Evelo Biosciences Presents New Preclinical Data for Extracellular Vesicle Anti-inflammatory Product Candidate EDP2939 at the American Association of Immunologists Meeting

May 13, 2021

–On-track to initiate clinical development of EDP2939 in 2022–

CAMBRIDGE, Mass., May 13, 2021 (GLOBE NEWSWIRE) -- Evelo Biosciences, Inc. (Nasdaq:EVLO), a clinical stage biotechnology company developing a new modality of orally delivered medicines, today presented preclinical data for its extracellular vesicle (EV) product candidate, EDP2939, for the treatment of inflammatory diseases, at Virtual IMMUNOLOGY2021, the 104th Annual Meeting of the American Association of Immunologists (AAI). The poster presentation showed that EDP2939, which is gut-restricted after oral administration, gave broad-based resolution of inflammation in preclinical mouse models, with no apparent safety or tolerability concerns.

“Evelo has demonstrated preclinically and clinically the therapeutic potential of products that engage the small intestinal axis, SINTAX™,” said Mark Bodmer, Ph.D., Chief Scientific Officer of Evelo. “Our research and development teams continue to explore ways to optimize our product candidates through new forms and formulations, including our preclinical work with oral EVs. We are pleased to share new data for our first anti-inflammatory EV product candidate, EDP2939, which demonstrated potent systemic anti-inflammatory activity after oral administration in mouse models. These results support the potential of EVs as the next generation of Evelo’s SINTAX medicines and a foundation for our next phase of growth. We look forward to initiating the clinical development of EDP2939 in 2022.”

EDP2939: Orally Delivered EV for Inflammatory Diseases
In the preclinical study presented at AAI, mice undergoing a delayed-type hypersensitivity (DTH) reaction against keyhole limpet hemagglutinin (KLH) were treated with EDP2939, EDP2939 in combination with different antibodies, or with placebo. These data suggest that EDP2939 requires the stimulation of both the TLR2 receptor and the IL-10 receptor, in addition to lymphocyte homing to the intestinal lymphoid tissue. Also, in-vitro, EDP2939 induces TLR2-dependent release of IL-10. Fluorescent biodistribution analysis showed that EDP2939 was not detected outside the gastrointestinal tract. The data suggest that treatment with EDP2939 resulted in broad-based resolution of inflammation and the establishment of immune homeostasis, with no apparent adverse safety or tolerability effects preclinically, providing key insights into the pharmacologic effects, mechanism of action, and biodistribution of EDP2939.

EDP2939 is now in preclinical development for the treatment of inflammatory diseases; initiation of clinical development is anticipated in 2022.

About Extracellular Vesicles
Some bacteria produce EVs that share molecular content with the parent bacterium, in particles that are roughly one-one thousandth the volume and are not capable of self-replicating. EVs enable bacterial communication and survival during stress, host-immune modulation, material exchange and cell-cell interactions. The significantly smaller size of EVs compared to microbes enables improved distribution and target engagement.

About EDP2939
EDP2939 is an investigational orally delivered and gut-restricted bacterial extracellular vesicle being developed for the treatment of inflammatory diseases. It is derived from a single gram-negative bacterial strain of *Prevotellaceae*, selected for its anti-inflammatory pharmacological properties. Preclinically, EDP2939 had anti-inflammatory activity in murine models of Th1 and Th17 inflammation.

About Evelo Biosciences
Evelo Biosciences is a clinical stage biotechnology company developing orally delivered medicines that act on SINTAX™, the small intestinal axis, to have systemic therapeutic effects. SINTAX plays a central role in governing the immune, metabolic, and neurological systems.

Evelo currently has four product candidates in development: EDP1815, EDP1867, and EDP2939 for the treatment of inflammatory diseases and EDP1908 for the treatment of cancer. Evelo is advancing additional product candidates in other disease areas.

For more information, please visit www.evelobio.com and engage with Evelo on LinkedIn.

Forward Looking Statements
This press release contains forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. All statements contained in this press release that do not relate to matters of historical fact should be considered forward-looking statements, including statements concerning the development of EDP2939, the promise and potential impact of EDP2939, and the timing of and plans for clinical trials of EDP2939.

These forward-looking statements are based on management's current expectations. These statements are neither promises nor guarantees, but involve known and unknown risks, uncertainties and other important factors that may cause our actual results, performance or achievements to be materially different from any future results, performance or achievements expressed or implied by the forward-looking statements, including, but not limited to, the following: *the impact of the COVID-19 pandemic on our operations, including our preclinical studies and clinical trials, and the continuity of our business*; *we have incurred significant losses, are not currently profitable and may never become profitable; our need for additional funding; our limited operating history; our unproven approach to therapeutic intervention; the lengthy, expensive, and uncertain process of clinical drug development, including potential delays in regulatory approval; our reliance on third parties and collaborators to expand our microbial library, conduct our clinical trials, manufacture our product candidates, and develop and commercialize our product candidates, if approved; our lack of experience in manufacturing, selling, marketing, and distributing our product candidates; failure to compete successfully against other drug companies; protection of our proprietary technology and the confidentiality of our trade secrets; potential lawsuits for, or claims of, infringement of third-party intellectual property or challenges to the ownership of our intellectual property; our patents being found invalid or unenforceable; risks associated with international operations; our ability to retain key personnel and to manage our growth; the potential volatility of our common stock; our management and principal stockholders have the ability to control or significantly influence our business; costs and resources of operating as a public company; unfavorable or no analyst research or reports; and securities class action litigation against us.*

These and other important factors discussed under the caption "Risk Factors" in our Quarterly Report on Form 10-Q for the three months ended March 31, 2021 and our other reports filed with the SEC could cause actual results to differ materially from those indicated by the forward-looking statements made in this press release. Any such forward-looking statements represent management's estimates as of the date of this press release. While we

may elect to update such forward-looking statements at some point in the future, except as required by law, we disclaim any obligation to do so, even if subsequent events cause our views to change. These forward-looking statements should not be relied upon as representing our views as of any date subsequent to the date of this press release.

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