September 25, 2017

Assembly Biosciences Selects Next-Generation CpAM Candidate for Advancement into Clinical Development

INDIANAPOLIS, Sept. 25, 2017 (GLOBE NEWSWIRE) -- Assembly Biosciences, Inc. (NASDAQ:ASMB), a clinical-stage biotechnology company advancing a new class of oral therapeutics for the treatment of hepatitis B virus (HBV) infection and novel oral live biotherapeutics for disorders associated with the microbiome, today announced that it has selected a second Core protein Allosteric Modulator (CpAM), ABI-H2158, as a candidate for clinical development and that IND-enabling studies in preparation for initiation of a Phase 1a clinical trial are underway.

Dr. Richard Colonno, Chief Scientific Officer for Assembly's HBV program, who is presenting today at an HBV-focused conference, commented, "Our HBV program aims to increase cure rates by targeting the essential viral Core protein with our direct-acting CpAMs, which have been shown in *in vitro* studies to suppress both viral replication and most importantly, the cccDNA formation associated with viral persistence. In other *in vitro* studies, our next-generation clinical candidate, ABI-H2158, displayed enhanced potency while maintaining the same favorable drug-like (DMPK) characteristics of our first clinical candidate, ABI-H0731."

Assembly's first-generation CpAM, ABI-H0731, completed a Phase 1a study earlier this year and is currently being evaluated in HBV patients in a double blind, placebo-controlled, Phase 1b study. Assembly will present additional data on its CpAM pipeline, including the ABI-H0731 Phase 1a study results, at the Annual Meeting of the American Association for the Study of Liver Diseases (AASLD) in October.

In addition, Dr. Colonno noted, "We are looking forward to discussing more about the characteristics of our next-generation CpAMs at AASLD, as well as new data that may shed light on the biological half-life of cccDNA that could have implications for our therapeutic approach."

*** Discovery on Target: Targeting HBV** - Boston
Date: September 25, 2017
Panel: Targeting HBV Core Protein to Achieve Higher Cure Rates
Presenter: Richard Colonno, PhD., Chief Scientific Officer, HBV Program, Assembly Biosciences

A copy of Dr. Colonno's presentation will be available in the Events and Presentations section of the Company's website later today, at www.assemblybio.com.

About Assembly Biosciences
Assembly Biosciences, Inc. is a clinical-stage public biotechnology company developing two innovative platform programs: an HBV program advancing a new class of oral therapeutics for the treatment of hepatitis B virus (HBV) infection and a microbiome program developing novel oral live biotherapeutics designed to address diseases associated with the microbiome. Assembly's HBV program is advancing multiple drug candidates with the aim of increasing cure rates in patients with chronic HBV. The company's microbiome program consists of a fully integrated platform that includes a robust strain identification and selection process, methods for strain isolation and growth under current Good Manufacturing Practices and a patent-pending delivery system, GEMICEL®, which allows for targeted oral delivery of live biologic and conventional therapies to the lower gastrointestinal tract. Assembly is developing a robust pipeline of product candidates in multiple disease indications. For more information, visit www.assemblybio.com.

Forward-Looking Statement
The information in this press release contains forward-looking statements regarding future events, including statements about the clinical and therapeutic potential of Assembly's development programs. Certain forward-looking statements may be identified by reference to a future period or periods or by use of forward-looking terminology such as "designed" or "developing." Assembly intends such forward-looking statements to be covered by the safe harbor provisions contained in Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended. Actual results or developments may differ materially from those projected or implied in these forward-looking statements. More information about the risks and uncertainties faced by Assembly are more fully detailed under the heading "Risk Factors" in Assembly's Annual Report on Form 10-K for the year ended December 31, 2016, and Quarterly Report on Form 10-Q for the quarter ending June 30, 2017 filed with the Securities and Exchange Commission. Except as required by law, Assembly assumes no obligation to update publicly any forward-looking statements, whether as a result of new

information, future events or otherwise.

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