Vertex and CRISPR Therapeutics Announce Acceptance of Late-Breaking Abstract for CTX001™ at the 2022 Annual European Hematology Association (EHA) Congress

June 2, 2022

- Vertex announces three additional abstracts on the burden of beta thalassemia and sickle cell disease accepted for poster presentation –

BOSTON & ZUG, Switzerland & CAMBRIDGE, Mass.--(BUSINESS WIRE)--Jun. 2, 2022-- Vertex Pharmaceuticals Incorporated (Nasdaq: VRTX) and CRISPR Therapeutics (NASDAQ: CRSP) today announced new late-breaking clinical data accepted for oral presentation at the 2022 European Hematology Association (EHA) Congress. Vertex also announced three abstracts accepted for poster presentation at EHA.

Late-breaking abstract #LB2367 entitled "Efficacy and Safety of A Single Dose of CTX001 For Transfusion-Dependent Beta-Thalassemia and Severe Sickle Cell Disease," will be an oral presentation on Sunday, June 12 at 09:45-11:15 CEST. The abstract from Vertex and CRISPR Therapeutics includes data on patients treated in CLIMB-111 and CLIMB-121 and followed in CLIMB-131 with CTX001, now known as exagamglogene autotemcel (exa-cel). This abstract has been selected for the media briefing program and is therefore embargoed until Saturday, June 11 at 09:00 am CEST.

In addition, three real-world evidence and health economics abstracts from Vertex have been accepted for poster presentation.

1. Abstract #P1704 entitled "Projected Lifetime Economic Burden of Severe Sickle Cell Disease in the United States," will be a poster presentation on Friday, June 10 at 16:30-17:45 CEST. The abstract posted online projects the per-patient lifetime direct health care cost of severe sickle cell disease (SCD) from a U.S. health care payer perspective using an economic model developed based on published model frameworks.

2. Abstract #P1703 entitled "Economic Burden of Transfusion -Dependent Beta-Thalassemia in the United States," will be a poster presentation on Friday, June 10 at 16:30-17:45 CEST. The abstract posted online estimates the economic burden of transfusion-dependent beta thalassemia (TDT) using administrative claims data to estimate the costs and health care utilization associated with disease management in the U.S.

3. Abstract #P1482 entitled "Patients With Severe Sickle Cell Disease on Standard-of-Care Treatment Are Very Unlikely to Become VOC-Free for One Year: A Cohort Study of Medicaid Enrollees," will be a poster presentation on Friday, June 10 at 16:30-17:45 CEST. The abstract posted online contextualizes the efficacy of exa-cel in eliminating vaso-occlusive crises (VOCs) in patients with SCD using nationwide U.S. Medicaid claims data from 2000 to 2014 to assess the proportion of patients with recurrent VOCs who became VOC-free during a 1-year follow up on standard of care.

The accepted abstracts are now available online on the EHA website.

Exa-cel is being investigated in multiple ongoing clinical trials as a potential one-time therapy for patients with either TDT or SCD.

About exagamglogene autotemcel (exa-cel)

Exa-cel, formerly known as CTX001, is an investigational, autologous, *ex vivo* CRISPR/Cas9 gene-edited therapy that is being evaluated for patients with TDT or SCD characterized by recurrent VOCs, in which a patient's own hematopoietic stem cells are edited to produce high levels of fetal hemoglobin (HbF; hemoglobin F) in red blood cells. HbF is the form of the oxygen-carrying hemoglobin that is naturally present during fetal development, which then switches to the adult form of hemoglobin after birth. The elevation of HbF by exa-cel has the potential to alleviate transfusion requirements for patients with TDT and reduce painful and debilitating sickle crises for patients with SCD. Earlier results from these ongoing trials were published in *The New England Journal of Medicine* in January of 2021.

Based on progress in this program to date, exa-cel has been granted Regenerative Medicine Advanced Therapy (RMAT), Fast Track, Orphan Drug, and Rare Pediatric Disease designations from the U.S. Food and Drug Administration (FDA) for both TDT and SCD. Exa-cel has also been granted Orphan Drug Designation from the European Commission, as well as Priority Medicines (PRIME) designation from the European Medicines Agency (EMA), for both TDT and SCD.

Among gene-editing approaches being evaluated for TDT and SCD, exa-cel is the furthest advanced in clinical development.

About CLIMB-111 and CLIMB-121

The ongoing Phase 1/2/3 open-label trials, CLIMB-111 and CLIMB-121, are designed to assess the safety and efficacy of a single dose of exa-cel in patients ages 12 to 35 years with TDT or with SCD, characterized by recurrent VOCs, respectively. The trials are now closed for enrollment. Patients will be followed for approximately two years after exa-cel infusion. Each patient will be asked to participate in CLIMB-131, a long-term follow-up trial.

About CLIMB-131

This is a long-term, open-label trial to evaluate the safety and efficacy of exa-cel in patients who received exa-cel in CLIMB-111, CLIMB-121,

CLIMB-141 or CLIMB-151. The trial is designed to follow participants for up to 15 years after exa-cel infusion.

About CLIMB-141 and CLIMB-151

The ongoing Phase 3 open-label trials, CLIMB-141 and CLIMB-151, are designed to assess the safety and efficacy of a single dose of exa-cel in patients ages 2 to 11 years with TDT or with SCD, characterized by recurrent VOCs, respectively. The trials are now open for enrollment and currently enrolling patients ages 5 to 11 years of age and will plan to extend to ages 2 to less than 5 years of age at a later date. Each trial will enroll up to 12 patients. Patients will be followed for approximately two years after infusion. Each patient will be asked to participate in CLIMB-131, a long-term follow-up trial.

About the Gene-Editing Process in These Trials

Patients who enroll in these trials will have their own hematopoietic stem and progenitor cells collected from peripheral blood. The patient's cells will be edited using the CRISPR/Cas9 technology. The edited cells, exa-cel, will then be infused back into the patient as part of an autologous hematopoietic stem cell transplant (HSCT), a process which involves a patient being treated with myeloablative busulfan conditioning. Patients undergoing HSCT may also encounter side effects (ranging from mild to severe) that are unrelated to the administration of exa-cel. Patients will initially be monitored to determine when the edited cells begin to produce mature blood cells, a process known as engraftment. After engraftment, patients will continue to be monitored to track the impact of exa-cel on multiple measures of disease and for safety.

About the Vertex-CRISPR Collaboration

Vertex and CRISPR Therapeutics entered into a strategic research collaboration in 2015 focused on the use of CRISPR/Cas9 to discover and develop potential new treatments aimed at the underlying genetic causes of human disease. Exa-cel represents the first potential treatment to emerge from the joint research program. Under an amended collaboration agreement, Vertex now leads global development, manufacturing and commercialization of exa-cel and splits program costs and profits worldwide 60/40 with CRISPR Therapeutics.

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, cell and genetic therapies in other serious diseases where it has deep insight into causal human biology, including sickle cell disease, beta thalassemia, APOL1-mediated kidney disease, pain, type 1 diabetes, alpha-1 antitrypsin deficiency and Duchenne muscular dystrophy.

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. 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 12 consecutive years on Science magazine's Top Employers list and one of the 2021 Seramount (formerly Working Mother Media) 100 Best Companies. 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.

(VRTX-GEN)

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, as amended, including, without limitation, our plans and expectations to present clinical data from the ongoing exa-cel clinical trials during the EHA Congress, expectations regarding the abstracts that will be made available on the virtual platform and the clinical data that will be presented during the EHA Congress, including anticipated projections and estimates related to the various economic impacts of SCD and TDT, the potential benefits, efficacy, and safety of exa-cel, including the potentially transformative nature of the therapy and the potential of the treatment for patients, our plans and expectations for our clinical trials and pipeline products, the status of our clinical trials of our product candidates under development by us and our collaborators, including activities at the clinical trial sites, patient enrollment and expectations regarding clinical trial follow-up. 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 a limited number of patients may not be indicative of final clinical trial results, that data from the company's development programs, including its programs with its collaborators, may not support registration or further development of its compounds due to safety and/or efficacy, or other reasons, that internal or external factors that could delay, divert, or change our plans and objectives with respect to our research and development programs, that future competitive or other market factors may adversely affect the commercial potential for exa-cel, and other risks listed under the heading "Risk Factors" in Vertex's most recent annual report and subsequent quarterly reports filed with the Securities and Exchange Commission (SEC) and available through the company's website at www.vrtx.com and on the SEC's website at www.sec.gov. You should not place undue reliance on these statements or the scientific data presented. Vertex disclaims any obligation to update the information contained in this press release as new information becomes available.

(CRSP-GEN)

About CRISPR Therapeutics

CRISPR Therapeutics is a leading gene editing company focused on developing transformative gene-based medicines for serious diseases using its 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, as well as statements regarding CRISPR Therapeutics' expectations about any or all of the following: i) the safety, efficacy and clinical progress of the ongoing exa-cel clinical trials, including expectations regarding the abstract that will be made available on the virtual platform and our plans to present and the clinical data that are being presented during the EHA Congress; and (ii) 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, existing and prospective investors are cautioned that forward-looking statements are inherently uncertain, are neither promises nor guarantees and not to place undue reliance on such statements, which speak only as of the date they are made. 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: 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 exa-cel at this time) not to be indicative of final or future trial results; the potential that the exa-cel clinical trial results may not be favorable or may not support registration or further development; that future competitive or other market factors may adversely affect the commercial potential for exa-cel; CRISPR Therapeutics may not realize the potential benefits of its collaboration with Vertex; potential impacts due to the coronavirus pandemic, such as to the timing and progress of clinical trials; uncertainties regarding the intellectual property protection for CRISPR Therapeutics' technology and intellectual property belonging to third parties; and those risks and uncertainties described under the heading "Risk Factors" in CRISPR Therapeutics' most recent annual report on Form 10-K, quarterly report on Form 10-Q, 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. 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.

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