HUMANIGEN STUDY OF GM-CSF NEUTRALIZATION WITH CAR-T THERAPY ACCEPTED AS ORAL PRESENTATION AT THE 2019 TRANSPLANTATION & CELLULAR THERAPY (TCT) ANNUAL MEETING

- *First ever demonstration that the spectrum of toxicities seen in CAR-T clinical trials can be effectively prevented in vivo*
- *Enhanced anti-tumor activity, improved overall survival, and improved durability of response with a reduced rate of relapse observed with GM-CSF neutralization*
- *Lenzilumab (an anti-GM-CSF monoclonal antibody) used in combination with CAR-T therapy prevents the onset of cytokine release syndrome and significantly reduces neuroinflammation may prevent impairment of the blood-brain barrier and significantly reduce the neuroinflammation caused by CAR-T*
- *GM-CSF neutralization with lenzilumab is a next generation strategy to improve efficacy, safety and durability of CAR-T therapy*

Burlingame, CA, February 25, 2019 – Humanigen, Inc., **(HGEN)** ("Humanigen") a biopharmaceutical company focused on the development of its proprietary Humaneered® monoclonal antibodies focused on chimeric antigen receptor T (CAR-T) cell therapy optimization and immuno-oncology, announced that at 4:15pm CST on Friday February 22nd, Rosalie Sterner, on behalf of Dr. Saad Kenderian and the research team at Mayo Clinic, Rochester, MN, presented final results from the study entitled "GM-CSF Blockade during Chimeric Antigen Receptor T-cell (CART) Therapy Reduces Cytokine Release Syndrome and Neurotoxicity and may Enhance CART Effector Function" at the 2019 Transplantation & Cellular Therapy (TCT) annual meeting in Houston, Texas. The study was conducted using lenzilumab, the company's proprietary Humaneered® anti-GM-CSF monoclonal antibody, and was recently featured on the front cover of the February 14, 2019 edition of 'blood'®, the official journal of the American Society of Hematology, available online at www.bloodjournal.org/content/133/7/697 .

The study was designed to closely replicate the findings seen in CAR-T clinical trials and utilized human acute lymphoblastic leukemia (ALL), human CD19 targeted CAR-T (CART19), and human peripheral blood mononuclear cells (PBMCs) and conducted in mice. Within 4-6 days after treatment with CART19, a syndrome consistent with neuro-inflammation (NI) and cytokine release syndrome (CRS) was observed. NI was assessed by brain MRI analyses which revealed abnormal T1 hyperintensities indicative of neuroinflammation, blood-brain-barrier disruption and brain edema. This syndrome was associated with elevation of cytokines in the serum 4-11 days post-treatment, similar to that seen with CRS in CAR-T trials.

The prophylactic administration of lenzilumab in combination with CART19 therapy resulted in a 75% reduction in NI by quantitative MRI coupled with an exponential increase in CART19 cell proliferation and significant improvement in leukemic disease control sustained over time for at least 35 days post CART19 infusion compared to CART19 plus control. This suggests that GM-CSF neutralization may play a role in reducing relapses and increasing durable complete responses after CART19 therapy. This is a significant finding, given that more than 50% of adult lymphoma patients who initially respond to CART19 therapy subsequently relapse within the first year of follow-up.

CAR-T induced NI and CRS are associated with extended hospitalization and ICU admissions, creating an added pharmaco-economic burden that may lead to unfavorable reimbursement, limiting the utility and market adoption of CAR-T therapy. "GM-CSF neutralization with lenzilumab can be viewed as a potential next-generation strategy to improve the efficacy, safety, and cost-effectiveness of CAR-T therapy while enabling routine outpatient administration" stated Dr. Cameron Durrant, CEO of Humanigen. Multi-center phase Ib/II clinical trials of lenzilumab in combination with CART19 therapies are expected to be initiated in the coming months.

About Humanigen, Inc.

Humanigen, Inc. is developing its portfolio of Humaneered® monoclonal antibodies to address cutting-edge CAR-T optimization and the need for new oncology drugs that provide safer, better, and more effective cancer therapies. Derived from the company's Humaneered® platform, lenzilumab, ifabotuzumab, and HGEN005 are monoclonal antibodies with first-in-class mechanisms. Lenzilumab, which neutralizes human GM-CSF, is in development as a potential biologic therapy to make CAR-T therapy safer and more effective, as well as a potential treatment for hematologic cancers. Ifabotuzumab, which targets the Eph type-A receptor 3 (EphA3), is being explored as a potential treatment for glioblastoma multiforme (GBM) and a range of solid tumors, both as an optimized naked antibody and as part of an antibody-drug conjugate, as well as a backbone for a novel CAR-T construct, and a bispecific antibody platform. HGEN005 which selectively targets the eosinophil receptor EMR1 is being explored as a potential treatment for a range of eosinophilic diseases including eosinophilic leukemia both as an optizimized naked antibody and as the backbone for a novel CAR-T construct. For more information, visit www.humanigen.com

Forward-Looking Statements

This release contains forward-looking statements. Forward-looking statements reflect management's current knowledge, assumptions, judgment and expectations regarding future performance or events. Although management believes that the expectations reflected in such statements are reasonable, they give no assurance that such expectations will prove to be correct and you should be aware that actual events or results may differ materially from those contained in the forward-looking statements. Words such as "will," "expect," "intend," "plan," "potential," "possible," "goals," "accelerate," "continue," and similar expressions identify forward-looking statements, including, without limitation, statements regarding our expectations for future development of lenzilumab to help CAR-T therapy reach its full potential. Forward-looking statements are subject to a number of risks and uncertainties including, but not limited to, the risks inherent in Black Horse Capital and its affiliates owning more than 50% of our outstanding common stock, including their ability to control the company; our lack of profitability and need for additional capital to operate our business as a going concern; the uncertainties inherent in the development and launch of any new pharmaceutical product; the outcome of pending or future litigation; and the various risks and uncertainties described in the "Risk Factors" sections and elsewhere in the Company's periodic and other filings with the Securities and Exchange Commission.

All forward-looking statements are expressly qualified in their entirety by this cautionary notice. You should not place undue reliance on any forward-looking statements, which speak only as of the date of this release. We undertake no obligation to revise or update any forward-looking statements made in this press release to reflect events or circumstances after the date hereof or to reflect new information or the occurrence of unanticipated events, except as required by law.

CONTACT:

Investors:
Al Palombo
650-243-3181
ir@humanigen.com

Media:
media@humanigen.com