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New Data From Phase 3 Studies Showed Superior SVR (Viral Cure) Rates Achieved with Telaprevir-Based Combination Therapy in People with Hepatitis C, Regardless of Race or Stage of Liver Disease

-75% of people treated in the Phase 3 ADVANCE study achieved a viral cure with telaprevir; majority of people treated for a total of 24 weeks-
-62% of African Americans/Blacks in the ADVANCE study achieved a viral cure with telaprevir-
-Low discontinuation rates of all drugs due to adverse events-

BOSTON, Oct 30, 2010 (BUSINESS WIRE) -- Vertex Pharmaceuticals Incorporated (Nasdaq: VRTX) today announced new data from its Phase 3 studies of people with genotype 1 chronic hepatitis C who have not been treated previously. In these studies, the majority of people achieved superior sustained viral response (SVR or viral cure) rates with a telaprevir-based combination regimen, compared to current therapies, regardless of race/ethnicity or stage of liver fibrosis (factors known to limit response to current hepatitis C treatments). Patients in the ADVANCE and ILLUMINATE studies were given telaprevir with pegylated-interferon and ribavirin for the first 12 weeks of the studies, followed by treatment with pegylated-interferon and ribavirin alone for a total of either 24 weeks or 48 weeks based on their response to treatment at weeks 4 and 12. Final data from the Phase 3 ADVANCE and ILLUMINATE studies are being presented at the 61st Annual Meeting of the American Association for the Study of Liver Diseases (AASLD), which takes place in Boston October 29 to November 2.

"In our Phase 3 program, starting people with 12 weeks of telaprevir-based combination therapy resulted in significant improvements in viral cure rates, regardless of race, extent of liver damage or experience with prior treatment," said Robert Kauffman, M.D., Ph.D., Senior Vice President and Chief Medical Officer for Vertex. "The results of the ADVANCE and ILLUMINATE studies represent a major milestone in the development of telaprevir and offer hope for doctors and the millions of people living with hepatitis C who need new and more effective medicines."

Vertex Pharmaceuticals Incorporated is developing telaprevir in collaboration with Tibotec and Mitsubishi Tanabe Pharma.

Results from ADVANCE & ILLUMINATE

Overall in ADVANCE, 75% of people treated with a telaprevir-based combination regimen for 12 weeks, followed by an additional 12 or 36 weeks of pegylated-interferon and ribavirin alone, achieved SVR, compared to 44% of people treated with 48 weeks of pegylated-interferon and ribavirin alone. New data from this study showed that 62% of African Americans/Blacks achieved SVR with telaprevir compared to 25% of African Americans/Blacks who were treated with pegylated-interferon and ribavirin alone. Additionally, 62% of people with advanced liver fibrosis or cirrhosis (scarring of the liver) achieved SVR with telaprevir compared to 33% who were treated with pegylated-interferon and ribavirin alone.

Response-guided therapy was used in ADVANCE, whereby patients whose virus was undetectable at weeks 4 and 12 of treatment with telaprevir-based therapy were eligible to reduce their treatment time by half - from 48 weeks to 24 weeks. ILLUMINATE was designed to confirm both the use of response-guided therapy and to evaluate whether there was any benefit in extending therapy from 24 weeks to 48 weeks in people who met these criteria. In ADVANCE and ILLUMINATE, 58% and 65% of people, respectively, met these criteria for 24-week total treatment. In ILLUMINATE there was no benefit in extending therapy to 48 weeks.

In ILLUMINATE, 72% of people overall achieved SVR with telaprevir-based therapy. New data from this study showed that 60% of African Americans/Blacks and 63% of people with advanced liver fibrosis or cirrhosis achieved SVR with telaprevir-based therapy in the overall study analysis. Of African Americans/Blacks whose virus was undetectable at weeks 4 and 12, 88% of people achieved SVR in both the 24-week and 48-week randomized treatment arms. There was no control arm of pegylated-interferon and ribavirin alone in ILLUMINATE.

The safety and tolerability profile of telaprevir was consistent in both trials, with low discontinuation rates of all drugs during the telaprevir treatment phase due to adverse events.

"Less than half of people with the most common form of hepatitis C - genotype 1- achieve a viral cure with currently approved

medicines, and factors such as race and extent of liver fibrosis can further limit cure rates to less than a third," said Ira Jacobson, M.D., Chief of the Division of Gastroenterology and Hepatology, at New York-Presbyterian Hospital/Weill Cornell Medical Center, and the Vincent Astor Distinguished Professor of Medicine at Weill Cornell Medical College. "After treatment with telaprevir-based combination therapy in the ADVANCE study, 75% of people overall achieved a viral cure. Importantly, 62% of African Americans/Blacks and people with extensive liver disease achieved a viral cure - nearly twice as many as those who received pegylated-interferon and ribavirin alone."

ADVANCE

Treatment Group	RVR+	eRVR++	SVR				
			Overall	Percent of patients w/ eRVR who achieved SVR	Bridging Fibrosis /Cirrhosis	African American/ Black	Hispanic/ Latino
12-week TVR- based- arm* (n=363)	68% (n=246/363)	58% (n=212/363)	75%+/- (n=271/363)	89% (n=189/212)	62% (n=45/73)	62% (n=16/26)	74% (n=26/35)
8-week TVR-based- arm (n=364)**	66% (n=242/364)	57% (n=207/364)	69%+/- (n=250/364)	83% (n=171/207)	53% (n=45/85)	58% (n=23/40)	66% (n=29/44)
Control arm* (n=361)**	9% (n=34/361)	8% (n=29/361)	44% (n=158/361)	97% (n=28/29)	33% (n=24/73)	25% (n=7/28)	39% (n=15/38)

* 12 weeks of telaprevir (TVR), Pegasys(R) (PEG, pegylated-interferon alfa-2a) and Copegus(R) (RBV, ribavirin) followed by 12 or 36 weeks of only PEG and RBV, based on response to treatment at week 4 and week 12

** 8 weeks of telaprevir (TVR) Pegasys (PEG, pegylated-interferon alfa-2a) and Copegus (RBV, ribavirin) followed by 16 or 40 weeks of only PEG and RBV, based on response to treatment at weeks 4 and 12

*** 48 weeks of PEG and RBV

+ RVR: rapid viral response; undetectable (<25 IU/mL undetectable by Roche COBAS Taqman HCV test) at week 4

++ eRVR: extended rapid viral response; undetectable (<25 IU/mL undetectable by Roche COBAS Taqman HCV test) at weeks 4 and 12

+/- The SVR rates observed in the two telaprevir-based treatment arms were statistically significant when compared to the control arm (p<0.0001).

Relapse rates were 9% (27/314), 9% (28/295) and 28% (64/229) in the 12-week telaprevir-based arm, the 8-week telaprevir-based arm and the control arm, respectively

"Many patients today are not motivated to begin hepatitis C therapy given the year-long treatment time and low cure rates with approved therapies," said Kenneth Sherman, M.D., Ph.D., Professor of Medicine at the University of Cincinnati College of Medicine, Director of the Division of Digestive Diseases for UC Health. "Data from the ILLUMINATE study are extremely promising and showed that high viral cure rates and shorter treatment duration may be possible for the majority of people who have not been treated previously."

ILLUMINATE

Treatment Group	RVR	eRVR	SVR			
			Overall (ITT+)	**Bridging Fibrosis/ Cirrhosis**	**African American/ Black**	**Hispanic/ Latino**
24-week eRVR* arm (n=162)	All patients in these groups achieved RVR and eRVR		92% (n=149/162)	82% (n=31/38)	88% (n=15/17)	94% (n=17/18)
48-week eRVR* arm (n=160)			88% (n=140/160)	88% (n=29/33)	88% (n=15/17)	82% (n=9/11)
Overall (n=540)**	72% (n=389/540)	65% (352/540)	72% (n=388/540)	63% (n=94/149)	60% (n=44/73)	67% (n=36/54)

All patients received 12 weeks TVR combined with PEGASYS (PEG) and Copegus (RBV) plus either an additional 12 or 36 weeks with PEG/RBV alone.

* Reflects people whose hepatitis C virus was undetectable (<25 IU/mL undetectable by Roche COBAS Taqman HCV test) at weeks 4 and 12 (eRVR) and who remained on treatment through Week 20. They were randomized to receive either 24 or 48 weeks of total therapy.

** Overall efficacy analysis for patients treated with telaprevir in ILLUMINATE

+ ITT or intent-to-treat analysis

Relapse rates were 8% (37/469) overall and 6% (9/159) and 3% (4/154) in the 24-week and 48-week eRVR treatment groups respectively

Additional Data at AASLD

Results from the EXTEND study are also being presented at the meeting. EXTEND is a long-term follow-up study of patients who received telaprevir-based regimens in the PROVE Phase 2 clinical trials and was designed to evaluate whether people maintain their SVR (viral cure) over time and to observe changes in hepatitis C viral resistance variants in those telaprevir-treated patients who had not achieved SVR. The results showed that after an average of two years of follow-up, SVR rates with telaprevir were durable in 99% (122/123) of patients with SVR who took part in the trials. Among patients who did not achieve SVR and who had resistant variants at the start of the EXTEND study, 89% (50/56) no longer had detectable variants.

Safety & Tolerability Results from ADVANCE and ILLUMINATE

The safety and tolerability results of telaprevir-based combination regimens were consistent in the ADVANCE and ILLUMINATE studies. Treatment discontinuation rates of all drugs due to adverse events during the telaprevir treatment phase in the ADVANCE study were low in the telaprevir arms (7% to 8%) and the control arm (4%). The most common adverse events (>25% of people) reported in both studies, regardless of treatment arm, were rash, fatigue, pruritis, headache, nausea, anemia, insomnia, diarrhea, influenza-like symptoms and pyrexia. The majority of these adverse events were mild to moderate.

To optimize each patient's opportunity to achieve viral cure in the Phase 3 studies, sequential discontinuation of the drugs was recommended if discontinuation of treatment was necessary due to adverse events. Investigators were not required to discontinue the use of all three drugs at once, and, for example, patients may have continued on pegylated-interferon and ribavirin after discontinuing telaprevir only.

Discontinuation (%) of all drugs during the telaprevir treatment phase

ADVANCE	
12-week telaprevir arm	7%
8-week telaprevir arm	8%
Control Arm	4%
ILLUMINATE*	
Total	7%

*There was no control arm in ILLUMINATE

In ADVANCE, discontinuation of telaprevir or placebo only due to adverse events during the telaprevir treatment phase occurred in 11% of people in the 12-week telaprevir arm, 7% of people in the 8-week telaprevir arm and 1% of people in the control arm. In ILLUMINATE, 12% of people overall discontinued telaprevir only due to adverse events during the telaprevir treatment phase.

Discontinuation of all drugs due to either rash or anemia was low in both studies (1% to 3%). Rash was primarily characterized as eczema-like, manageable and resolved upon stopping telaprevir. Ninety-two percent and 95% of rash was mild to moderate in ADVANCE and ILLUMINATE, respectively. Rash was managed with the use of topical corticosteroids and antihistamines, and anemia was primarily managed by reducing the dose of ribavirin. The use of erythropoiesis-stimulating agents (ESAs) were not allowed in any of the Phase 3 clinical studies.

Planned NDA Submission and Additional Phase 3 Analysis

Three Phase 3 studies, ADVANCE, ILLUMINATE and REALIZE will form the basis of the clinical portion of the telaprevir New Drug Application (NDA) submission to the U.S. Food and Drug Administration (FDA), which is expected to be complete in the fourth quarter of 2010. REALIZE evaluated telaprevir in three groups of people with genotype 1 hepatitis C who did not achieve a viral cure with previous treatment: (1) those who relapsed, (2) those who achieved a partial response and (3) those who had a null response to prior treatment (<2 $\log_{10}$ reduction in HCV RNA at week 12). Topline results from REALIZE were reported in a press release on September 7, 2010.

At a 2010 medical meeting, Vertex's collaborator Tibotec reported results on the correlation of poor interferon response (<1 $\log_{10}$ reduction in HCV RNA at week 4) with the standard definition for null response (< 2 $\log_{10}$ reduction in HCV RNA at week 12).[12,13] In these results, 38% (9/24) of patients who had a less than 1 $\log_{10}$ response at week 4 subsequently had a greater

than 2 $\log_{10}$ reduction in HCV RNA at week 12. This analysis suggested that some patients would be misclassified as null responders using the definition of a less than 1 $\log_{10}$ reduction in HCV RNA at week 4.

An additional sub-analysis in the REALIZE study showed that among the combined partial responder and relapser patients in the telaprevir delayed start (lead-in) arm of the REALIZE study, 18% (31/171) had a less than 1 $\log_{10}$ reduction in HCV RNA at week 4 and of these patients, 58% (18/31) achieved SVR compared to 31% (46/147) of patients prospectively-defined as prior null responders (<2 $\log_{10}$ at week 12) in the combined telaprevir-based treatment arms. Each prior response category contained a different proportion of patients that experienced a less than 1 $\log_{10}$ reduction in HCV RNA at week 4 of the delayed start (lead-in) arm, but SVR rates among these subgroups also varied by prior response category. These data suggest that prior treatment response is a better predictor of SVR than a 1 $\log_{10}$ reduction at week 4 and that prospectively defined null responders and those patients with a less than 1 $\log_{10}$ reduction in HCV RNA at week 4 of a lead-in represent different patient populations.

About the Telaprevir Development Program

To date, more than 2,500 people with hepatitis C have received telaprevir-based therapy as part of Phase 2 studies and the Phase 3 ADVANCE, ILLUMINATE and REALIZE studies. Together, these studies enrolled people with genotype 1 hepatitis C who had not been treated for their disease previously (ADVANCE and ILLUMINATE) as well as people who had been treated before but did not achieve a viral cure (REALIZE). A fact sheet on the Phase 3 telaprevir development program is available at http://www.vrtx.com/aasld2010.html.

Phase 3 ADVANCE Trial

The pivotal Phase 3 ADVANCE study evaluated telaprevir-based response-guided regimens in 1,095 treatment-naïve patients. The primary endpoint of ADVANCE was SVR, defined as the proportion of people who had undetectable HCV RNA both at the end of treatment and 24 weeks after the end of treatment. The secondary endpoint was to evaluate the safety of telaprevir when dosed in combination with pegylated-interferon and ribavirin. As part of a response-guided design, people in the telaprevir-based treatment arms who had undetectable HCV RNA at weeks 4 and 12 of treatment were eligible to receive a total of 24 weeks therapy. Patients who did not meet the response-guided criterion but were undetectable at week 24, received 48 weeks of total therapy.

Phase 3 ILLUMINATE Trial

The ILLUMINATE trial was a supplemental Phase 3 study designed to evaluate whether there was any benefit in extending therapy from 24 to 48 weeks in people whose hepatitis C was undetectable at weeks 4 and 12 of therapy. The primary endpoint of the study was the proportion of people who achieved SVR in the randomized treatment groups, evaluated by a non-inferiority analysis.

Phase 3 REALIZE Trial

REALIZE was the second pivotal Phase 3 trial and was designed to evaluate telaprevir-based regimens in people who had received pegylated-interferon-based therapy but did not achieve a cure. REALIZE is the only Phase 3 clinical trial to date of an investigational direct-acting antiviral to include all major subgroups of difficult-to-treat patients including null responders, who were defined as people who had a less than a 2 $\log_{10}$ reduction in viral load by week 12 of a prior course of therapy.

Vertex retains commercial rights to telaprevir in North America. 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.

About Hepatitis C

Hepatitis C is a liver disease caused by the hepatitis C virus, which is found in the liver and blood of people with the disease.[2] According to a 2010 report from the Institute of Medicine, up to 3.9 million people in the United States have chronic hepatitis C and 75% of those infected are unaware of their infection.[3] Approximately 60 percent of genotype 1 patients who undergo an initial 48-week regimen with pegylated-interferon and ribavirin, the currently approved treatment regimen, do not achieve SVR,[4,5,6] or viral cure.[1]

Hepatitis C is spread through direct contact with the blood of infected people.[2] Though many people with hepatitis C may not experience symptoms, others may have symptoms such as fatigue, fever, jaundice and abdominal pain.[2] Chronic hepatitis C

can lead to serious and life-threatening liver problems, including liver damage, cirrhosis, liver failure or liver cancer.[2] If treatment is not successful and a person does not achieve a viral cure, they remain at an increased risk for progressive liver disease.[7,8,9,10,11] In the United States, hepatitis C is the leading cause of liver transplantations and is reported to contribute to 4,600 to 12,000 deaths annually.[8] The majority of people with hepatitis C were born between 1946 and 1964, accounting for two of every three people with chronic hepatitis C.[11] By 2029, total annual medical costs in the U.S. for people with hepatitis C are expected to more than double, from $30 billion in 2009 to approximately $85 billion.[11]

Additional resources for media, including a hepatitis C backgrounder and glossary of common terms, are available at: http://investors.vrtx.com/press.cfm

About Vertex

Vertex Pharmaceuticals Incorporated is a global biotechnology company committed to the discovery and development of breakthrough small molecule drugs for serious diseases. The Company's strategy is to commercialize its products both independently and in collaboration with other pharmaceutical companies. Vertex's product pipeline is focused on viral diseases, cystic fibrosis, inflammation, autoimmune diseases, epilepsy, cancer and pain.

Vertex co-discovered the HIV protease inhibitor, Lexiva, with GlaxoSmithKline.

Lexiva is a registered trademark of the GlaxoSmithKline group of companies.

PEGASYS(R) and COPEGUS(R) are a registered trademarks of Hoffman-La Roche.

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Special Note Regarding Forward-looking Statements

This press release contains forward-looking statements, including statements regarding (i) the data from ILLUMINATE being extremely promising and (ii) the expectation that the Company's NDA for telaprevir will be completed in the fourth quarter of 2010. While the company 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, that Vertex could experience unforeseen delays in submitting the NDA for telaprevir and/or obtaining approval to market telaprevir; that there may be varying interpretations of the data from the telaprevir clinical trials; that future outcomes from clinical trials of telaprevir may not be favorable; and that future scientific, clinical, competitive or other market factors may adversely affect the potential for telaprevir-based combination therapy 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.

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