NEWS RELEASE

Mast Therapeutics Announces Clinical Study Of AIR001 For The Treatment Of Chronic Infection In Cystic Fibrosis Patients

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SAN DIEGO, March 6, 2017 /PRNewswire/ -- **Mast Therapeutics, Inc.** (NYSE MKT: MSTX) today reported that its wholly-owned subsidiary, Aires Pharmaceuticals, Inc., has entered into an agreement with the University of Pittsburgh related to a Phase 1/2 open-label safety and proof of concept clinical trial of the Company's lead product candidate, AIR001, for the treatment of Pseudomonas aeruginosa (P. aeruginosa) infection in cystic fibrosis (CF) patients. The study is being conducted by the University of Pittsburgh and the University of Pittsburgh Medical Center. Mast's subsidiary will provide study drug and nebulizers for the study, but no direct financial support.

"We are excited that CF experts at University of Pittsburgh wish to study the therapeutic potential of AIR001 in this patient population," stated Brian M. Culley, Chief Executive Officer of Mast Therapeutics, Inc. "We believe this initiative opens an entirely new area of potential clinical and commercial opportunity for AIR001 and enjoys synergy with the pipeline of our anticipated reverse merger partner, Savara Inc."

"AIR001 may represent a new therapeutic approach for the treatment of chronic infection in CF patients because it has demonstrated broad in vitro antimicrobial activity against P. aeruginosa and other airway pathogens," stated Edwin L. Parsley, D.O., Chief Medical Officer of Mast Therapeutics, Inc. "The antimicrobial activity of nitrite increases under anaerobic and acidotic conditions such as those found in the CF airways, and in non-clinical studies, AIR001 has been shown to prevent P. aeruginosa biotic biofilm growth on the surface of primary CF airway cells," continued Dr. Parsley.

The objective of the open-label Phase 1/2 study is to determine the safety of AIR001, a sterile, proprietary sodium nitrite solution for intermittent inhalation, administered in a dose escalation manner to adults with CF and P.

aeruginosa airway infection. The study also aims to explore the effects of AIR001 on measures of lung function, exhaled airway nitric oxide, and bacterial density. Under the agreement with the University of Pittsburgh, the Company has rights to use the de-identified data and study results for potential regulatory submissions.

About Cystic Fibrosis

Cystic fibrosis (CF) is a genetic disorder that results in persistent lung infections and permanent and progressive respiratory disability. CF affects mostly the lungs, but also the pancreas, liver, kidneys, and intestines. In the lungs of CF patients, mucus plugs the airways and allows the development of bacterial biofilms, resulting in chronic infection. Such infection leads to bronchiectasis, or damaged airways, obstructive lung disease, and ultimately death from chronic respiratory failure. CF is a rare, or orphan, disease, affecting approximately 30,000 people in the United States according to the Cystic Fibrosis Foundation Patient Registry.

About AIR001

AIR001 is a sodium nitrite solution for intermittent inhalation via nebulization. Nitrite is a direct vasodilator and can be recycled in vivo to form nitric oxide (NO) independent of the classical NO synthase (NOS) pathway. Nitrite mediated NO formation has several beneficial effects, including dilation of blood vessels and reduction of inflammation and undesirable cell growth and has demonstrated encouraging results in Phase 2 clinical trials conducted to date in patients with heart failure with preserved ejection fraction (HFpEF).

In cystic fibrosis (CF), chronic airway infection results in cycles of airway inflammation and bronchiectasis that ultimately lead to early death from respiratory failure. Pseudomonas aeruginosa (P. aeruginosa) is the most common infectious pathogen in CF, and once chronic airway infection is established, P. aeruginosa becomes difficult to eradicate because of resistance mechanisms including bacterial growth in biofilms. The high metabolic activity of P. aeruginosa and with neutrophilic interaction results in biofilm growth that is largely anaerobic and which confers resistance to many antibiotics. Bacteria growing in biotic biofilms can be greater than 100-fold more resistant to antibiotics. In work by Zemke et. al., nitrite prevented 99% of biofilm growth. Notably, nitrite resulted in inhibition of P. aeruginosa growth on primary CF airway cells at concentrations achievable clinically with AIR001. The inhibitory effect of nitrite on bacterial oxygen consumption and biofilm growth did not require nitric oxide (NO) as an intermediate, as chemically scavenging NO did not block growth inhibition. These data suggest an NO-radical independent nitrosative or oxidative inhibition of respiration as the mechanism of action of nitrite on biotic biofilms. Thus AIR001 may provide a novel therapy for chronic P. aeruginosa infection in conditions such as CF and non-CF bronchiectasis.

About Mast Therapeutics

Mast Therapeutics, Inc. is a publicly traded biopharmaceutical company headquartered in San Diego, California. The Company's lead product candidate, AIR001, is a sodium nitrite solution for intermittent inhalation via nebulization in Phase 2 clinical development for the treatment of heart failure with preserved ejection fraction (HFpEF). More information can be found on the Company's web site at **www.masttherapeutics.com**. Mast Therapeutics™ and the corporate logo are trademarks of Mast Therapeutics, Inc.

The Company has entered into a definitive merger agreement with Austin, Texas-based Savara Inc. Under the terms of the agreement, upon the closing of the merger, the operations of the Company and Savara would be combined and the stockholders of Savara would be the majority owners of the combined company. The combined company would focus on the development and commercialization of novel therapies for the treatment of serious or life-threatening rare respiratory diseases. Subject to approval of the Company's and Savara's stockholders and the satisfaction or waiver of other conditions, the merger is expected to close in Q2 2017.

Safe Harbor Statements

Additional Information about the Proposed Merger and Where to Find It

In connection with the proposed merger with Savara, the Company has filed relevant materials with the Securities and Exchange Commission, or the SEC, including a registration statement on Form S-4 that contains a prospectus, proxy statement and information statement. Investors and security holders of the Company are urged to read these materials when the registration statement becomes effective because they contain important information about the Company, Savara and the proposed merger. The proxy statement/prospectus/information statement and other relevant materials, and any other documents filed by the Company with the SEC, may be obtained free of charge at the SEC web site at **www.sec.gov**. In addition, investors and security holders may obtain free copies of the documents filed with the SEC by the Company by directing a written request to: Mast Therapeutics, Inc. 3611 Valley Centre Drive, Suite 500, San Diego, California 92130, Attn: Investor Relations. Investors and security holders are urged to read the proxy statement/prospectus/information statement and the other relevant materials when they become available before making any voting or investment decision with respect to the proposed merger.

This communication shall not constitute an offer to sell or the solicitation of an offer to sell or the solicitation of an offer to buy any securities, nor shall there be any sale of securities in any jurisdiction in which such offer, solicitation or sale would be unlawful prior to registration or qualification under the securities laws of any such jurisdiction. No offering of securities in connection with the proposed merger shall be made except by means of a prospectus meeting the requirements of Section 10 of the Securities Act of 1933, as amended.

Participants in the Solicitation

The Company and its directors and executive officers and Savara and its directors and executive officers may be deemed to be participants in the solicitation of proxies from the stockholders of the Company and Savara in connection with the proposed transaction. Information regarding the special interests of these directors and executive officers in the proposed merger are included in the proxy statement/prospectus/information statement referred to above. These documents are available free of charge at the SEC web site (**www.sec.gov**) and from Investor Relations at the Company at the address described above.

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Forward Looking Statements

The Company cautions you that statements in this press release that are not a description of historical fact are forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. Forward-looking statements may be identified by the use of words referencing future events or circumstances such as "expect," "intend," "plan," "anticipate," "believe," and "will," among others. Such statements include, but are not limited to, statements regarding the structure, timing and completion of the Company's proposed merger with Savara; the Company's expectations regarding the capitalization, resources and ownership structure of the combined organization; the nature, strategy and focus of the combined organization; the safety, efficacy and projected development timeline and commercial potential of any product candidates; and the expectations regarding voting by the Company's and Savara's stockholders. The Company may not actually achieve the proposed merger with Savara, or any plans or product development goals in a timely manner, if at all, or otherwise carry out the intentions or meet the expectations or projections disclosed in the Company's forward-looking statements, and you should not place undue reliance on these forward-looking statements. 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 forward-looking statements are based upon the Company's current expectations and involve assumptions that may never materialize or may prove to be incorrect. Actual results and the timing of events could differ materially from those anticipated in such forward-looking statements as a result of various risks and uncertainties, which include, without limitation, risks and uncertainties associated with stockholder approval of and the ability to consummate the proposed merger through the process being conducted by the Company and

Savara, the ability to project future cash utilization and reserves needed for contingent future liabilities and business operations, the availability of sufficient resources for combined company operations and to conduct or continue planned clinical development programs, the timing and ability of the Company or Savara to raise additional equity capital to fund continued operations; the ability to successfully develop any of the Company's or Savara's product candidates, and the risks associated with the process of developing, obtaining regulatory approval for and commercializing drug candidates that are safe and effective for use as human therapeutics. Risks and uncertainties facing the Company are described more fully in the Company's periodic reports filed with the SEC available at **www.sec.gov**. You are cautioned not to place undue reliance on forward-looking statements, which speak only as of the date on which they were made. The Company undertakes no obligation to update such statements to reflect events that occur or circumstances that exist after the date on which they were made, except as may be required by law.

To view the original version on PR Newswire, visit:**http://www.prnewswire.com/news-releases/mast-therapeutics-announces-clinical-study-of-air001-for-the-treatment-of-chronic-infection-in-cystic-fibrosis-patients-300418177.html**

SOURCE Mast Therapeutics, Inc.

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