New Preclinical Data Highlighting Eleven Biotherapeutics' DeBouganin Program to be Presented at 2018 AACR Annual Meeting

April 12, 2018

CAMBRIDGE, Mass.--(BUSINESS WIRE)--Apr. 12, 2018-- Eleven Biotherapeutics, Inc. (NASDAQ: EBIO), a late-stage clinical company developing next-generation antibody-drug conjugate (ADC) therapies for the treatment of cancer, today announced that preclinical data from the company's novel, next-generation ADC program using an innovative deBouganin cytotoxic protein payload will be presented during two poster sessions at the 2018 American Association for Cancer Research Annual Meeting. The meeting is taking place April 14-18, 2018 in Chicago.

"We have uniquely designed our deBouganin payload to address tumor indications that can only be reached through systemic delivery. Our data show that deBouganin exhibits certain advantages over first-generation ADCs, which use more conventional small molecule cytotoxins, with respect to cell killing power, including the ability to kill cancer stem cells, circumvent multi-drug resistance and avoid cross-resistance mechanisms," said Gregory P. Adams, Ph.D., chief scientific officer of Eleven Biotherapeutics. "We are pleased to be presenting these promising data highlighting the potential activity and differentiation of our approach compared to first-generation ADCs."

DeBouganin is a proprietary de-immunized variant of bouganin, a ribosome inactivating protein that when internalized blocks protein synthesis, thereby leading to cell death. Eleven Biotherapeutics will present data from its VB6-845d program, a next-generation ADC comprised of a Fab fragment specific for the epithelial cell adhesion molecule (EpCAM) genetically linked to deBouganin via a furin protease sensitive peptide. Data being presented suggest that VB6-845d mediates tumor cell killing by an immunogenic cell death (ICD) pathway. The potential cross-priming effect initiated by VB6-845d-induced ICD suggests that VB6-845d in combination with immune checkpoint inhibitors may enhance their effectiveness in EpCAM-positive epithelial cancers.

Poster Title: VB6-845d Tumor Cell Killing Elicits Biologic Features of Immunogenic Cell Death
Date and Time: April 16, 2018 from 1:00 to 5:00 p.m. CT

In addition, in collaboration with Crescendo Biologics, the company will present data demonstrating that a fusion protein comprised of the company's deBouganin payload and Crescendo's Humabody® are expressible as a soluble protein in E. coli supernatant. Crescendo's Humabody products are a novel class of small, robust and potent protein therapeutics based on fully human VH domain building blocks. *In vitro* data support the potential of Humabody-deBouganin fusion constructs as anti-cancer therapeutics.

Poster Title: Engineering and Characterization of Anti-PSMA Humabody-DeBouganin Fusion Proteins

Date and Time: April 18, 2018 from 8:00 a.m. to 12:00 p.m. CT

About Eleven Biotherapeutics
Eleven Biotherapeutics, Inc. is a late-stage clinical company advancing next-generation antibody-drug conjugate therapies for the treatment of cancer based on the company's Targeted Protein Therapeutics platform. The company's lead program, Vicinium™, is currently in a Phase 3 registration trial for the treatment of non-muscle invasive bladder cancer, with topline data expected in mid-2018. Vicinium incorporates a tumor-targeting antibody fragment and a protein cytotoxic payload into a single protein molecule designed to selectively and effectively kill cancer cells while sparing healthy cells. For more information, please visit the company's website at www.elevenbio.com.

Cautionary Note on Forward-Looking Statements
Any statements in this press release about future expectations, plans and prospects for the Company, the Company's strategy, future operations, and other statements containing the words "anticipate," "believe," "estimate," "expect," "intend," "may," "plan," "predict," "project," "target," "potential," "will," "would," "could," "should," "continue," and similar expressions, constitute forward-looking statements within the meaning of The Private Securities Litigation Reform Act of 1995. Actual results may differ materially from those indicated by such forward-looking statements as a result of various important factors, including: the uncertainties inherent in the initiation and conduct of clinical trials, our ability to successfully develop our product candidates and complete our planned clinical programs, our ability to obtain marketing approvals for our product candidates, expectations regarding our ongoing clinical trials, availability and timing of data from clinical trials, whether interim results from a clinical trial will be predictive of the final results of the trial or results of early clinical studies will be indicative of the results of future studies, the adequacy of any clinical models, expectations regarding regulatory approvals and other factors discussed in the "Risk Factors" section of the Company's Annual Report on Form 10-K, Quarterly Reports on Form 10-Q and other reports filed with the Securities and Exchange Commission. In addition, the forward-looking statements included in this press release represent the Company's views as of the date hereof. The Company anticipates that subsequent events and developments will cause the Company's views to change. However, while the Company may elect to update these forward-looking statements at some point in the future, the Company specifically disclaims any obligation to do so. These forward-looking statements should not be relied upon as representing the Company's views as of any date subsequent to the date hereof.

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