June 7, 2012

Data From Follow-Up Study of KALYDECO™ (ivacaftor) Showed Durable Improvements in Lung Function and Other Measures of Disease in People with Cystic Fibrosis Who Have a Specific Genetic Mutation (G551D)

- Data from nine presentations at the European Cystic Fibrosis Society Conference underscore Vertex's ongoing commitment to change CF treatment by targeting the underlying cause of the disease -

DUBLIN--(BUSINESS WIRE)-- Vertex Pharmaceuticals Incorporated (Nasdaq: VRTX) announced today new data from a long-term follow-up study that showed that the improvements in lung function (forced expiratory volume in one second, FEV_1), respiratory symptoms and weight gain among people who were treated with KALYDECO™ (ivacaftor) for 48 weeks in one of two pivotal studies (STRIVE or ENVISION) were durable for up to 96 total weeks of treatment. The ongoing PERSIST extension study enrolled people with cystic fibrosis (CF) ages 6 and older who have at least one copy of the G551D mutation in the cystic fibrosis transmembrane conductance regulator (*CFTR*) gene and who completed treatment in the Phase 3 STRIVE or ENVISION studies (KALYDECO and placebo treatment groups) and met certain other eligibility criteria. A total of nine presentations on KALYDECO are being presented at the 35th European Cystic Fibrosis Society (ECFS) Conference in Dublin, June 6 to 9, 2012.

"KALYDECO has fundamentally changed the way we approach the development of new medicines for cystic fibrosis by targeting the underlying cause of the disease," said Chris Wright, M.D., Ph.D., Senior Vice President of Global Medicines Development and Affairs at Vertex. "We are working hard to understand which additional patients may be helped by KALYDECO and simultaneously exploring potential new medicines that may be able to help many more people with CF."

KALYDECO is the first medicine to treat the underlying cause of CF, a rare, genetic disease caused by defective or missing CFTR proteins resulting from mutations in the *CFTR* gene. In people with the G551D mutation, KALYDECO helps the defective CFTR protein function more normally. An estimated 1,200 people in the United States and 1,100 people in Europe with CF have at least one copy of the G551D mutation. KALYDECO was approved by the U.S. Food and Drug Administration (FDA) in January 2012 for use in people with CF ages 6 and older who have at least one copy of the G551D mutation in the *CFTR* gene. Vertex recently received a positive opinion from the European Committee for Medicinal Products for Human Use (CHMP) recommending the approval of KALYDECO.

KALYDECO benefits and safety sustained for up to 96 weeks (ECFS Abstract WS6.4, Thursday @ 15:56 GMT)

At the time of this analysis, 74 adults and adolescents (ages 12 or older) who were first treated with KALYDECO in the STRIVE study are continuing treatment in PERSIST and have completed a total of 96 weeks of treatment with KALYDECO. A 9.5 percentage-point mean absolute improvement from the STRIVE baseline in lung function (percent predicted FEV_1) was observed at week 96. Twenty-five children (ages 6 to 11) who were first treated with KALYDECO in the ENVISION study are continuing treatment in PERSIST and have completed a total of 72 weeks of treatment with KALYDECO. A 10.1 percentage-point mean absolute improvement from the ENVISION baseline in lung function was observed at week 72.

In addition, the analysis presented this week showed that people who switched to KALYDECO after receiving 48 weeks of treatment with placebo in the Phase 3 studies (n=86), experienced improvements in lung function, respiratory symptoms and weight gain comparable to those seen in people who received KALYDECO from the beginning of the Phase 3 studies.

Adverse events seen to date in people receiving KALYDECO in the PERSIST study were generally consistent with those seen with KALYDECO treatment during the original Phase 3 studies. The majority of adverse events associated with KALYDECO were mild or moderate in severity and resolved during the reporting period. No new adverse events were identified. The most common adverse events reported in PERSIST were predominantly respiratory-related and included pulmonary exacerbations, cough, productive cough and upper respiratory tract infection. The most commonly reported serious adverse events (that occurred in more than one patient) in PERSIST were pulmonary exacerbations, hemoptysis and intestinal obstruction. At the time of this PERSIST analysis, approximately 1.0 percent of study participants had discontinued treatment due to an adverse event.

KALYDECO improved lung function in people with early-stage CF (ECFS Abstract WS7.6, Thursday @18:00 GMT)

CF-related lung disease is known to start before it's detectable by deterioration in FEV_1. Once FEV_1 has fallen below normal, (80 percent to 85 percent predicted), structural damage may have already occurred; much of this can be irreversible.

Data from a Phase 2 randomized, double-blind, crossover study of people with early-stage CF (FEV_1 greater than 90 percent predicted) ages 6 and older who have at least one copy of the G551D mutation, were presented at the conference and showed that KALYDECO led to statistically significant improvements in lung function. At baseline, the mean percent predicted FEV_1 for study participants (n=20) was 97.2 percent. Through 29 days of treatment, the mean absolute improvement in lung function was 8.7 percentage points compared to placebo (p=0.0103).

"Cystic fibrosis is a progressive disease and as patients get older, lung damage progresses and often becomes irreversible," said KALYDECO investigator Jane Davies, M.D., Royal Brompton Hospital and Imperial College, London. "The goal of this study was to start to help us understand whether patients might benefit from treatment with KALYDECO before they show severe signs and symptoms of CF. The initial findings are encouraging and support longer-term studies and evaluation."

KALYDECO significantly reduced risk of pulmonary exacerbations (ECFS Poster #44)

An analysis of data from the Phase 3 STRIVE study that enrolled people ages 12 and older with at least one copy of the G551D mutation was presented at the conference. As previously reported, people treated with KALYDECO were 55 percent less likely to experience a pulmonary exacerbation compared to those treated with placebo through week 48. Pulmonary exacerbations are generally considered periods of worsening in the signs and symptoms of CF that often require treatment with antibiotics and hospital visits. New data were obtained from statistical modeling and showed that patients treated with KALYDECO were also significantly less likely than those treated with placebo to require hospitalization and intravenous antibiotics. Through 48 weeks, people treated with KALYDECO, compared to those treated with placebo, were 67 percent less likely to require hospitalization for a pulmonary exacerbation and 59 percent less likely to require intravenous antibiotics for a pulmonary exacerbation.

Vertex continues to pursue goal of treating more people with CF

Vertex is committed to developing new medicines to treat the underlying cause of CF. The company plans to begin three additional pivotal studies in 2012 to explore the safety and efficacy of KALYDECO; a study of people with the R117H *CFTR* mutation, a study of people with *CFTR* gating mutations that were not evaluated in the previous Phase 3 studies, and a study of children with CF as young as 2 years old who have gating mutations. Vertex is also conducting two Phase 2 studies of KALYDECO in combination with a CFTR corrector, VX-809 or VX-661, to treat people with the most common form of CF.

KALYDECO, VX-809 and VX-661 were discovered as part of a collaboration with Cystic Fibrosis Foundation Therapeutics, Inc., the nonprofit drug discovery and development affiliate of the Cystic Fibrosis Foundation.

About Cystic Fibrosis

Cystic fibrosis is a rare, life-threatening genetic disease that affects approximately 70,000 people worldwide, including 30,000 people in the United States and 35,000 people in Europe. According to the 2009 Annual Report of the Australian Cystic Fibrosis Registry, approximately 160 people have been identified as having the G551D mutation based on genotype testing, but it's estimated that 8 percent of the nearly 3,000 people with CF in Australia have the G551D mutation.

Today, the median predicted age of survival for a person with CF is approximately 38 years but the median age of death remains in the mid-20s. There are more than 1,800 known mutations in the *CFTR* gene. Some of these mutations, which can be determined by a genetic, or genotyping test, lead to CF by creating non-working or too few CFTR proteins at the cell surface. The absence of working CFTR proteins results in poor flow of salt and water into and out of the cell in a number of organs, including the lungs. This leads to the buildup of abnormally thick, sticky mucus that can cause chronic lung infections and progressive lung damage.

In some people, CFTR proteins are present at the cell surface but do not work properly. One type of this dysfunction is known as the G551D mutation.

About KALYDECO

KALYDECO™ (ivacaftor) is the first treatment to target the underlying cause of CF. KALYDECO (150mg, q12h) was approved by the U.S. Food and Drug Administration in January 2012 for use in people with CF ages 6 and older who have at least one copy of the G551D mutation in the *CFTR* gene. Approximately 600 people with CF have started treatment with KALYDECO since then.

Vertex retains worldwide rights to develop and commercialize KALYDECO. In May 2012, Vertex received a positive opinion by consensus from the European Committee for Medicinal Products for Human Use (CHMP) recommending approval. Vertex is also preparing to submit a regulatory filing in Australia in the third quarter of 2012.

Indication and Important Safety Information

KALYDECO (150mg, q12h) is a prescription medicine used for the treatment of cystic fibrosis (CF) in patients age 6 years and older who have a certain mutation in their *CFTR* gene called the G551D mutation.

KALYDECO is not for use in people with CF due to other mutations in the *CFTR* gene. It is not effective in CF patients with two copies of the F508del mutation (F508del/F508del) in the *CFTR* gene.

It is not known if KALYDECO is safe and effective in children under 6 years of age.

KALYDECO should not be used with certain medicines, including the antibiotics rifampin and rifabutin; seizure medications (phenobarbital, carbamazepine, or phenytoin); and the herbal supplement St. John's Wort.

KALYDECO can cause serious side effects. Serious side effects that may or may not be related to KALYDECO but which occurred more frequently in patients treated with KALYDECO included stomach (abdominal) pain, high liver enzymes in the blood, and low blood sugar. Regular assessment is recommended.

The most common side effects associated with KALYDECO include headache; upper respiratory tract infection (common cold) including sore throat, nasal or sinus congestion, and runny nose; stomach (abdominal) pain; diarrhea; rash; nausea; and dizziness.

These are not all the possible side effects of KALYDECO. Patients should tell their healthcare providers about any side effect that bothers them or doesn't go away.

Please see full U.S. Prescribing Information for KALYDECO at www.KALYDECO.com.

Collaborative History with Cystic Fibrosis Foundation Therapeutics, Inc. (CFFT)

Vertex initiated its CF research program in 1998 as part of a collaboration with CFFT, the nonprofit drug discovery and development affiliate of the Cystic Fibrosis Foundation. This collaboration was expanded to support the accelerated discovery and development of Vertex's CFTR modulators.

About the Cystic Fibrosis Foundation

The Cystic Fibrosis Foundation is the world's leader in the search for a cure for cystic fibrosis. The Foundation funds more CF research than any other organization and nearly every CF drug available today was made possible because of Foundation support. Based in Bethesda, Md., the Foundation also supports and accredits a national care center network that has been recognized by the National Institutes of Health as a model of care for a chronic disease. The CF Foundation is a donor-supported nonprofit organization. For more information, visit www.cff.org.

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, rheumatoid arthritis, 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. Today, Vertex has more than 2,000 employees around the world, and *Science* magazine named Vertex number one on its 2011 list of Top Employers in the life sciences.

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 Dr. Wright's statements in the second paragraph of this press release, Dr. Davies' statements in the ninth paragraph of this press release, and statements regarding (i) Vertex's commitment to change CF treatment by targeting the underlying cause of the disease, (ii) Vertex's plan to begin three additional pivotal studies in 2012 to explore the safety and efficacy of

KALYDECO and (iii) regulatory submissions in Europe and Australia. 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, that final outcomes of ongoing clinical trials or outcomes of future clinical trials of KALYDECO may not be favorable 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 the company's website at www.vrtx.com. Vertex disclaims any obligation to update the information contained in this press release as new information becomes available.

(VRTX-GEN)

Vertex Pharmaceuticals Incorporated
Media: 617-444-6992 or mediainfo@vrtx.com
Zach Barber
Megan Goulart
Dawn Kalmar
or
Investors:
Michael Partridge, 617-444-6108

Source: Vertex Pharmaceuticals Incorporated

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