January 30, 2015

# Matinas BioPharma Establishes Lipid-Based, Anti-Infective Platform, With Acquisition of Aquarius BioTechnologies Inc.

*- Novel lipid-crystal nano-particle cochleate formulation delivery platform with opportunity for broad use in anti-infectives featuring targeted delivery and multi-organ protection -*

*- Lead program for oral administration of Amphotericin B antifungal (MAT2203) with positive safety and tolerability in a Phase 1 clinical study expected to enter Phase 2a in 2015 in collaboration with NIH -*

*- Proof of principle in vivo animal efficacy demonstrated via oral administration in NIH-sponsored pre-clinical studies for an Amikacin-based antibiotic potentially fulfilling significant need to treat life-threatening Gram-negative bacterial infections -*

*- Investor conference call and webcast scheduled for Monday, February 2, 2015, at 4:30pm EST -*

**BEDMINSTER, NJ (January 30, 2015)** - Matinas BioPharma Holdings, Inc. ("Matinas BioPharma" or the "Company") (OTCQB: MTNB), a clinical-stage biopharmaceutical company focused on the development and commercialization of lipid-based prescription therapeutics for the treatment of metabolic and cardiovascular conditions and the treatment of infectious diseases, announced today that it has acquired all of the outstanding stock of Aquarius BioTechnologies Inc. (Aquarius), an innovative bio-delivery drug discovery company with a novel and proprietary lipid-crystal nano-particle cochleate formulation technology platform.

"Through the acquisition of Aquarius and its novel lipid-based, targeted drug delivery platform, Matinas BioPharma significantly expands its technological portfolio with several product candidates in the field of infectious diseases, which have been supported through the collaboration with and investment by the National Institutes of Health via grants and research contracts," commented Roelof Rongen, President & CEO of Matinas BioPharma.

"Furthermore, this innovative delivery platform complements our focus in lipidomics and allows us to further leverage our significant internal expertise in the development of lipid-based therapies. Following this transaction, 2015 is poised to be an important year for Matinas BioPharma as we continue to advance our product candidates, including MAT9001 and MAT2203 which represent our two lead clinical programs," added Mr. Rongen.

Matinas BioPharma does not anticipate any material increase in its cash burn in the short

term as a result of this transaction, primarily due to the various National Institutes of Health (NIH) grants and contracts currently in place with Aquarius and its subsidiary, Coordinated Program Development LLC.

"Aquarius and its stockholders are extremely enthusiastic about this merger, as the combined platform builds on both companies' technological strengths and is expected to further enhance the opportunity to develop novel drugs to treat various infectious diseases," said Dr. Raphael J. Mannino, the founder of Aquarius and an inventor of the cochleate bio-delivery platform technology.

Dr. Mannino, Associate Professor of Pathology and Laboratory Medicine at the Rutgers New Jersey Medical School, will act as an advisor to Matinas BioPharma on the continued development of the acquired product candidates. Aquarius' lipid-crystal nano-particle cochleate formulation was developed in collaboration with Rutgers, The State University of New Jersey, which has granted Aquarius exclusive worldwide licenses under applicable patents.

"The Office of Research Commercialization at Rutgers is pleased with this transaction, both as licensor to this novel technology and as a stockholder of Aquarius," said S. David Kimball, Ph.D., Associate Vice President, Research Commercialization in the Office of Research and Economic Development. "This promising technology platform that we developed with Aquarius is now bolstered by the combination with Matinas BioPharma, whose team has a great track record of developing lipid-based therapies and driving commercial success. We believe Matinas is well positioned to capitalize on the potential for this platform. We are also pleased that Matinas BioPharma is a New Jersey-based company, further demonstrating our commitment to strengthen Rutgers' and New Jersey's reputation as a cradle of scientific innovation."

**Aquarius Product Candidates in Development**

Aquarius' pipeline includes five (5) products currently under development, each of which is progressing in collaboration with the National Institute of Allergy and Infectious Diseases (NIAID), part of the NIH.

- CAmB - Encochleated Amphotericin B
- C-Amikacin - Encochleated Amikacin
- C-Capreomycin - Encochleated Capreomycin
- C-Atovaquone - Encochleated Atovaquone
- Enhancing Tissue Penetration of ARVs by Formulation into Lipid Nanocrystals

The most advanced programs are described in more detail below:

**CAmB (MAT2203)**

The most advanced anti-infective product candidate is a lipid-crystal nano-particle formulation of Amphotericin B (CAmB). Amphotericin B is a well-known broad spectrum fungicidal currently available by IV-only administration with significant side effects (including nephrotoxicity). MAT2203 has an active Investigational New Drug (IND) application with the U.S. Food and Drug Administration (FDA) and is under development as an oral antifungal. In a clinical Phase 1a single-dose, double-blind, dose-escalating, pharmacokinetic (PK) study

of 48 healthy volunteers, oral CAmB demonstrated a positive safety and tolerability profile with no adverse events reported. The study provides support for multi-dose pharmacokinetic studies and Phase 2 efficacy studies for oral administration of CAmB and may have the potential to be awarded an Orphan Drug Designation for certain of the intended indications. Indications currently being explored for MAT2203 include resistant candidiasis, cryptococcal meningoencephalitis, aspergillosis and leishmaniasis. Matinas BioPharma plans to advance MAT2203 into Phase 2a studies as quickly as possible in 2015 with anticipated collaboration with the NIH.

**C-Amikacin (MAT2501)**

MAT2501 is a lipid-crystal nano-particle formulation of Amikacin in the preclinical development stage. Amikacin is an aminoglycoside antibiotic most often used for treating severe, hospital-acquired infections, including Gram-negative bacterial infections. Like Amphotericin B, Amikacin is currently only delivered through an IV and has very serious side effects. Proof-of-principle testing in animal models showing *in vivo* efficacy for oral administration of C-Amikacin using a lipid-crystal nano-particle cochleate formulation has been completed at Aquarius and the NIH and additional *in vivo* studies are underway.

**Terms of the Transaction**

Pursuant to the terms of the Merger Agreement, Matinas is obligated to issue an aggregate of 5,000,000 shares of its common stock at closing, subject to adjustment as set forth in the Merger Agreement. At closing, Matinas BioPharma issued 4,608,020 shares (the "Closing Shares") of its common stock. The number of Closing Shares may be adjusted after the closing under the terms of the Merger Agreement but in no event shall the number of Closing Shares exceed 5,000,000 shares of Matinas' common stock. In addition, subject to the Matinas BioPharma right of setoff for indemnification claims, Matinas BioPharma may issue up to an additional 3,000,000 shares (the "Additional Shares") of common stock upon the achievement of certain milestones. The milestone consideration consists of: (i) 1,500,000 shares issuable upon the dosing of the first patient in a Phase 3 trial sponsored by Matinas BioPharma for a product utilizing Aquarius' proprietary drug cochleate technology, and (ii) 1,500,000 shares issuable upon FDA approval of the first NDA submitted by Matinas BioPharma for a product utilizing Aquarius' proprietary drug cochleate technology.

As of the effective time of the Merger, which excludes the effect of any future milestone consideration or indemnification claims, the former Aquarius stockholders own approximately 8% of the aggregate number of shares of the common stock outstanding (on a fully diluted basis), and the stockholders of Matinas BioPharma as of immediately prior to the Merger (the "Matinas Stockholders") own approximately 92% of the aggregate number of shares of common stock outstanding (on a fully diluted basis).

**Conference Call and Webcast**

Matinas BioPharma will host a conference call for investors and analysts on Monday, February 2, 2015, beginning at 4:30 pm U.S. Eastern Time. This call can be accessed in three ways:

- **At the Matinas BioPharma website in the Investor Relations Section:** http://ir.matinasbiopharma.com/events.

- **By Telephone:** For both "listen-only" participants and those who wish to take part in the questions and answer portion of the call, the telephone dial number in the U.S. is 877-407-5976. For participants outside the U.S., the dial-in number is 412-902-0031.
- **Through a Webcast Replay:** A live audio webcast of the call will be available on Matinas BioPharma's website at http://ir.matinasbiopharma.com/events and will be accessible for approximately one month.

## About Cochleate Technology

Cochleates have a multilayer crystalline, structure with no internal aqueous space. The structure is formed when a series of solid lipid sheets engulf drug molecules, a process referred to as "encochleation." Encochleation involves combining calcium and soy-derived phosphatidylserine (PS), two naturally occurring materials classified as GRAS (generally recognized as safe) by the FDA, through a tightly controlled crystallization process to envelop the Active Pharmacological Ingredient (API). The result is a nano-size encochleated drug formulation. The unique cochleate structure protects the drug from degradation when it passes through the gastrointestinal (GI) tract and into the blood stream. Cochleates can be used to reformulate a wide variety of both large and small molecules with both high and low solubility.

## About Rutgers New Jersey Medical School

Celebrating its 60th anniversary, Rutgers New Jersey Medical School was founded in 1954 and is the oldest school of medicine in the state. Today it is part of Rutgers, The State University of New Jersey and graduates approximately 170 physicians a year. In addition to providing the MD degree, the school offers MD/PhD, MD/MPH and MD/MBA degrees through collaborations with other institutions of higher education. Dedicated to excellence in education, research, clinical care and community outreach, the medical school comprises 22 academic departments and works with several healthcare partners, including its principal teaching hospital, The University Hospital. Its faculty consists of numerous world-renowned scientists and many of the region's "top doctors." Home to the nation's oldest student-run clinic, New Jersey Medical School hosts more than 50 centers and institutes, including the Public Health Research Institute Center, the Global Tuberculosis Institute and the Neurological Institute of New Jersey. For more information please visit: njms.rutgers.edu.

## About Matinas BioPharma

Matinas BioPharma is a clinical-stage biopharmaceutical company, founded in 2011, with a focus on identifying and developing novel lipid-based pharmaceutical products for the treatment cardiovascular and metabolic conditions and infectious diseases. Led by an experienced management team and a board of directors with a history of building pharmaceutical companies, Matinas is focused on creating highly differentiated, safe and efficacious therapies utilizing its expertise in drug formulation and development. Our lead product, MAT9001, which takes advantage of advancements in the field of lipidomics, has been specifically designed and formulated for therapeutic applications in the dyslipidemia field. Recent additions to our product pipeline, including MAT2203 and MAT2501, position the Company to become a leader in the safe and effective delivery of anti-infective therapies utilizing our proprietary lipid-crystal nano-particle cochleate formulations. For more information, please visit www.matinasbiopharma.com and connect with the Company on Twitter, LinkedIn, Facebook, and Google+.

**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 product development, clinical and regulatory timelines, market opportunity, cash flow 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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