NEWS RELEASE

Mast Therapeutics Announces Pricing Of Underwritten Public Offering

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SAN DIEGO, Feb. 10, 2016 /PRNewswire/ -- **Mast Therapeutics, Inc.** (NYSE MKT: MSTX), a biopharmaceutical company developing novel, clinical-stage therapies for sickle cell disease and heart failure, today announced the pricing of an underwritten public offering of 29,090,910 units at a price to the public of $0.275 per unit. Each unit consists of one share of the Company's common stock and one warrant to purchase one share of the Company's common stock at an exercise price of $0.42 per share. The warrants are exercisable six months and one day following issuance and have a term of exercise of five years following issuance. The gross proceeds from this offering are expected to be approximately $8 million and, after deducting the underwriting discount and estimated offering expenses, Mast Therapeutics expects to receive net proceeds of approximately $7.3 million, not including any future proceeds from the exercise of the warrants. The offering is expected to close on or about February 16, 2016, subject to customary closing conditions.

Roth Capital Partners is acting as sole book-running manager for the offering. Maxim Group LLC is acting as co-manager for the offering.

Mast Therapeutics intends to use the net proceeds from the offering primarily to fund its clinical development programs of vepoloxamer in sickle cell disease and vepoloxamer and AIR001 in heart failure, for regulatory, manufacturing and other commercial-readiness activities for vepoloxamer in sickle cell disease, and for working capital and general corporate purposes.

The securities described above are being offered by Mast Therapeutics pursuant to a shelf registration statement that was previously filed with and declared effective by the U.S. Securities and Exchange Commission (SEC). The securities may be offered only be means of a prospectus supplement relating to the offering and the accompanying base prospectus, which form a part of the shelf registration statement. A preliminary prospectus supplement

related to the offering has been filed with the SEC. A final prospectus supplement relating to the offering will be filed with the SEC and will be available on the SEC's website at **http://www.sec.gov**. Copies of the final prospectus supplement and accompanying base prospectus relating to this offering may be obtained from Roth Capital Partners, 888 San Clemente, Newport Beach, CA 92660, (800) 678-9147 or by accessing the SEC's website, **http://www.sec.gov**.

This press release shall not constitute an offer to sell or the solicitation of an offer to buy any of the securities described herein, nor shall there be any sale of these securities in any state or jurisdiction in which such offer, solicitation or sale would be unlawful prior to registration or qualification under the securities laws of any such state or jurisdiction.

About Mast Therapeutics

Mast Therapeutics, Inc. is a publicly traded biopharmaceutical company headquartered in San Diego, California. The Company is leveraging its Molecular Adhesion and Sealant Technology (**MAST) platform**, derived from over two decades of clinical, nonclinical and manufacturing experience with purified and non-purified poloxamers, to develop vepoloxamer (also known as MST-188), its lead product candidate, for serious or life-threatening diseases and conditions typically characterized by impaired microvascular blood flow and damaged cell membranes. The Company is also developing AIR001, a sodium nitrite solution for inhalation via nebulization.

Vepoloxamer is an investigational new drug being evaluated in a pivotal Phase 3 study called EPIC for the treatment of vaso-occlusive crisis in patients with sickle cell disease and in a Phase 2 study for the treatment of patients with chronic heart failure. AIR001 is an investigational new drug in Phase 2a clinical development for the treatment of patients with heart failure with preserved ejection fraction (HFpEF). More information can be found on the Company's web site at **www.masttherapeutics.com**. (Twitter: **@MastThera**)

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Forward Looking Statements

Mast Therapeutics cautions you that statements included in this press release that are not a description of historical facts are forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995 that are based on the Company's current expectations and assumptions. Such forward-looking statements may be identified by the use of forward-looking words such as "intend," "plan," "anticipate," "believe," "expect," among others, and include, but are not limited to, statements relating to the closing of public offering of the Company's securities and the Company's intended use of proceeds from the offering. There are a number of factors that could cause or contribute to material differences between actual events or results and the expectations indicated by the forward-looking statements. These factors include, but are not limited to: market and other

conditions that affect whether and when the public offering may be completed; the inherent uncertainty of outcomes in ongoing and future studies of the Company's product candidates and the risk that its product candidates, including vepoloxamer, may not demonstrate adequate safety, efficacy or tolerability in one or more such studies, including EPIC; delays in the commencement or completion of clinical studies, including as a result of difficulties in obtaining regulatory agency agreement on clinical development plans or clinical study design, opening trial sites, enrolling study subjects, manufacturing sufficient quantities of clinical trial material, being subject to a "clinical hold," and/or suspension or termination of a clinical study, including due to patient safety concerns or lack of funding; delays in clinical study closeouts, including blinded data review and quality assurance procedures; the risk that, even if current and planned clinical studies are successful, the FDA or other regulatory agencies may determine they are not sufficient to support a new drug application; the potential that, even if clinical studies of a product candidate in one indication are successful, clinical studies in another indication may not be successful; the Company's dependence on third parties to assist with important aspects of development of its product candidates, including conduct of its clinical studies and supply and manufacture of clinical trial material, and, if approved, commercial product, and the risk that such third parties may fail to perform as expected; the risk that the Company may be required to repay its outstanding debt obligations on an accelerated basis and/or at a time that could be detrimental to its financial condition, operations and/or business strategy; risk associated with the Company's ability to manage operating expenses and/or obtain additional funding to support its operations on a timely basis or on acceptable terms, or at all; the potential for the Company to delay, reduce or discontinue current and/or planned development activities, including clinical studies, or partner its product candidates at inopportune times if it is unable to raise sufficient additional capital as needed; the risk that, even if the Company successfully develops a product candidate in one or more indications, it may not realize commercial success and may never achieve profitability; the risk that the Company is not able to obtain and maintain effective patent coverage or other market exclusivity protections for its products, if approved, without infringing the proprietary rights of others; and other risks and uncertainties more fully described in the Company's press releases and periodic filings with the Securities and Exchange Commission. The Company's public filings with the Securities and Exchange Commission are available at **www.sec.gov**.

You are cautioned not to place undue reliance on forward-looking statements, which speak only as of the date when made. Mast Therapeutics does not intend to revise or update any forward-looking statement set forth in this press release to reflect events or circumstances arising after the date hereof, except as may be required by law.

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