Keros Therapeutics Presents Results from Preclinical Studies of KER-050 and ALK2 Inhibitors at the European School of Haematology (ESH) 2nd Translational Research E-Conference

March 5, 2021 1:00 PM EST

LEXINGTON, Mass., March 05, 2021 (GLOBE NEWSWIRE) -- Keros Therapeutics, Inc. (“Keros” or the “Company”) (Nasdaq: KROS), a clinical-stage biopharmaceutical company focused on the discovery, development and commercialization of novel treatments for patients suffering from hematological and musculoskeletal disorders with high unmet medical need, today announced results from preclinical studies of KER-050 and the Company’s ALK2 inhibitor program at the virtual European School of Haematology (ESH) 2 nd Translational Research E-Conference held March 5 through 7, 2021.

“We are pleased to present preclinical data from our hematology programs at the ESH Translational Research E-Conference. Data from multiple in vivo disease models continue to support the positive observations in our Phase 1 clinical trials,” said Jasbir S. Seehra, Ph.D., President and Chief Executive Officer of Keros. “For KER-050, these data support the observations from our Phase 1 clinical trial in healthy volunteers of a rapid hematological response, which we believe is indicative of effects on terminal differentiation, and a durable response, which we believe is indicative of effects on early precursors. We believe the ability to target multiple stages of erythropoiesis makes KER-050 a potential therapeutic candidate for diseases that cause anemia due to ineffective erythropoiesis, including myelodysplastic syndrome and myelofibrosis. Additionally, data from multiple anemia models recapitulated the increases in serum iron and decreases in serum hepcidin observed in our Phase 1 clinical trial of KER-047 in healthy volunteers, further highlighting the potential therapeutic benefit of ALK2 inhibition in hepcidin-mediated anemia.”

KER-050, a Novel Inhibitor of TGF-β Superfamily Signaling, Induces Red Blood Cell Production by Promoting Multiple Stages of Erythroid Differentiation

Keros has previously shown that mice treated with a single 10 mg/kg dose of a research form of KER-050 (“RKER-050”), a novel inhibitor of Transforming Growth Factor-Beta superfamily signaling, had increased red blood cells (“RBCs”, +7%), hemoglobin (“HGB”, +6.7%) and reticulocytes (“RET”, +20%) as soon as 12 hours after administration compared to vehicle-treated mice. Keros also observed increases in colony forming unit-erythroid progenitors as soon as Day 2, consistent with an effect on early stages of erythropoiesis, followed by changes in polychromatophilic/early orthochromatic erythroid precursors as soon as Day 4 and late orthochromatic erythroblasts/reticulocytes by Day 7, which is consistent with progression of cells through erythropoiesis.

A single dose of RKER-050 increased RBCs and HGB through at least Day 51 (+8.5% and +3%, respectively). Concurrently, despite increased erythropoiesis, erythropoietin levels were greater than two-fold higher than controls, starting at Day 4, continuing through Day 37 and returning to baseline by Day 51.

Keros believes that these results suggest that RKER-050 potentially elicits the combined effects of stimulating terminal maturation of late-stage erythroid precursors to rapidly increase RBCs and potentially mobilizes a prolonged supply of progenitors through expansion of early-stage precursor populations that allows for sustained upregulation of erythropoiesis.

Targeted ALK2 Inhibition as a Therapeutic Approach to Reducing Hepcidin and Elevating Serum Iron

Hepcidin is an endocrine regulator of iron metabolism that, when elevated, can decrease levels of iron available for erythropoiesis, resulting in anemia. Keros believes that ALK2 signaling is an integral part of hepcidin-mediated iron mobilization and has previously used an siRNA-based model of iron-refractory iron deficiency anemia (“IRIDA”) to demonstrate that administration of either KTI-2338, a small molecule ALK2 kinase inhibitor, or KTI-A2.0MAb, a novel neutralizing ALK2 antibody, in mice can decrease serum hepcidin, resulting in an increase in HGB, hematocrit and serum iron compared to control cohorts receiving vehicle.

These results have been further explored using a mouse model of anemia of inflammation via induced chronic kidney disease. In this preclinical study, mice were dosed daily for six weeks with 50 mg/kg of adenine to induce kidney damage, and developed inflammation-mediated anemia, with corresponding elevated levels of hepcidin and decreased serum iron. Thereafter, mice continued to receive either vehicle or adenine daily, but also received treatment of either vehicle or 5 mg/kg KTI-2338 daily for 10 days.

At study termination, mice receiving adenine in combination KTI-2338 had serum iron values 108.2% higher than the vehicle-treated mice receiving adenine and vehicle. Additionally, serum hepcidin was decreased by 85.4% over vehicle-treated mice. These data substantiate the role of ALK2 signaling in anemia arising from high hepcidin and illustrate the potential therapeutic benefit of specific ALK2 inhibition in these diseases, including anemia of inflammation.

About Keros Therapeutics, Inc.

Keros is a clinical-stage biopharmaceutical company focused on the discovery, development and commercialization of novel treatments for patients suffering from hematologic and musculoskeletal disorders with high unmet medical need. Keros is a leader in understanding the role of the Transforming Growth Factor-Beta family of proteins, which are master regulators of red blood cell and platelet production as well as of the growth, repair and maintenance of muscle and bone. Keros’ lead protein therapeutic product candidate, KER-050, is being developed for the treatment of low blood cell counts, or cytopenias, including anemia and thrombocytopenia, in patients with myelodysplastic syndromes and in patients with myelofibrosis. Keros’ lead small molecule product candidate, KER-047, is being developed for the treatment of anemia resulting from iron imbalance, as well as for the treatment of fibrodysplasia ossificans progressiva. Keros’ third product candidate, KER-012, is being developed for the treatment of disorders associated with bone loss, such as osteoporosis and osteogenesis imperfecta, and for the treatment of pulmonary arterial hypertension.

Cautionary Note Regarding Forward-Looking Statements

Statements contained in this press release regarding matters that are not historical facts are “forward-looking statements” within the meaning of the Private Securities Litigation Reform Act of 1995, as amended. Words such as "anticipates," "believes," "expects," "intends," “plans,” “potential,”

"projects," “would” and "future" or similar expressions are intended to identify forward-looking statements. Examples of these forward-looking statements include statements concerning: the potential of KER-050 to treat diseases that cause anemia due to ineffective erythropoiesis, including myelodysplastic syndrome and myelofibrosis; the potential of ALK2 inhibition to treat hepcidin-mediated anemias, including anemia of inflammation; and the potential of RKER-050 to stimulate both terminal maturation of late-stage erythroid precursors and expansion of early-stage precursor populations. Because such statements are subject to risks and uncertainties, actual results may differ materially from those expressed or implied by such forward-looking statements. These risks and uncertainties include, among others: Keros' limited operating history and historical losses; Keros' ability to raise additional funding to complete the development and any commercialization of its product candidates; Keros' dependence on the success of its lead product candidates, KER-050 and KER-047; that Keros may be delayed in initiating, enrolling or completing any clinical trials; competition from third parties that are developing products for similar uses; Keros' ability to obtain, maintain and protect its intellectual property; Keros' dependence on third parties in connection with manufacturing, clinical trials and pre-clinical studies; and risks relating to the impact on our business of the COVID-19 pandemic or similar public health crises.

These and other risks are described more fully in Keros' filings with the Securities and Exchange Commission (“SEC”), including the “Risk Factors” section of the Company's Quarterly Report on Form 10-Q, filed with the SEC on November 10, 2020, and its other documents subsequently filed with or furnished to the SEC. All forward-looking statements contained in this press release speak only as of the date on which they were made. Except to the extent required by law, Keros undertakes no obligation to update such statements to reflect events that occur or circumstances that exist after the date on which they were made.

Investor Contact:

Julia Balanova
jbalanova@soleburytrout.com
646-378-2936