June 30, 2020

Matinas BioPharma Resumes Enrollment in the ENHANCE-IT and EnACT Clinical Trials

- *Topline data from ENHANCE-IT study of MAT9001 vs. Vascepa® expected in Q1 2021*
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- *EnACT remains on track for cohort progression in Q4 2020* -

BEDMINSTER, N.J., June 30, 2020 (GLOBE NEWSWIRE) -- Matinas BioPharma Holdings, Inc. (NYSE AMER: MTNB), today announced that it has commenced enrollment and started dosing patients in the ENHANCE-IT study and that it expects to resume dosing patients in the EnACT study imminently, following the recent receipt of necessary governmental and regulatory approvals in Uganda. Both studies had temporarily paused enrollment in March due to the COVID-19 pandemic.

"I am extremely pleased with our execution and progress during a period of significant uncertainty, given all of the ramifications of the ongoing COVID-19 pandemic. Resuming enrollment in both ENHANCE-IT and EnACT were critical milestones for our Company and position us to deliver potentially clinically meaningful Phase 2 data for our lead products relatively quickly," stated Jerome D. Jabbour, Chief Executive Officer of Matinas. "We believe we have taken the appropriate steps to ensure the safety of clinical trial participants and caregivers and we remain grateful for their commitment to our important clinical work. We look forward to completing these studies within our previously communicated timelines and believe each study represents a significant value-creating opportunity."

ENHANCE-IT Study Update

- In early June, the Company resumed enrollment and began dosing patients in the ENHANCE-IT (*Pharmacodynamic Effects of a Free-fatty Acid Formulation of Omega-3 Pentaenoic Acids to ENHANCE Efficacy in Adults with Hypertriglyceridemia*) trial, a head-to-head study of MAT9001 vs. Vascepa.

- The Company expects to complete enrollment in August of 2020, with topline data available in the first quarter of 2021.

EnACT Study Update

- In late June, Matinas received approval from the Uganda National Drug Authority to restart the EnACT study (*Encochleated Oral Amphotericin for Cryptococcal Meningitis Trial*) and is preparing to begin dosing patients imminently. The first cohort of patients is expected to fully enroll by early September based upon projections from Dr. David

Boulware, the Principal Investigator for the EnACT trial.

- Evaluation of data from the first cohort of patients by the independent Data and Safety Monitoring Board and anticipated progression from the first patient cohort to the second patient cohort is expected during the fourth quarter of 2020.

About Matinas BioPharma

Matinas BioPharma is a clinical-stage biopharmaceutical company focused on development of its lead product candidate, MAT9001, for the treatment of cardiovascular and metabolic conditions. MAT9001 is a prescription-only omega-3 fatty acid-based composition, comprised primarily of EPA and DPA, under development for hypertriglyceridemia, that was specifically designed to overcome the shortcomings seen from other agents in the omega-3 class. Company leadership has a deep history and knowledge of cardiovascular drug development and is supported by a world-class team of scientific advisors.

In addition, the Company is developing MAT2203, an oral, encochleated formulation of amphotericin B, to treat serious invasive fungal infections. The drug is based on the Company’s proprietary lipid nano-crystal (LNC) platform delivery technology, which can help solve complex challenges relating to the safe and effective delivery of potent medicines, potentially making them more targeted, less toxic and orally bioavailable.

Forward-Looking Statements

This release contains "forward-looking statements" within the meaning of the Private Securities Litigation Reform Act of 1995, including those relating to the Company's anticipated capital and liquidity needs, strategic focus and the future development of its product candidates, including MAT9001 and MAT2203, the anticipated timing of regulatory submissions, the anticipated timing of clinical studies, the anticipated timing of regulatory interactions, the Company’s ability to identify and pursue development and partnership opportunities for its products or platform delivery technology on favorable terms, if at all, and the ability to obtain required regulatory approval and other statements that are predictive in nature, that depend upon or refer to future events or conditions. All statements other than statements of historical fact are statements that could be forward-looking statements. Forward-looking statements include words such as "expects," "anticipates," "intends," "plans," "could," "believes," "estimates" and similar expressions. These statements involve known and unknown risks, uncertainties and other factors which may cause actual results to be materially different from any future results expressed or implied by the forward-looking statements. Forward-looking statements are subject to a number of risks and uncertainties, including, but not limited to, our ability to obtain additional capital to meet our liquidity needs on acceptable terms, or at all, including the additional capital which will be necessary to complete the clinical trials of our product candidates; our ability to successfully complete research and further development and commercialization of our product candidates; the uncertainties inherent in clinical testing; the timing, cost and uncertainty of obtaining regulatory approvals; our ability to protect the Company's intellectual property; the loss of any executive officers or key personnel or consultants; competition; changes in the regulatory landscape or the imposition of regulations that affect the Company's products; and the other factors listed under "Risk Factors" in our filings with the SEC, including Forms 10-K, 10-Q and 8-K. Investors are cautioned not to place undue reliance on such forward-looking statements, which speak only as of the date of this release. Except as may be

required by law, the Company does not undertake any obligation to release publicly any revisions to such forward-looking statements to reflect events or circumstances after the date hereof or to reflect the occurrence of unanticipated events. Matinas BioPharma's product candidates are all in a development stage and are not available for sale or use.

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