CRISPR Therapeutics and Vertex Announce New Clinical Data for Investigational Gene-Editing Therapy CTX001™ in Severe Hemoglobinopathies at the 25th Annual European Hematology Association (EHA) Congress

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-Beta thalassemia: Two patients are transfusion independent at 5 and 15 months after CTX001 infusion; data demonstrate clinical proof-of-concept for CTX001 in transfusion-dependent beta thalassemia-

-Sickle cell disease: Patient is free of vaso-occlusive crises at 9 months after CTX001 infusion-

-Five patients with beta thalassemia and two patients with sickle cell disease have been treated to date with CTX001 and all have successfully engrafted-

ZUG, Switzerland and CAMBRIDGE, Mass. and BOSTON, June 12, 2020 (GLOBE NEWSWIRE) -- CRISPR Therapeutics (Nasdaq: CRSP) and Vertex Pharmaceuticals Incorporated (Nasdaq: VRTX) today announced new clinical data for CTX001, an investigational CRISPR-Cas9 gene-editing therapy, from the CLIMB-111 and CLIMB-121 Phase 1/2 trials in transfusion-dependent beta thalassemia (TDT) and severe sickle cell disease (SCD), and highlighted recent progress in the CTX001 development program. These data were presented during an oral presentation at the European Hematology Association (EHA) virtual congress by Dr. Selim Corbacioglu, Professor of Pediatrics and the Chair of Pediatric Hematology, Oncology, and Stem Cell Transplantation, Regensburg University Hospital, Regensburg, Germany.

CLIMB-111 Trial in Transfusion-Dependent Beta Thalassemia Updated Results
Data presented today at EHA demonstrate clinical proof-of-concept for CTX001 in TDT. Data include longer-duration follow-up data for the first patient with TDT treated with CTX001 and new data for the second TDT patient treated. CRISPR Therapeutics and Vertex announced initial data for the first TDT patient in November of 2019.

Patient 1 with TDT has the β0/IVS-I-110 genotype, which is associated with a severe phenotype similar to β0/β0, and had a transfusion requirement of 34 units of packed red blood cells per year (annualized rate during the two years prior to consenting for the trial) before enrolling in the clinical trial. As previously reported, the patient achieved neutrophil engraftment 33 days after CTX001 infusion and platelet engraftment 37 days after infusion. After CTX001 infusion, two serious adverse events (SAEs) occurred, neither of which the principal investigator (PI) considered related to CTX001: pneumonia in the presence of neutropenia, and veno-occlusive liver disease attributed to busulfan conditioning; both subsequently resolved. New data presented today show that at 15 months after CTX001 infusion, the patient was transfusion independent and had total hemoglobin levels of 14.2 g/dL, fetal hemoglobin of 13.5 g/dL, and F-cells (erythrocytes expressing fetal hemoglobin) of 99.4%. Bone marrow allelic editing was 78.1% at 6 months and 76.1% at one year.

Patient 2 with TDT has the β0/IVS-II-745 genotype and had a transfusion requirement of 61 units of packed red blood cells per year (annualized rate during the two years prior to consenting for the trial) before enrolling in the clinical trial. The patient achieved neutrophil engraftment 36 days after CTX001 infusion and platelet engraftment 34 days after infusion. After CTX001 infusion, two SAEs occurred, neither of which the PI considered related to CTX001: pneumonia and an upper respiratory tract infection; both subsequently resolved. At 5 months after CTX001 infusion, the patient was transfusion independent and had total hemoglobin levels of 12.5 g/dL, fetal hemoglobin of 12.2 g/dL, and F-cells (erythrocytes expressing fetal hemoglobin) of 99.9%. Hemoglobin data over time are presented for Patient 1 and Patient 2 below.

Figure 1 accompanying this announcement is available at https://www.globenewswire.com/NewsRoom/AttachmentNg/35581299-d683-44b0-a75e-7a1a9609eb

CLIMB-121 Trial in Severe Sickle Cell Disease Updated Results
Data presented today at EHA reflect longer-duration follow-up data for the first patient with SCD treated with CTX001. CRISPR Therapeutics and Vertex announced initial data for this first SCD patient in November of 2019.

Patient 1 with SCD experienced seven vaso-occlusive crises (VOCs) and five packed red blood cell transfusions per year (annualized rate during the two years prior to consenting for the trial) before enrolling in the clinical trial. As previously reported, the patient achieved neutrophil engraftment 33 days after CTX001 infusion and platelet engraftment 37 days after infusion. After CTX001 infusion, two SAEs occurred, neither of which the PI considered related to CTX001: pneumonia and neutropenia in the presence of neutropenia, cholelithiasis and abdominal pain; all subsequently resolved. New data presented today show that at 9 months after CTX001 infusion, the patient was free of VOCs, was transfusion independent and had total hemoglobin levels of 11.8 g/dL, 46.1% fetal hemoglobin, and F-cells (erythrocytes expressing fetal hemoglobin) of 100.0%. Bone marrow allelic editing was 81.4% at 6 months. Figure 2 presents the hemoglobin data over time for this patient.

Figure 2 accompanying this announcement is available at https://www.globenewswire.com/NewsRoom/AttachmentNg/7610c5bd-25d1-4f5b-be86-8bc16ed57eb

"With these new data, we are beginning to see early evidence of the potential durability of benefit from treatment with CTX001, as well as consistency of the therapeutic effect across patients," said Samarth Kulkarni, Ph.D., Chief Executive Officer of CRISPR Therapeutics. "These highly encouraging early data represent one more step toward delivering on the promise and potential of CRISPR/Cas9 therapies as a new class of potentially transformative medicines to treat serious diseases."

https://www.globenewswire.com/NewsRoom/AttachmentNg/7610c5bd-25d1-4f5b-be86-8bc16ed57eb
CRISPR gene-edited therapy that is being evaluated for patients suffering from TDT or severe SCD in which a proprietary CRISPR/Cas9 platform. CRISPR/Cas9 is a revolutionary gene editing technology that allows for precise, directed changes to genomic DNA. CRISPR Therapeutics has established a portfolio of therapeutic programs across a broad range of disease areas including hemoglobinopathies, oncology, regenerative medicine and rare diseases. To accelerate and expand its efforts, CRISPR Therapeutics has established strategic collaborations with leading companies including Bayer, Vertex Pharmaceuticals and ViaCyte, Inc. CRISPR Therapeutics AG is headquartered in Zug, Switzerland, with its wholly-owned U.S. subsidiary, CRISPR Therapeutics, Inc., and R&D operations based in Cambridge, Massachusetts, and business offices in San Francisco, California and London, United Kingdom. For more information, please visit www.crisprtx.com.

CRISPR Therapeutics Forward-Looking Statement
This press release may contain a number of “forward-looking statements” within the meaning of the Private Securities Litigation Reform Act of 1995,
as amended, including statements made by Dr. Kulkarni, Dr. Kewalramani and Dr. Frangoul in this press release, as well as statements regarding CRISPR Therapeutics’ expectations about any or all of the following: (i) the status of clinical trials (including, without limitation, the expected timing of data releases and activities at clinical trial sites) related to product candidates under development by CRISPR Therapeutics and its collaborators, including expectations regarding the data that is being presented at the European Hematology Association’s virtual congress; (ii) the expected benefits of CRISPR Therapeutics’ collaborations; and (iii) the therapeutic value, development, and commercial potential of CRISPR/Cas9 gene editing technologies and therapies. Without limiting the foregoing, the words “believes,” “anticipates,” “plans,” “expects” and similar expressions are intended to identify forward-looking statements. You are cautioned that forward-looking statements are inherently uncertain. Although CRISPR Therapeutics believes that such statements are based on reasonable assumptions within the bounds of its knowledge of its business and operations, forward-looking statements are neither promises nor guarantees and they are necessarily subject to a high degree of uncertainty and risk. Actual performance and results may differ materially from those projected or suggested in the forward-looking statements due to various risks and uncertainties. These risks and uncertainties include, among others: potential impacts due to the coronavirus pandemic, such as the timing and progress of clinical trials; the potential for initial and preliminary data from any clinical trial and initial data from a limited number of patients (as is the case with CTX001 at this time) not to be indicative of final trial results; the potential that CTX001 clinical trial results may not be favorable; that future competitive or other market factors may adversely affect the commercial potential for CTX001; uncertainties regarding the intellectual property protection for CRISPR Therapeutics’ technology and intellectual property belonging to third parties, and the outcome of proceedings (such as an interference, an opposition or a similar proceeding) involving all or any portion of such intellectual property; and those risks and uncertainties described under the heading “Risk Factors” in CRISPR Therapeutics’ most recent annual report on Form 10-K, and in any other subsequent filings made by CRISPR Therapeutics with the U.S. Securities and Exchange Commission, which are available on the SEC’s website at www.sec.gov. Existing and prospective investors are cautioned not to place undue reliance on these forward-looking statements, which speak only as of the date they are made. CRISPR Therapeutics disclaims any obligation or undertaking to update or revise any forward-looking statements contained in this press release, other than to the extent required by law.

About Vertex
Vertex is a global biotechnology company that invests in scientific innovation to create transformative medicines for people with serious diseases. The company has multiple approved medicines that treat the underlying cause of cystic fibrosis (CF) — a rare, life-threatening genetic disease — and has several ongoing clinical and research programs in CF. Beyond CF, Vertex has a robust pipeline of investigational small molecule medicines in other serious diseases where it has deep insight into causal human biology, including pain, alpha-1 antitrypsin deficiency and APOL1-mediated kidney diseases. In addition, Vertex has a rapidly expanding pipeline of genetic and cell therapies for diseases such as sickle cell disease, beta thalassemia, Duchenne muscular dystrophy and type 1 diabetes mellitus.

Founded in 1989 in Cambridge, Mass., Vertex's global headquarters is now located in Boston's Innovation District and its international headquarters is in London, UK. Additionally, the company has research and development sites and commercial offices in North America, Europe, Australia and Latin America. Vertex is consistently recognized as one of the industry's top places to work, including 10 consecutive years on Science magazine's Top Employers list and top five on the 2019 Best Employers for Diversity list by Forbes. For company updates and to learn more about Vertex's history of innovation, visit www.vrtx.com or follow us on Facebook, Twitter, LinkedIn, YouTube and Instagram.

Vertex 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, without limitation, statements made by Dr. Kulkarni, Dr. Kewalramani and Dr. Frangoul in this press release, and statements regarding our plans and expectations for our clinical trials and clinical trial sites, and our expectations regarding future data announcements. While Vertex believes the forward-looking statements contained in this press release are accurate, these forward-looking statements represent the company’s beliefs only as of the date of this press release and there are a number of risks and uncertainties that could cause actual events or results to differ materially from those expressed or implied by such forward-looking statements. Those risks and uncertainties include, among other things, that data from the company’s development programs may not support registration or further development of its compounds due to safety, efficacy or other reasons, and other risks listed under Risk Factors in Vertex’s annual report and subsequent 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.

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