimen that includes ritonavir-boosted atazanavir is being evaluated in an ongoing Phase 2 study of telaprevir-based therapy in people infected with both hepatitis C and HIV.
- An interaction between efavirenz and telaprevir (750 mg, every eight hours) was observed, but a higher dose of telaprevir (1,125 mg, every eight hours) could largely offset the interaction. This higher dose of telaprevir is being evaluated as part of an ongoing Phase 2 study in people co-infected with hepatitis C and HIV who are also receiving efavirenz as part of their HIV treatment.
- Significant interactions were observed between telaprevir and boosted-lopinavir, darunavir and fosamprenavir, such that telaprevir-based combination therapy is not currently being evaluated for people taking these HIV medicines.

About Telaprevir
Telaprevir is an investigational, oral inhibitor that acts directly on the HCV protease, an enzyme essential for viral replication. To date, more than 2,500 people with genotype 1 hepatitis C have received telaprevir in Phase 2 and Phase 3 studies.

Vertex is developing telaprevir in collaboration with Tibotec BVBA and Mitsubishi Tanabe Pharma. Vertex has rights to commercialize telaprevir in North America. Through its affiliate, Janssen, Tibotec has rights to commercialize telaprevir in Europe, South America, Australia, the Middle East and certain other countries. Mitsubishi Tanabe Pharma has rights to commercialize telaprevir in Japan and certain Far East countries.

Telaprevir has been granted priority review by the U.S. Food and Drug Administration (FDA) and by Health Canada and accelerated assessment by the European Medicines Agency for the treatment of people chronically infected with genotype 1 hepatitis C virus (HCV). The applications include data from three registrational studies, ADVANCE, ILLUMINATE and REALIZE, which evaluated telaprevir in people with hepatitis C who were new to treatment as well as those who did not achieve a viral cure after treatment with currently available medicines. For complete information on the clinical trials or a fact sheet on the trial designs visit: www.vrtx.com/press.cfm.

About Hepatitis C and HIV Co-Infection
There are 1 million people living with HIV in the United States.(2) It's estimated that up to 30 percent of people living with HIV/AIDS are also infected with hepatitis C. (3) There have been dramatic improvements in the treatment of HIV and the prognosis for people living with HIV. However, liver disease progresses more rapidly in people co-infected with hepatitis C and HIV, with an increased rate of progression to cirrhosis, decompensated liver disease, hepatocellular carcinoma and death. (4,5,6)

About Hepatitis C
Hepatitis C is a serious liver disease caused by the hepatitis C virus, which is spread through direct contact with the blood of infected people and ultimately affects the liver.(7) Chronic hepatitis C can lead to serious and life-threatening liver problems, including liver damage, cirrhosis, liver failure or liver cancer.(7) Though many people with hepatitis C may not experience symptoms, others may have symptoms such as fatigue, fever, jaundice and abdominal pain.7 Approximately 60 percent of genotype 1 hepatitis C patients who undergo treatment with an initial 48-week regimen with pegylated-interferon and ribavirin, the currently approved medicines, do not achieve SVR,(8,9,10) or viral cure.(11) If treatment is not successful and a person does not achieve a viral cure, they remain at an increased risk for progressive liver disease.(12,13,14,15,16)

More than 170 million people worldwide are chronically infected with hepatitis C. In the United States, nearly 4 million people have chronic hepatitis C and 75 percent of them are unaware of their infection.(17) The majority of people with hepatitis C in the United States were born between 1946 and 1964, accounting for two of every three people with chronic hepatitis C.(16) Hepatitis C is the leading cause of liver transplantations in the United States and is reported to contribute to 4,600 to 12,000 deaths annually.(13) By 2029, total annual medical costs in the United States for people with hepatitis C are expected to more than double, from $30 billion in 2009 to approximately $85 billion.(16)

Special Note Regarding Forward-looking Statements
This press release contains forward-looking statements as defined in the Private Securities Litigation Reform Act of 1995, including statements regarding (i) the interim results being encouraging because they showed a high proportion of people in the study had a rapid response to telaprevir; (ii) Vertex's plan to use what it is learning from the study to inform a Phase 3 co-infection study of telaprevir planned for the end of 2011; (iii) expectations that final SVR results from the study will be available in 2012 and (iv) the possibility that a higher dose of telaprevir could largely offset the interaction observed between efavirenz and telaprevir. While Vertex believes the forward-looking statements contained in this press release are accurate, there are a number of factors that could cause actual events or results to differ materially from those indicated by such forward-looking statements. Those risks and uncertainties include, among other things, the risks that efforts to develop telaprevir as a treatment for patients co-infected with genotype 1 HCV and HIV may not proceed due to technical, scientific, commercial, financial or other reasons; that final outcomes, including SVR rates, from this clinical trial and any future clinical trials of telaprevir in patients with HCV-HIV co-infection may not be favorable; that RVR and cEVR may not be predictive of SVR in patients with HCV-HIV co-infection and the other risks listed under Risk Factors in Vertex's annual report and quarterly reports filed with the Securities and Exchange Commission and available through Vertex's website at www.vrtx.com. Vertex disclaims any obligation to update the information contained in this press release as new information becomes available.

About Vertex
Vertex creates new possibilities in medicine. Our team aims to discover, develop and commercialize innovative therapies so people with serious diseases can lead better lives.

Vertex scientists and our collaborators are working on new medicines to cure or significantly advance the treatment of hepatitis C, cystic fibrosis, epilepsy and other life-threatening diseases.

Founded more than 20 years ago in Cambridge, MA, we now have ongoing worldwide research programs and sites in the U.S., U.K. and Canada.

For more information and to view Vertex's press releases, please visit www.vrtx.com.

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