September 14, 2011

New England Journal of Medicine Publishes Data from Phase 3 ILLUMINATE Study of INCIVEK™ (telaprevir) in Hepatitis C

- High viral cure rate achieved with a 24-week INCIVEK combination regimen -

CAMBRIDGE, Mass.--(BUSINESS WIRE)-- Vertex Pharmaceuticals Incorporated (Nasdaq: VRTX) today announced that the *New England Journal of Medicine* (NEJM) published data from a Phase 3 study of INCIVEK™ (telaprevir) tablets in people with genotype 1 chronic hepatitis C who were new to treatment. In ILLUMINATE, INCIVEK (in-SEE-veck) was given for the first 12 weeks in combination with pegylated-interferon and ribavirin. Nearly two-thirds of patients responded early to INCIVEK combination treatment (measured by having undetectable hepatitis C virus at weeks 4 and 12 of treatment) and were randomly assigned to receive an additional 12 weeks or 36 weeks of treatment with pegylated-interferon and ribavirin alone. Similarly high rates of sustained viral response (SVR, or viral cure) were achieved by people in both treatment groups. Rash and anemia were the most common side effects reported with INCIVEK in this study and each led to treatment discontinuation of all medicines in about 1 percent of people during the INCIVEK treatment phase. Data from ILLUMINATE are published in the September 15, 2011 issue of NEJM.

"These data are important because they showed that patients who respond early to INCIVEK combination treatment have a high likelihood of achieving a viral cure with 24 weeks of therapy," 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 and principal investigator for the study. "With INCIVEK, we know by week four how patients are initially responding and, for people who have not been treated before, we know by week 12 what their chances are of completing all therapy in 24 weeks. I believe these are important motivators for patients to start and stay on treatment."

"Nearly two-thirds of people in this study had an early response to INCIVEK combination treatment and were eligible to stop all therapy at week 24," said Peter Mueller, Ph.D., Chief Scientific Officer and Executive Vice President of Global Research and Development at Vertex. "Cutting treatment time in half eliminates 24 weeks of pegylated-interferon and ribavirin and represents a major advance in how hepatitis C is treated."

Results From ILLUMINATE

ILLUMINATE was an open-label, randomized Phase 3 study that evaluated INCIVEK in combination with Pegasys® (pegylated-interferon alfa-2a) and Copegus® (ribavirin) in 540 people with genotype 1 chronic hepatitis C who were new to treatment. In this study, 65 percent (352/540) of people had undetectable hepatitis C virus at weeks 4 and 12. To assess whether there was any benefit to extending treatment in this group, eligible patients who remained on treatment were randomized at week 20 to receive a total of either 24 weeks or 48 weeks of treatment. Patients whose hepatitis C virus was detectable at weeks 4 or 12 were assigned to receive 48 weeks of total treatment.

The primary endpoint of the study was the proportion of people who achieved SVR in the randomized treatment groups (those who had undetectable hepatitis C virus at weeks 4 and 12), evaluated by a non-inferiority analysis.

The data published in NEJM showed that the rates of viral cure were similar between the two groups of people whose hepatitis C virus was undetectable at weeks 4 and 12*:*

- 92% SVR (149/162) for people who received the 24-week regimen
- 88% SVR (140/159) for people who received the 48-week regimen

Rash and anemia are the most serious side effects associated with INCIVEK. The most common side effects reported with INCIVEK combination treatment include fatigue, itching, nausea, diarrhea, vomiting, anal or rectal problems and taste changes.

INCIVEK was approved by U.S. Food and Drug Administration (FDA) in May 2011 and by Health Canada in August 2011 for the treatment of genotype 1 chronic hepatitis C in adults with compensated liver disease (some level of damage to the liver but the liver still functions), including cirrhosis (scarring of the liver). The approvals were based on data from three Phase 3 studies: ADVANCE, REALIZE and ILLUMINATE. Data from the ADVANCE and REALIZE studies were published in the June 23, 2011

issue of NEJM. More than 2,800 people received INCIVEK combination treatment as part of Phase 2 and Phase 3 clinical studies.

About INCIVEK

INCIVEK is an oral medicine that acts directly on the hepatitis C virus protease, an enzyme essential for viral replication. INCIVEK (750 mg) is given as two 375 mg tablets three times daily for 12 weeks in combination with pegylated-interferon and ribavirin. Each monthly package of INCIVEK contains four weekly boxes that include daily blister strips to help patients keep track of their doses. After the first 12 weeks, all patients stop receiving INCIVEK and continue treatment with pegylated-interferon and ribavirin alone for an additional 12 weeks or 36 weeks of treatment. With INCIVEK combination therapy, more than 60 percent of people treated for the first time, as well as those who relapsed after previous therapy, are expected to complete all treatment in 24 weeks. All other patients receive a total of 48 weeks of treatment.

Vertex developed telaprevir in collaboration with Tibotec BVBA and Mitsubishi Tanabe Pharma. Vertex has rights to commercialize telaprevir in North America where it will be marketed under the brand name INCIVEK (in-SEE-veck). Through its affiliate, Janssen, Tibotec has rights to commercialize telaprevir in Europe, South America, Australia, the Middle East and certain other countries. Telaprevir, which will be known as INCIVO in Europe, received accelerated review by the Committee for Medicinal Products for Human Use (CHMP), which issued a positive opinion in July 2011. Telaprevir was approved in Switzerland in September 2011. Mitsubishi Tanabe Pharma has rights to commercialize telaprevir in Japan and certain Far East countries. Telaprevir has been recommended for approval at the Second Committee on Drugs at the Department on Drugs in the Pharmaceutical Affairs and Food Sanitation Council (PAFSC) in Japan.

IMPORTANT SAFETY INFORMATION

Indication

INCIVEK™ (telaprevir) is a prescription medicine used with the medicines peginterferon alfa and ribavirin to treat chronic (lasting a long time) hepatitis C genotype 1 infection in adults with stable liver problems, who have not been treated before or who have failed previous treatment. It is not known if INCIVEK is safe and effective in children under 18 years of age.

Important Safety Information

INCIVEK should always be taken in combination with peginterferon alfa and ribavirin. Ribavirin may cause birth defects or death of an unborn baby. Therefore, a patient should not take INCIVEK combination treatment if she is pregnant or may become pregnant, or if he is a man with a sexual partner who is pregnant.

INCIVEK and other medicines can affect each other and can also cause side effects that can be serious or life threatening. There are certain medicines patients cannot take with INCIVEK combination treatment. Patients should tell their healthcare providers about all the medicines they take, including prescription and non-prescription medicines, vitamins and herbal supplements.

INCIVEK can cause serious side effects including rash and anemia. The most common side effects of INCIVEK include itching, nausea, diarrhea, vomiting, anal or rectal problems, taste changes and tiredness. There are other possible side effects of INCIVEK, and side effects associated with peginterferon alfa and ribavirin also apply to INCIVEK combination treatment. Patients should tell their healthcare providers about any side effect that bothers them or doesn't go away.

Please see full Prescribing Information for INCIVEK including the Medication Guide, available at www.INCIVEK.com.

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.[1] Chronic hepatitis C can lead to serious and life-threatening liver problems, including liver damage, cirrhosis, liver failure or liver cancer.[1] Though many people with hepatitis C may not experience symptoms, others may have symptoms such as fatigue, fever, jaundice and abdominal pain.[1]

Unlike HIV and hepatitis B virus, chronic hepatitis C can be cured.[2] However, approximately 60 percent of people do not

achieve SVR,[3,4,5] or viral cure,[6] after treatment with 48 weeks of pegylated-interferon and ribavirin alone. 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]

More than 170 million people worldwide are chronically infected with hepatitis C.[6] In the United States, nearly 4 million people have chronic hepatitis C and 75 percent of them are unaware of their infection.[9] Hepatitis C is four times more prevalent in the United States compared to HIV.[9] 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.[10] 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.[11,12] 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.[9]

Additional resources for media are available at: http://investors.vrtx.com/press.cfm.

About Vertex

Vertex creates new possibilities in medicine. Our team discovers, develops and commercializes 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.

(VRTX - GEN)

[1] Centers for Disease Control and Prevention. Hepatitis C Fact Sheet: CDC Viral Hepatitis. Available at: http://www.cdc.gov/hepatitis/HCV/PDFs/HepCGeneralFactSheet.pdf. Accessed March 21, 2011.

[2] Pearlman BL and Traub N. Sustained Virologic Response to Antiviral Therapy for Chronic Hepatitis C Virus Infection: A Cure and So Much More. Clin Infect Dis. 2011 Apr;52(7):889-900.

[3] Manns MP, McHutchison JG, Gordon SC, et al. Peginterferon alfa-2b plus ribavirin compared with interferon alfa-2b plus ribavirin for initial treatment of chronic hepatitis C: a randomised trial. *Lancet.* 2001;358:958-965.

[4] Fried MW, Shiffman ML, Reddy KR, et al. Peginterferon alfa-2a plus ribavirin for chronic hepatitis C virus infection. *N Engl J Med.* 2002;347:975-982.

[5] McHutchison JG, Lawitz EJ, Shiffman ML, et al; IDEAL Study Team. Peginterferon alfa-2b or alfa-2a with ribavirin for treatment of hepatitis C infection. *N Engl J Med*. 2009;361:580-593.

[6] Ghany MG, Strader DB, Thomas DL, Seeff, LB. Diagnosis, management and treatment of hepatitis C; An update. *Hepatology*. 2009;49 (4):1-40.

[7] Morgan TR, Ghany MG, Kim HY, Snow KK, Lindsay K, Lok AS. Outcome of sustained virological responders and non-responders in the Hepatitis C Antiviral Long-Term Treatment Against Cirrhosis (HALT-C) trial. *Hepatology*. 2008;50(Suppl 4):357A (Abstract 115).

[8] Veldt BJ, Heathcote J, Wedmeyer H. Sustained virologic response and clinical outcomes in patients with chronic hepatitis C and advanced fibrosis. Annals of Internal Medicine. 2007; 147: 677-684.

[9] Institute of Medicine of the National Academies. Hepatitis and liver cancer: a national strategy for prevention and control of hepatitis B and C. Colvin HM and Mitchell AE, ed. Available at: http://www.iom.edu/Reports/2010/Hepatitis-and-Liver-Cancer-A-National-Strategy-for-Prevention-and-Control-of-Hepatitis-B-and-C.aspx. Updated January 11, 2010. Accessed March 21, 2011.

[10] Pyenson B, Fitch K, Iwasaki K. Consequences of hepatitis C virus (HCV): Costs of a baby boomer epidemic of liver disease.

Available at: http://www.natap.org/2009/HCV/051809_01.htm. Updated May 2009. Accessed March 21, 2011. *This report was commissioned by Vertex Pharmaceuticals, Inc.*

[11] Volk MI, Tocco R, Saini S, Lok, ASF. Public health impact of antiviral therapy for hepatitis C in the United States. *Hepatology*. 2009;50(6):1750-1755.

[12] Davis GL, Alter MJ, El-Serag H, Poynard T, Jennings LW. Aging of hepatitis C virus (HCV)-infected persons in the United States: A multiple cohort model of HCV prevalence and disease progression. *Gastroenterology*. 2010;138:513-521.

Photos/Multimedia Gallery Available: http://www.businesswire.com/cgi-bin/mmg.cgi?eid=50004789&lang=en

Vertex Contacts:
Media:
Dawn Kalmar, 617-444-6992
or
Amy Pasqua, 617-444-6992
mediainfo@vrtx.com
or
Patient Inquiries: 1-855- 837-8394
or
Investors:
Michael Partridge, 617-444-6108
or
Lora Pike, 617-444-6755
or
Matthew Osborne, 617-444-6057

Source: Vertex Pharmaceuticals Incorporated

News Provided by Acquire Media