

UNITED STATES  
SECURITIES AND EXCHANGE COMMISSION  
Washington, D.C. 20549

Form S-1

REGISTRATION STATEMENT UNDER  
THE SECURITIES ACT OF 1933

Matinas BioPharma Holdings, Inc.  
*(Exact Name of Registrant as Specified in its Charter)*

**Delaware**  
(State or other jurisdiction of incorporation  
or organization)

**2834**  
(Primary Standard Industrial Classification  
Code Number)

**46-3011414**  
(I.R.S. Employer  
Identification No.)

1545 Route 206 South, Suite 302  
Bedminster, New Jersey 07921  
Telephone: 908-443-1860  
*(Address, including zip code, and telephone number,  
including area code, of principal executive offices)*

Roelof Rongen  
Chief Executive Officer  
Matinas BioPharma Holdings, Inc.  
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Approximate date of proposed sale to public: As soon as practicable on or after the effective date of this registration statement.

If any of the securities being registered on this Form are to be offered on a delayed or continuous basis pursuant to Rule 415 under the Securities Act of 1933 check the following box.

If this Form is filed to register additional securities for an offering pursuant to Rule 462(b) under the Securities Act, please check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering.

If this Form is a post-effective amendment filed pursuant to Rule 462(c) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering.

If this Form is a post-effective amendment filed pursuant to Rule 462(d) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering.

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Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or a smaller reporting company. See definitions of “large accelerated filer,” “accelerated filer,” and “smaller reporting company” in Rule 12b-2 of the Exchange Act. (Check one):

Large accelerated filer

Accelerated filer

Non-accelerated filer

Smaller reporting company

(Do not check if a smaller reporting company)

CALCULATION OF REGISTRATION FEE

Title of Each Class of Securities to Be Registered	Amount to Be Registered(1)	Proposed Maximum Offering Price per Share	Proposed Maximum Aggregate Offering Price	Amount of Registration Fee
Shares of common stock	16,850,000	\$ 1.27(2)	\$ 21,315,250	\$ 2,477
Shares of common stock underlying warrants sold to selling stockholders in private placement	16,850,000	\$ 1.27(3)	\$ 21,315,250	\$ 2,477
<b>Total</b>	<u>33,700,000</u>		<u>\$ 42,630,500</u>	<u>\$ 4,954</u>

- (1) Represents shares offered by the selling stockholders. Includes an indeterminable number of additional shares of common stock, pursuant to Rule 416 under the Securities Act of 1933, as amended, that may be issued to prevent dilution from stock splits, stock dividends or similar transactions that could affect the shares to be offered by selling stockholders.
- (2) Estimated solely for the purpose of calculating the registration fee pursuant to Rule 457(c) under the Securities Act of 1933, as amended, based on the average high and low prices of the Registrant’s common stock on June 4, 2015, as reported on the OTCQB Market.
- (3) Represents shares of common stock issuable upon the exercise of warrants issued in the Private Placement with an exercise price per share of \$0.75 per share. Proposed maximum offering price per share is based on the exercise price of the warrant in accordance with Rule 457(g) and 457(c).

**The Registrant hereby amends this Registration Statement on such date or dates as may be necessary to delay its effective date until the Registrant shall file a further amendment which specifically states that this Registration Statement shall thereafter become effective in accordance with Section 8(a) of the Securities Act, as amended, or until this Registration Statement shall become effective on such date as the Commission, acting pursuant to such Section 8(a), may determine.**

**The information in this prospectus is not complete and may be changed. These securities may not be sold by the selling stockholders until the Securities and Exchange Commission declares our registration statement effective. This prospectus is not an offer to sell these securities and is not soliciting an offer to buy these securities in any state where the offer or sale is not permitted.**

**Preliminary Prospectus**

**Subject to Completion, dated June 9, 2015**

Matinas BioPharma Holdings, Inc.

33,700,000 Shares  
common stock

This prospectus relates to the offer for sale of up to an aggregate of 33,700,000 shares of common stock of Matinas BioPharma Holdings, Inc. by the selling stockholders named herein. We are not offering any securities pursuant to this prospectus. The shares of common stock offered by the selling stockholders include 16,850,000 shares of common stock underlying warrants.

Our common stock is listed for quotation on the OTCQB Market operated by OTC Markets Group, Inc. (or OTCQB) under the ticker symbol "MTNB." On June 4, 2015, closing price of our common stock was \$1.33.

Following the effectiveness of the registration statement of which this prospectus forms a part, the sale and distribution of securities offered hereby may be effected in one or more transactions that may take place on the OTC Bulletin Board and/or OTCQB Market, including ordinary brokers' transactions, privately negotiated transactions or through sales to one or more dealers for resale of such securities as principals, at market prices prevailing at the time of sale, at prices related to such prevailing market prices or at negotiated prices. Usual and customary or specifically negotiated brokerage fees or commissions may be paid by the selling stockholders. See "Plan of Distribution."

The selling stockholders and intermediaries through whom such securities are sold may be deemed "underwriters" within the meaning of the Securities Act of 1933, as amended, with respect to the securities offered hereby, and any profits realized or commissions received may be deemed underwriting compensation.

**We are an "emerging growth company" under the federal securities laws and will be subject to reduced public company reporting requirements. Investing in our common stock is highly speculative and involves a significant degree of risk. See "Risk Factors" beginning on page 5 of this prospectus for a discussion of information that should be considered before making a decision to purchase our common stock.**

**Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or determined if this prospectus is truthful or complete. Any representation to the contrary is a criminal offense.**

The date of this prospectus is \_\_\_\_\_, 2015.

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You should rely only on the information contained in this prospectus. We have not authorized any other person to provide you with information different from or in addition to that contained in this prospectus. If anyone provides you with different or inconsistent information, you should not rely on it. We are not making an offer to sell these securities in any jurisdiction where an offer or sale is not permitted. You should assume that the information appearing in this prospectus is accurate only as of the date on the front cover of this prospectus. Our business, financial condition, results of operations and prospects may have changed since that date.

**Additional risks and uncertainties not presently known or that are currently deemed immaterial may also impair our business operations. The risks and uncertainties described in this document and other risks and uncertainties which we may face in the future will have a greater impact on those who purchase our common stock. These purchasers will purchase our common stock at the market price or at a privately negotiated price and will run the risk of losing their entire investments.**

**For investors outside the United States:** We have not done anything that would permit this offering or possession or distribution of this prospectus in any jurisdiction where action for that purpose is required, other than in the United States. You are required to inform yourselves about and to observe any restrictions relating to this offering and the distribution of this prospectus.

In this prospectus, we rely on and refer to information and statistics regarding our industry. We obtained this statistical, market and other industry data and forecasts from publicly available information.

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## PROSPECTUS SUMMARY

*This summary highlights information contained in other parts of this prospectus. Because it is a summary, it does not contain all of the information that you should consider in making your investment decision. Before investing in our common stock, you should read the entire prospectus carefully, including our consolidated financial statements and the related notes included in this prospectus and the information set forth under the headings “Risk Factors” and “Management’s Discussion and Analysis of Financial Condition and Results of Operations.”*

*When used herein, unless the context requires otherwise, references to the “Company,” “we,” “our” and “us” refer to Matinas BioPharma Holdings, Inc., a Delaware corporation, collectively with its wholly-owned subsidiaries, Matinas BioPharma, Inc., a Delaware corporation, which we sometimes refer to herein as Matinas BioPharma, and Aquarius Biotechnologies, Inc., a Delaware corporation, which we sometimes refer to herein as Aquarius.*

### **Our Company**

On January 29, 2015, we completed the acquisition of Aquarius Biotechnologies, Inc., (referred to as the “Aquarius Merger”), a New Jersey-based, early-stage pharmaceutical company focused on the development of differentiated and orally delivered therapeutics based on a proprietary, lipid-based, drug delivery platform called “cochleate delivery technology.” Following the Aquarius Merger, we are a clinical-stage biopharmaceutical company focused on the development of targeted therapeutics for the treatment of serious fungal and bacterial infections, using our innovative lipid-based drug delivery cochleate platform.

Our proprietary cochleate lipid-crystal nano-particle delivery technology platform, licensed from Rutgers University on an exclusive worldwide basis, is designed specifically for the targeted and safe delivery of pharmaceuticals directly to the site of infection or inflammation. We believe this platform represents a significant innovation that may result in meaningful improvements to currently available therapies to treat numerous life-threatening diseases, including serious fungal infections and multi-drug resistant, or MDR, gram-negative bacterial infections.

Our lead product candidate using the cochleate delivery technology is MAT2203, an oral formulation of the broad spectrum intravenous(IV)-delivered anti-fungal agent amphotericin B. MAT2203 is under development for serious fungal infections and a single-escalating-dose Phase 1 study with MAT2203 has been completed. We expect to commence and complete a Phase 2a study of MAT2203 in collaboration with the National Institute of Allergy and Infectious Diseases, or NIAID, of the National Institutes of Health, or NIH, in 2015, with initial results expected in the fourth quarter of 2015. We are developing a pipeline of targeted delivery formulations by applying our cochleate oral delivery technology to a potentially broad array of proven medications, including MAT2501. MAT2501 is an oral cochleate formulation of the broad spectrum intravenous (IV)-delivered aminoglycoside antibiotic called amikacin, which is most often used for treating severe, hospital-acquired infections, including Gram-negative bacterial infections. MAT2501 is currently in the formal toxicology testing stage, expected to lead to an IND filing in late 2015.

We are also developing the lipid-based product MAT9001 with an initial indication for the treatment of highly elevated triglycerides, or severe hypertriglyceridemia. Finally, our MAT8800 discovery program is seeking to identify and develop product candidates comprising omega-3 fatty acids for the treatment of non-alcoholic fatty liver disease for which there are currently no approved pharmacologic treatments available.

### **Implications of Being an Emerging Growth Company**

We are an “emerging growth company,” as defined in the Jumpstart Our Business Startups Act of 2012, or the JOBS Act, and, for as long as we continue to be an “emerging growth company,” we may choose to take advantage of exemptions from various reporting requirements applicable to other public companies but not to “emerging growth companies,” including, but not limited to, not being required to comply with the auditor attestation requirements of Section 404 of the Sarbanes-Oxley Act of 2002, reduced disclosure obligations regarding executive compensation in our periodic reports and proxy statements, and exemptions from the requirements of holding a nonbinding advisory vote on executive compensation and stockholder approval of any golden parachute payments not previously approved. We could be an “emerging growth company” for up to five years, or until the earliest of (i) the last day of the first fiscal year in which our annual gross revenues exceed \$1 billion, (ii) the date that we become a “large accelerated filer” as defined in Rule 12b-2 under the Securities Exchange Act of 1934, as amended, which would occur if the market value of our common stock that is held by non-affiliates exceeds \$700 million as of the last business day of our most recently completed second fiscal quarter, or (iii) the date on which we have issued more than \$1 billion in non-convertible debt during the preceding three-year period. We have taken advantage of reduced reporting requirements in this prospectus. Accordingly, the information contained herein may be different from the information you receive from other public companies in which you hold stock. Also, we have irrevocably elected to “opt out” of the extended transition periods available under the JOBS Act for complying with new or revised accounting standards and, therefore, will be subject to the same new or revised accounting standards as other public companies that are not emerging growth companies.

## Corporate Information

Matinas BioPharma Holdings Inc., sometimes referred to herein as Holdings, is a Delaware corporation formed in May 2013. Holdings is the parent company of two operating subsidiaries: Matinas BioPharma, Inc., a Delaware corporation, and Aquarius Biotechnologies Inc., a Delaware corporation. Nereus BioPharma LLC, a Delaware limited liability company (and Matinas BioPharma's predecessor) was formed on August 12, 2011. On February 29, 2012, Nereus BioPharma LLC converted from a limited liability company to a corporation and changed its name to Matinas BioPharma, Inc. On January 29, 2015, we acquired Aquarius Biotechnologies Inc.

Our principal offices are located at 1545 Route 206 South, Suite 302, Bedminster, New Jersey 07921. Our web address is [www.matinasbiopharma.com](http://www.matinasbiopharma.com). Information contained in or accessible through our web site is not, and should not be deemed to be, part of this prospectus. You should not rely on our website or any such information in making your decision whether to purchase our common stock.

We currently do not own or license any U.S. federal trademark registrations or applications. Some trademarks referred to in this prospectus are referred to without the ® and ™ symbols, but such references should not be construed as any indicator that their respective owners will not assert, to the fullest extent under applicable law, their rights thereto.

## THE OFFERING

**Common Stock Outstanding** 56,900,670 shares (1)

**Common Stock, including Shares of  
Common Stock underlying Warrants,  
Offered by Selling Stockholders** 33,700,000 shares (2)

**Use of Proceeds** We will not receive any proceeds from the sale of the common stock by the selling stockholders. We would, however, receive proceeds upon the exercise of the warrants held by the selling stockholders which, if such warrants are exercised in full (and assuming no “cashless” exercise features are utilized), would be approximately \$20,765,000. Proceeds, if any, received from the exercise of such warrants will be used for working capital and general corporate purposes. No assurances can be given that any of such warrants will be exercised.

**Quotation of Common Stock:** Our common stock is listed for quotation on the OTCQB Market operated by OTC Markets Group, Inc. (or OTCQB) under the ticker symbol “MTNB.”

**Risk Factors** An investment in our company is highly speculative and involves a significant degree of risk. See “Risk Factors” and other information included in this prospectus for a discussion of factors you should carefully consider before deciding to invest in shares of our common stock.

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- (1) Excludes: (i) outstanding options to purchase 6,308,417 shares of our common stock, as of March 31, 2015, at a weighted average exercise price of \$0.96 per share; (ii) up to 2,879,056 shares of our common stock that are available, as of March 31, 2015, for future issuance under our 2013 Equity Compensation Plan; (iii) 7,500,000 shares of our common stock underlying the Investor Warrants, which have an exercise price of \$2.00 per share, issued in our 2013 Private Placement, (iv) 1,000,000 shares of common stock underlying the Merger Warrants, which have an exercise price of \$2.00 per share, issued in connection with the Merger, (v) 500,000 shares of common stock underlying the Private Placement Warrants, which have an exercise price of \$2.00 per share, issued in the warrant private placement, (vi) 4,000,000 shares of our common stock underlying the Formation Warrants, which have an exercise price of \$2.00 per share, issued in connection with the formation of Holdings, (vii) 1,500,000 shares of our common stock underlying warrants, which have an exercise price of \$1.00 per share, issued to the Placement Agent in the 2013 Private Placement, (viii) 750,000 shares of our common stock underlying warrants, which have an exercise price of \$2.00 per share issued to the Placement Agent in the 2013 Private Placement, (ix) 20,000,000 shares of common stock underlying the 2015 Investor Warrants with an exercise price of \$0.75 per share, (x) 2,000,000 shares of common stock underlying warrants issued to the Placement Agent in the 2015 Private Placement with an exercise price of \$0.75 per share and (xi) 2,000,000 shares of common stock underlying warrants issued to the Placement Agent in the 2015 Private Placement with an exercise price of \$0.50 per share.
- (2) Includes 16,850,000 shares of our common stock underlying the 2015 Investor Warrants, which have an exercise price of \$0.75 per share.



## **RISK FACTORS**

Investment in our common stock involves risks. Prior to making a decision about investing in our common stock, you should consider carefully the risk factors incorporated by reference in this prospectus, including the risk factors described in the section entitled "Risk Factors" contained in our Annual Report on Form 10-K for the fiscal year ended December 31, 2014 and other reports that we file with the SEC. Those risks and uncertainties are not the only risks and uncertainties we face. Additional risks and uncertainties not presently known to us or that we currently deem immaterial also may impair our business operations. If any of these risks actually occur, our business, results of operations and financial condition could suffer. In that event the trading price of our common stock could decline, and you may lose all or part of your investment.

## CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus contains “forward-looking statements,” which include information relating to future events, future financial performance, financial projections, strategies, expectations, the competitive environment and regulation. In some cases, you can identify forward-looking statements by terms such as “may,” “will,” “should,” “could,” “would,” “predicts,” “potential,” “continue,” “expects,” “anticipates,” “future,” “intends,” “plans,” “believes,” “estimates,” and similar expressions, as well as statements in future tense. Forward-looking statements should not be read as a guarantee of future performance or results and may not be accurate indications of when such performance or results will be achieved, if at all. Forward-looking statements are based on information we have available to us when such statements are made or on management’s good faith belief as of that time with respect to such future events, and are subject to risks and uncertainties that could cause actual performance or results to differ materially from those expressed in or suggested by the forward-looking statements. Important factors that could cause such differences include, but are not limited to:

- our ability to raise additional capital to fund our operations and to develop our product candidates;
- our limited operating history;
- our history of operating losses in each year since inception and the expectation that we will continue to incur operating losses for the foreseeable future;
- our dependence on product candidates, which are still in an early development stage;
- our ability to integrate our recent acquisition of Aquarius Biotechnologies, Inc.;
- our reliance on proprietary cochleate drug delivery technology, which is licensed to us by Rutgers University;
- our ability to manufacture GMP batches of our product candidates which are required for pre-clinical and clinical trials and, subsequently, our ability to manufacture commercial quantities;
- our ability to complete required clinical trials for our lead product candidate and other product candidates and obtain approval from the FDA or other regulatory agents in different jurisdictions;
- our lack of a sales and marketing organization and our ability to commercialize products, if we obtain regulatory approval;
- our dependence on third-parties, including third-parties to manufacture and third-party CROs to conduct our clinical trials;
- our ability to maintain or protect the validity of our patents and other intellectual property;
- our ability to retain key executive members;
- our ability to internally develop new inventions and intellectual property;
- interpretations of current laws and the passages of future laws;
- acceptance of our business model by investors;
- the accuracy of our estimates regarding expenses and capital requirements;
- our ability to adequately support growth; and
- the factors listed under the headings “Risk Factors” in the reports that we file with the Securities and Exchange Commission, which are incorporated by reference herein.

The foregoing does not represent an exhaustive list of matters that may cause actual performance or results to differ materially from those expressed in or suggested by forward-looking statements contained herein. Please see “Risk Factors” for additional risks which could adversely impact our business and financial performance.

Moreover, new risks regularly emerge and it is not possible for our management to predict or articulate all of the risks we face, nor can we assess the impact of all risks on our business or the extent to which any risk, or combination of risks, may cause actual results to differ from those contained in any forward-looking statements. Given these uncertainties, you should not place undue reliance on these forward-looking statements. All forward-looking statements included in this prospectus are based on information available to us on the date of this prospectus. Except to the extent required by applicable laws or rules, we undertake no obligation to publicly update or revise any forward-looking statement, whether as a result of new information, future events or otherwise. All subsequent written and oral forward-looking statements attributable to us or persons acting on our behalf are expressly qualified in their entirety by the cautionary statements contained above and throughout this prospectus.

## **USE OF PROCEEDS**

We will not receive any of the proceeds from the sale of the common stock by the selling stockholders named in this prospectus. All proceeds from the sale of the common stock will be paid directly to the selling stockholders.

We would, however, receive proceeds upon the exercise of the warrants held by the selling stockholders which, if such warrants are exercised in full (and assuming no “cashless” exercise features are utilized), would be approximately \$12,637,500. Proceeds, if any, received from the exercise of such warrants will be used for working capital and general corporate purposes. No assurances can be given that any of such warrants will be exercised.

## **DIVIDEND POLICY**

We have never paid any cash dividends on our common stock. We anticipate that we will retain funds and future earnings to support operations and to finance the growth and development of our business. Therefore, we do not expect to pay cash dividends in the foreseeable future. Any future determination to pay dividends will be at the discretion of our board of directors and will depend on our financial condition, results of operations, capital requirements and other factors that our board of directors deems relevant. In addition, the terms of any future debt or credit financings may preclude us from paying dividends.

## CERTAIN RELATIONSHIPS AND RELATED PARTY TRANSACTIONS

Other than compensation arrangements for our named executive officers and directors, we describe below each transaction or series of similar transactions, since January 1, 2012, to which we were a party or will be a party, in which:

- the amounts involved exceeded or will exceed \$120,000; and
- any of our directors, executive officers or holders of more than 5% of our capital stock, or any member of the immediate family of the foregoing persons, had or will have a direct or indirect material interest.

### Formation of Matinas

In connection with our formation in June 2013, we sold an aggregate of 7,500,000 shares of our common stock and 3,750,000 warrants (the "Formation Warrants") to purchase 3,750,000 shares of our common stock, at an exercise price of \$2.00 per share, for an aggregate of \$375,000 (at a purchase price of \$0.10 for two shares and one warrant), including 2,000,000 shares and warrants to purchase 1,000,000 shares of our common stock to Adam Stern and entities owned by Mr. Stern. Mr. Stern is a member of our board of directors. In addition, at such time, we sold to an entity owned by Mr. Stern Formation Warrants to purchase 250,000 shares of our common stock at a purchase price of \$10,000 (a price of \$0.04 per warrant).

### 2013 Private Placement

In July and August 2013, we completed a private placement, or the 2013 Private Placement, under which we sold an aggregate of 15,000,000 shares of our common stock and warrants to purchase an aggregate of 7,500,000 shares of our common stock with an exercise price of \$2.00 per share, which warrants are exercisable for a period of five years from the initial closing date of July 30, 2013 (the "2013 Investor Warrants"). In the 2013 Private Placement, Herbert Conrad, our chairman of the board, purchased 250,000 shares of common stock and 2013 Investor Warrants to purchase 125,000 shares of our common stock. Aegis Capital Corp., or Aegis, acted as the placement agent, or Placement Agent, for the 2013 Private Placement. The gross proceeds to us from the 2013 Private Placement were \$15.0 million.

In connection with the 2013 Private Placement, we paid the Placement Agent (i) a cash fee of \$1,500,000 and (ii) a non-accountable expense allowance equal to \$450,000. Mr. Stern is an affiliate of Aegis. In addition, as part of its compensation for acting as placement agent for the 2013 Private Placement, we issued (x) warrants to the Placement Agent to purchase 750,000 shares of our common stock with an exercise price of \$2.00 per share and (y) warrants to the Placement Agent to purchase 1,500,000 shares of our common stock with an exercise price of \$1.00 per share. Such warrants, the 2013 Placement Agent Warrants, contain a "cashless exercise" feature and are exercisable at any time prior to July 30, 2018.

In connection with the closing of the 2013 Private Placement, the Placement Agent was granted the right to appoint one member of our Board of Directors for a two-year term from the initial closing. Adam Stern, the Aegis Nominee, was appointed to the Board of Directors at the initial closing and his successor, if any, will be chosen by the Placement Agent, subject to the reasonable approval of the Company and the Voting Agreement described below.

We have agreed to engage the Placement Agent as our warrant solicitation agent in the event the 2013 Investor Warrants are called for redemption and shall pay a warrant solicitation fee to the Placement Agent equal to five (5%) percent of the amount of funds solicited by the Placement Agent upon the exercise of the 2013 Investor Warrants following such call for redemption.

### Consulting Agreement

We also entered into a consulting agreement with the Placement Agent in July 2013. The consulting agreement had a term of 12 months pursuant to which we paid the Placement Agent \$20,000 per month. Under the terms of the consulting agreement, the Placement Agent agreed to provide customary financial advisory services as reasonably requested by us, including consulting services for financing and capital markets activity, mergers, acquisitions, joint ventures and licensing agreements. This consulting agreement terminated on July 30, 2014.

### Voting Agreement

In connection with the initial closing of the 2013 Private Placement, the stockholders of Matinas BioPharma, Inc. ("Matinas BioPharma") prior to the 2013 Merger (as defined below) and the 2013 Private Placement (the "Matinas Stockholders") and the stockholders of the Company prior to the Merger (the "Company Stockholders"), entered into a Voting Agreement (the "Voting Agreement"). Pursuant to the terms of the Voting Agreement, (i) the Matinas Stockholders have the right to nominate four (4) members to our Board (the "Matinas Stockholders' Nominees"), (ii) the Company Stockholders will vote in favor of the election and removal of the Matinas Stockholders' Nominees and (iii) the Company Stockholders shall nominate the Aegis Nominee to our Board and (iv) the Matinas Stockholders shall vote in favor of the election and removal of the Aegis Nominee. The Voting Agreement will expire upon the earlier of (i) the approval of at least 75% of the Matinas Stockholders and the Company Stockholders voting together based upon their ownership of our common stock or (ii) the closing of a firm commitment underwritten public offering of shares of our common stock resulting in gross proceeds of at least \$20 million.

## 2013 Merger Transaction

In July 2013, Matinas BioPharma, Inc. entered into a merger agreement (the “2013 Merger Agreement”) with Matinas Merger Sub, Inc., a Delaware corporation and our wholly owned subsidiary, or Merger Sub. Pursuant to the terms of the 2013 Merger Agreement, as a condition of and contemporaneously with the initial closing of the 2013 Private Placement, Merger Sub merged (the “2013 Merger”) with and into Matinas BioPharma and Matinas BioPharma became a wholly owned subsidiary of ours. In connection with the 2013 Merger, all shares of common stock and preferred stock of Matinas BioPharma were cancelled and the stockholders of Matinas BioPharma received an aggregate of 9,000,000 shares of our common stock and warrants to purchase 1,000,000 shares of our common stock at an exercise price of \$2.00 per share (the “Merger Warrants”), including Herbert Conrad, our chairman of the board, who received 351,563 shares of our common stock and 250,000 Merger Warrants; Roelof Rongen, our president and chief executive officer, who received 3,417,186 shares of our common stock, Abdel A. Fawzy, our executive vice president, pharmaceutical development and supply chain development, who received 1,708,593 shares of our common stock; George Bobotas, our executive vice president and chief scientific officer, and his spouse, who received an aggregate of 1,366,875 shares of our common stock; Jerome Jabbour, our executive vice president, chief business officer and general counsel, who received 759,374 shares of our common stock; and Stefano Ferrari, a member of our board of directors, through an entity controlled by him, who received 351,563 shares of our common stock and 250,000 Merger Warrants.

## Warrant Private Placement

Contemporaneously with the initial closing of the 2013 Private Placement, we sold 500,000 warrants (“Private Placement Warrants”) in a private placement to Herbert Conrad, our chairman of the board, for a purchase price of \$0.04 per warrant. The Private Placement Warrants have an exercise price of \$2.00 per share. The Private Placement Warrants were offered to all preferred stockholders of Matinas BioPharma prior to the 2013 Merger, including Mr. Conrad. See the section entitled “Description of Capital Stock – Warrants” for a discussion of the terms of the Private Placement Warrants.

## Vendor Agreement

Since January 1, 2011, we have submitted orders for the purchase of an omega-3 fatty acid concentrate from KD-Pharma Bexbach GmbH, or KD Pharma, totaling approximately \$326,244. Mr. Ferrari, a member of our board, is the brother of a part owner of the holding company that owns KD Pharma.

## 2015 Private Placement

In March and April 2015, we completed a private placement, or the 2015 Private Placement, pursuant to which we sold to accredited investors an aggregate of 20,000,000 units at a price of \$0.50 per unit, with each unit consisting of: (i) one share of our common stock, and (ii) a five-year warrant to purchase one share of common stock at an exercise price of \$0.75 per share (the “2015 Investor Warrants”). The gross proceeds to us from the 2015 Private Placement were \$10.0 million. Certain of our officers, directors and holders of more than 5% of our capital stock purchased units in the 2015 Private Placement as set forth below.

Name	Number of Units Purchased	Aggregate Purchase Price Paid
GJG Life Sciences, LLC	3,935,880	\$ 1,967,940
Laurence G. Allen and affiliated entities	1,200,000	600,000
Herbert Conrad	1,000,000	500,000
Adam Stern and affiliated entities	800,000	400,000
James Scibetta	100,000	50,000
Roelof Rongen	50,000	25,000
Douglas Kling	40,000	20,000
Gary Gaglione	20,000	10,000

We entered into a Placement Agency Agreement with Aegis Capital Corp. pursuant to which Aegis acted as our exclusive placement agent for the 2015 Private Placement. Immediately prior to the 2015 Private Placement, the Placement Agent and its affiliates beneficially owned an aggregate of more than 10% of our outstanding equity securities. In addition, Adam Stern, Head of Private Equity Banking at Aegis, is a member of our board of directors. Pursuant to the terms of the Placement Agency Agreement, in connection with the 2015 Private Placement, we paid the Placement Agent an aggregate cash fee of \$1,000,000 and non-accountable expense allowance of \$300,000 and will issue to the Placement Agent or its designees warrants (substantially similar to the 2015 Investor Warrants) to purchase 2,000,000 shares of common stock at \$0.50 per share and additional warrants to purchase 2,000,000 shares of common stock at \$0.75 per share. In addition, we agreed to engage the Placement Agent as our warrant solicitation agent in the event the 2015 Investor Warrants are called for redemption and shall pay a warrant solicitation fee to the Placement Agent equal to five (5%) percent of the amount of funds solicited by the Placement Agent upon the exercise of the 2015 Investor Warrants following such redemption.

## **Indemnification Agreements**

We entered into indemnification agreements with our directors and executive officers. The indemnification agreements provide for indemnification against expenses, judgments, fines and penalties actually and reasonably incurred by an indemnitee in connection with threatened, pending or completed actions, suits or other proceedings, subject to certain limitations. The indemnification agreements also provide for the advancement of expenses in connection with a proceeding prior to a final, nonappealable judgment or other adjudication, provided that the indemnitee provides an undertaking to repay to us any amounts advanced if the indemnitee is ultimately found not to be entitled to indemnification by us. The indemnification agreement set forth procedures for making and responding to a request for indemnification or advancement of expenses, as well as dispute resolution procedures that apply to any dispute between us and an indemnitee arising under the Indemnification Agreements.

## **Policies and Procedures for Related Party Transactions**

We have adopted a policy that our executive officers, directors, nominees for election as a director, beneficial owners of more than 5% of any class of our common stock, any members of the immediate family of any of the foregoing persons and any firms, corporations or other entities in which any of the foregoing persons is employed or is a partner or principal or in a similar position or in which such person has a 5% or greater beneficial ownership interest, which we refer to collectively as related parties, are not permitted to enter into a transaction with us without the prior consent of our board of directors acting through the audit committee or, in certain circumstances, the chairman of the audit committee. Any request for us to enter into a transaction with a related party, in which the amount involved exceeds \$100,000 and such related party would have a direct or indirect interest must first be presented to our audit committee, or in certain circumstances the chairman of our audit committee, for review, consideration and approval. In approving or rejecting any such proposal, our audit committee, or the chairman of our audit committee, is to consider the material facts of the transaction, including, but not limited to, whether the transaction is on terms no less favorable than terms generally available to an unaffiliated third party under the same or similar circumstances, the extent of the benefits to us, the availability of other sources of comparable products or services and the extent of the related party's interest in the transaction.

## DESCRIPTION OF CAPITAL STOCK

Our current Certificate of Incorporation authorizes us to issue:

- 150,000,000 shares of common stock, par value \$0.0001 per share; and
- 10,000,000 shares of Preferred Stock, par value \$0.0001 per share, none of which have yet been designated.

As of the date of this prospectus, there were 56,900,670 shares of our common stock and no shares of our preferred stock outstanding.

The following statements are summaries only of provisions of our authorized capital stock and are qualified in their entirety by our Certificate of Incorporation, which is filed as an exhibit to the registration statement of which this prospectus forms a part. You should review these documents for a description of the rights, restrictions and obligations relating to our capital stock.

### Common Stock

*Voting.* The holders of our common stock are entitled to one vote for each share held of record on all matters on which the holders are entitled to vote (or consent to).

*Dividends.* The holders of our common stock are entitled to receive, ratably, dividends only if, when and as declared by our Board of Directors out of funds legally available therefor and after provision is made for each class of capital stock having preference over the common stock (including the common stock).

*Liquidation Rights.* In the event of our liquidation, dissolution or winding-up, the holders of our common stock are entitled to share, ratably, in all assets remaining available for distribution after payment of all liabilities and after provision is made for each class of capital stock having preference over the common stock (including the common stock).

*Conversion Rights.* The holders of our common stock have no conversion rights.

*Preemptive and Similar Rights.* The holders of our common stock have no preemptive or similar rights.

*Redemption/Put Rights.* There are no redemption or sinking fund provisions applicable to the common stock. All of the outstanding shares of our common stock are fully-paid and nonassessable.

### Preferred Stock

We are authorized to issue up to 10,000,000 shares of preferred stock, par value \$0.0001 per share, with such designations, rights, and preferences as may be determined from time to time by our Board of Directors. Accordingly, our Board of Directors is empowered, without stockholder approval, to issue preferred stock with dividend, liquidation, conversion, voting, or other rights that could adversely affect the voting power or other rights of the holders of our common stock. The issuance of preferred stock could have the effect of restricting dividends on our common stock, diluting the voting power of our common stock, impairing the liquidation rights of our common stock, or delaying or preventing a change in control of our company, all without further action by our stockholders. We have no shares of our preferred stock outstanding.

### Warrants

As of the date of this prospectus, we had outstanding warrants (consisting of 2013 Investor Warrants, Private Placement Warrants, warrants issued to the Placement Agent in our 2013 Private Placement, the 2015 Investor Warrants and warrants issued to the Placement Agent in our 2015 Private Placement) to purchase an aggregate of 39,250,000 shares of common stock at exercise prices ranging from \$0.50 to \$2.00 per share. These warrants are presently exercisable and have a five-year term. The warrants may be exercised at any time in whole or in part upon payment of the applicable exercise price until expiration of the warrants. No fractional shares will be issued upon the exercise of the warrants. The warrants may be exercised on a "cashless" basis in certain circumstances, except the 2013 Placement Agent Warrants and 2015 Placement Agent Warrants which may be exercise on a "cashless" basis at any time.

The exercise price and the number of warrant shares purchasable upon the exercise of the warrants are subject to adjustment upon the occurrence of certain events, including stock dividends, stock splits, combinations and reclassifications of our capital stock. Additionally, an adjustment would be made in the case of a reclassification or exchange, consolidation or merger of our company with or into another corporation (other than a consolidation or merger in which we are the surviving corporation) or sale of all or substantially all of our assets in order to enable holders of the warrants to acquire the kind and number of shares of stock or other securities or property receivable in such event by a holder of the number of shares common stock that might otherwise have been purchased upon the exercise of the warrants.



We may call the 2013 Investor Warrants and the Private Placement Warrants at any time the common stock trades above \$5.00 for the twenty (20) consecutive trading days immediately prior to such a call, provided that such warrants can only be called if the registration statement covering the resale of the shares of common stock underlying the 2013 Investor Warrants and the Private Placement Warrants is current and remains effective at the time of the call and provided further that we can only call the 2013 Investor Warrants for redemption, if we also call the Private Placement Warrants for redemption on the terms described above. The 2013 Placement Agent Warrants do not have a redemption feature.

We may call the 2015 Investor Warrants at any time the closing bid price for our common stock is at or above \$3.00 for the twenty (20) consecutive days immediately prior to such a call and following the effectiveness of the registration statement covering the resale of the shares of common stock underlying the 2015 Investor Warrants. The 2015 Investor Warrants can only be called if such registration statement is current and remains effective at the time of the call. The 2015 Placement Agent Warrants do not have a redemption feature.

## **Options**

As of the date of this prospectus, we had outstanding options to purchase an aggregate of 6,768,000 shares of our common stock with exercise prices ranging from \$0.41 to \$1.28 per share.

## **Transfer Agent and Registrar**

VStock Transfer, LLC is the transfer agent and registrar for our common stock.

## **Quotation of Securities**

The Company's common stock is quoted on the OTCQB. On June 4, 2015, the closing bid of the common stock was \$1.33 per share.

## **Anti-Takeover Effect of Delaware Law, Certain Charter and Bylaw Provisions**

Our certificate of incorporation and bylaws contain provisions that could have the effect of discouraging potential acquisition proposals or tender offers or delaying or preventing a change of control of our company. These provisions are as follows:

- they provide that special meetings of stockholders may be called only by the board of directors, President or our Chairman of the Board of Directors, or at the request in writing by stockholders of record owning at least fifty (50%) percent of the issued and outstanding voting shares of common stock;
- they do not include a provision for cumulative voting in the election of directors. Under cumulative voting, a minority stockholder holding a sufficient number of shares may be able to ensure the election of one or more directors. The absence of cumulative voting may have the effect of limiting the ability of minority stockholders to effect changes in our board of directors; and
- they allow us to issue, without stockholder approval, up to 10,000,000 shares of preferred stock that could adversely affect the rights and powers of the holders of our common stock.

We are subject to the provisions of Section 203 of the General Corporation Law of the State of Delaware, an anti-takeover law. In general, Section 203 prohibits a publicly held Delaware corporation from engaging in a "business combination" with an "interested stockholder" for a period of three years after the date of the transaction in which the person became an interested stockholder, unless the business combination is approved in the following prescribed manner:

- prior to the time of the transaction, the board of directors of the corporation approved either the business combination or the transaction which resulted in the stockholder becoming an interested stockholder;
- upon completion of the transaction that resulted in the stockholder becoming an interested stockholder, the stockholder owned at least 85% of the voting stock of the corporation outstanding at the time the transaction commenced, excluding for purposes of determining the number of shares outstanding (1) shares owned by persons who are directors and also officers and (2) shares owned by employee stock plans in which employee participants do not have the right to determine confidentially whether shares held subject to the plan will be tendered in a tender or exchange offer; and
- on or subsequent to the time of the transaction, the business combination is approved by the board and authorized at an annual or special meeting of stockholders, and not by written consent, by the affirmative vote of at least 66 2/3% of the outstanding voting stock which is not owned by the interested stockholder.

Generally, for purposes of Section 203, a "business combination" includes a merger, asset or stock sale, or other transaction resulting in a financial benefit to the interested stockholder. An "interested stockholder" is a person who, together with affiliates and associates, owns or, within three years prior to the determination of interested stockholder status, owned 15% or more of a corporation's outstanding voting securities.

## SELLING STOCKHOLDERS

The following table sets forth information as of the date of this prospectus, to our knowledge, about the beneficial ownership of our common stock by the selling stockholders both before and immediately after the offering.

All of the selling stockholders received their securities included for resale in this prospectus in the 2015 Private Placement, which occurred prior to the initial filing date of the registration statement of which this prospectus is a part. We believe that the selling stockholders have sole voting and investment power with respect to all of the shares of common stock beneficially owned by them unless otherwise indicated. We believe that all securities purchased by broker-dealers or affiliates of broker-dealers were purchased by such persons and entities in the ordinary course of business and at the time of purchase, such purchasers did not have any agreements or understandings, directly or indirectly, with any person to distribute such securities.

The percent of beneficial ownership for the selling stockholders is based on 56,900,670 shares of common stock outstanding as the date of this prospectus. Warrants to purchase shares of our common stock held by certain investors that are currently exercisable or exercisable within 60 days of the date of this prospectus are considered outstanding and beneficially owned by such investors for the purpose of computing the percentage ownership of their respective percentage ownership but are not treated as outstanding for the purpose of computing the percentage ownership of any other stockholder. Unless otherwise stated below, to our knowledge, none of the selling stockholders has had a material relationship with us other than as a stockholder at any time within the past three years or has ever been one of our officers or directors.

Pursuant to Rules 13d-3 and 13d-5 of the Exchange Act, beneficial ownership includes any shares of our common stock as to which a stockholder has sole or shared voting power or investment power, and also any shares of our common stock which the stockholder has the right to acquire within 60 days, including upon exercise of warrants to purchase shares of our common stock.

The shares of common stock being offered pursuant to this prospectus may be offered for sale from time to time during the period the registration statement of which this prospectus is a part remains effective, by or for the account of the selling stockholders. After the date of effectiveness, the selling stockholders may have sold or transferred, in transactions covered by this prospectus or in transactions exempt from the registration requirements of the Securities Act, some or all of their common stock.

Information about the selling stockholders may change over time. Any changed information will be set forth in an amendment to the registration statement or supplement to this prospectus, to the extent required by law.

Name of Selling Stockholder	Shares Beneficially Owned as of the Date of This Prospectus <sup>(1)</sup>		Shares Offered By this Prospectus	Shares Beneficially Owned After the Offering <sup>(1) (2)</sup>	
	Number	Percent		Number	Percent
Iroquois Capital Investment Group LLC <sup>(3)</sup>	100,000	*	100,000	-	*
Iroquois Master Fund Ltd. <sup>(4)</sup>	350,000	*	350,000	-	*
ACP X, LP <sup>(5)</sup>	3,586,250	6.13%	2,000,000	1,586,250	2.79%
LGA Fam Investments <sup>(6)</sup>	700,000	1.22%	400,000	300,000	*
Jan Arnett	400,000	*	400,000	-	*
Robert B. Baker	100,000	*	100,000	-	*
Balsam Capital Management <sup>(7)</sup>	100,000	*	100,000	-	*
Lawrence B. Barraza	40,000	*	40,000	-	*

Vishanta Trust (Vipin Bhavsar) <sup>(8)</sup>	60,000	*	60,000	-	*
Edwin Blitz <sup>(9)</sup>	40,000	*	40,000	-	*
First Riverside Investors LP <sup>(10)</sup>	1,000,000	1.74%	1,000,000	-	*
Raymond J. and Joan L. Bonanno	1,000,000	1.74%	1,000,000	-	*
Kenneth E. Chyten	400,000	*	400,000	-	*
Bernard R. Cohen	100,000	*	100,000	-	*
Douglas Cohen	200,000	*	200,000	-	*
Natalie and Daniel Cohen	100,000	*	100,000	-	*
Eliot R. Cutler	400,000	*	400,000	-	*
John E. Dell, Laura P. Dell	715,000	1.25%	640,000	75,000	*
Joseph Denora	100,000	*	100,000	-	*
Edward Dunn	1,559,300	2.71%	1,000,000	559,300	*
Haitham Elsheikh	425,000	*	200,000	225,000	*
MKF Holdings <sup>(11)</sup>	300,000	*	300,000	-	*
Steven M Farber	50,000	*	50,000	-	*
Reiner Fenske	240,000	*	240,000	-	*
Daniel M. Foley	300,000	*	300,000	-	*
Steven Freifeld <sup>(12)</sup>	256,240	*	256,240	-	*
William James Garner	100,000	*	100,000	-	*
Michael Garnick	1,300,000	2.26%	700,000	600,000	1.05%
Harold Gault	40,000	*	40,000	-	*
Daniel J. Gilbert	100,000	*	100,000	-	*
Ehud Moshe Gilboa	200,000	*	200,000	-	*
Richard Gurfein & Erica Gurfein	20,000	*	20,000	-	*
Souheil Haddad	1,037,500	1.81%	1,000,000	37,500	*
SPH Investments, Inc. <sup>(13)</sup>	200,000	*	200,000	-	*
Wiltain Investors LLC <sup>(14)</sup>	1,362,500	2.36%	200,000	1,162,000	2.04%
William Harrow and Ellen Harrow	90,000	*	40,000	50,000	*
Dean Holland	200,000	*	200,000	-	*
Peter T. Imbert	200,000	*	200,000	-	*
Andrew Kaufman	155,000	*	80,000	75,000	*
Douglas P. Kaufman	137,500	*	100,000	37,500	*
Maura Kelly	200,000	*	200,000	-	*

William Klingenstein	40,000	*	40,000	-	*
David Kovacs	62,500	*	40,000	22,500	*
Joel Kovacs	50,500	*	28,000	22,500	*
David M. Kutz, Patricia A. Kutz	350,000	*	200,000	150,000	*
Rexford Capital LLC <sup>(15)</sup>	1,000,000	1.74%	1,000,000	-	*
Michael Geoffrey Layman <sup>(16)</sup>	140,000	*	140,000	-	*
Aaron Lehmann	100,000	*	100,000	-	*
Michael Leiter	80,000	*	80,000	-	*
Ligi Realty Limited Partnership <sup>(17)</sup>	1,200,000	2.09%	1,200,000	-	*
Philip LoMedico	40,000	*	40,000	-	*
Patrick Lorenz M.D.	175,000	*	100,000	75,000	*
GJG Life Sciences LLC <sup>(18)</sup>	10,496,760	17.01%	7,871,760	2,625,000	4.61%
Joanne Maggiore	151,250	*	100,000	51,250	*
John McDowell	60,000	*	60,000	-	*
Patterson and McShane Trust dated July 7, 2005 <sup>(19)</sup>	200,000	*	200,000	-	*
Chris Meyer and Mary Rivet JTWROS	100,000	*	100,000	-	*
Hannahlu Ventures LP <sup>(20)</sup>	60,000	*	60,000	-	*
HRMG Inc. Profit Sharing 401K Plan Dtd 7104					
FBO James Moore	80,000	*	80,000	-	*
Joshua Movtady	40,000	*	40,000	-	*
Emanuel Nisan	24,000	*	24,000	-	*
BobCat Property Trust of Angel Fire, New Mexico <sup>(21)</sup>	1,350,000	2.35%	600,000	750,000	1.32%
Terence Oi and Patricia Meehan	115,000	*	40,000	75,000	*
John Pappajohn	1,000,000	1.74%	1,000,000	-	*
Stacy Parthenis Declaration of Trust 12/16/2003 <sup>(22)</sup>	100,000	*	100,000	-	*
Ralph L. Pawlick	100,000	*	100,000	-	*
V2M Life Sciences LP <sup>(23)</sup>	500,000	*	500,000	-	*
Lester Petracca	1,750,000	3.04%	1,000,000	750,000	1.32%
Ben Reuben	1,600,000	2.77%	1,600,000	-	*
Dominion Pension Plan Trustees (Jersey) Limited as Trustee of the Raffaele Ricci Pension Trust <sup>(24)</sup>	775,000	1.35%	400,000	375,000	*
Michael Rizzo	80,000	*	80,000	-	*
Rosalind Capital Partners L.P. <sup>(25)</sup>	520,873	*	325,600	195,273	*
Rosalind Master Fund L.P. <sup>(26)</sup>	284,127	*	174,400	109,727	*
Peter S Sabo	175,000	*	100,000	75,000	*
Sherif Sidhom Salib <sup>(27)</sup>	563,900	*	400,000	163,900	*
Albert L. Salvatico	100,000	*	100,000	-	*
Ari Sason	100,000	*	100,000	-	*
Magna Equities II, LLC <sup>(28)</sup>	100,000	*	100,000	-	*
David Schellhardt	1,000,000	1.74%	1,000,000	-	*
Stourbridge Investments LLC <sup>(29)</sup>	60,000	*	60,000	-	*
Joseph Schump	100,000	*	100,000	-	*

Stephen Shapiro	40,000	*	40,000	-	*
Bret Shupack	155,000	*	80,000	75,000	*
Mitchell Sivertson <sup>(30)</sup>	100,000	*	100,000	-	*
Milen Petkov Tzvetanov & Varta Tzvetanov	40,000	*	40,000	-	*
Francis Viglione	60,000	*	60,000	-	*
Arun Virick	40,000	*	40,000	-	*
Serenity Now LLC <sup>(31)</sup>	92,500	*	80,000	12,500	*
William S. Watts	60,000	*	60,000	-	*
Richard Weeks	100,000	*	100,000	-	*
Edward A. Weidenbener, Mary Lou Weidenbener	100,000	*	100,000	-	*
Erich J. Weidenbener	120,000	*	120,000	-	*
Donald C. Wheeler	100,000	*	100,000	-	*
Humboldt Radiology Med Grp 401(k) PSP fbo Donald C. Wheeler	140,000	*	140,000	-	*

(1) Share numbers include shares underlying warrants held by the selling stockholder.

(2) Assumes the sale of all shares offered pursuant to this prospectus.

(3) Richard Abbe is a natural person with voting and dispositive power over the shares held by Iroquois Capital Investment Group LLC and Iroquois Master Fund Ltd.

(4) Richard Abbe is a natural person with voting and dispositive power over the shares held by Iroquois Capital Investment Group LLC and Iroquois Master Fund Ltd.

(5) Laurence G. Allen is a natural person with voting and dispositive power over the shares held by ACP X, LP and LGA Investments Family Limited Partnership. Mr. Allen is affiliated with a FINRA member.

(6) Laurence G. Allen is a natural person with voting and dispositive power over the shares held by ACP X, LP and LGA Investments Family Limited Partnership. Mr. Allen is affiliated with a FINRA member.

(7) Arnold Balsam is a natural person with voting and dispositive power over the shares held by Balsam Capital Management.

(8) Vipinchandra Bhavsar is a trustee with voting and dispositive power over the shares held by the Vishanta Trust.

(9) Edwin Blitz is affiliated with a FINRA-member broker-dealer.

(10) Stephen Bolduc, as trustee of The First Riverside Trust, is a natural person with voting and dispositive power over the shares held by First Riverside Investors LP.

(11) Mary Kay Fagin and Kathleen E. Thomas are natural persons with voting and dispositive power over the shares held by MKF Holdings.

(12) Steven Freifeld is a broker-dealer. Mr. Freifeld is affiliated with a FINRA member.

(13) Stephen Harrington is a natural person with voting and dispositive power over the shares held by SPH Investments Inc. and Wiltain Investors.

- (14) Stephen Harrington is a natural person with voting and dispositive power over the shares held by SPH Investments Inc. and Wiltain Investors.
- (15) Kimberly Langston is a natural person with voting and dispositive power over the shares held by Rexford Capital LLC.
- (16) Michael Geoffrey Layman is affiliated with a FINRA-member broker-dealer.
- (17) Jennifer Ligeti, as manager of Ligi Realty, LLC, is a natural person with voting and dispositive power over the shares held by Ligi Realty Limited Partnership.
- (18) Jennifer Lorenzo is a natural person with voting and dispositive power over the shares held by GJG Life Sciences LLC. The listed shares do not include 550,000 shares or 75,000 warrants held by Jennifer Lorenzo individually.
- (19) Barbara McShane and Michael Patterson are co-trustees with voting and dispositive power over the shares held by the Patterson and McShane Trust dated July 7, 2005.
- (20) David Mickelson, as general partner of Hannahlu Management, Inc., is a natural person with voting and dispositive power over the shares held by Hannahlu Ventures, LP.
- (21) Theresa O'Brien is a trustee with voting and dispositive power over the shares held by the BobCat Property Trust of Angel Fire, New Mexico.
- (22) Stacy Parthenis Paros is a trustee with voting and dispositive power over the shares held by the Stacy Parthenis Declaration of Trust 12/16/2003. The listed shares do not include the 62,500 shares or 31,250 warrants beneficially owned by Stacy Parthenis Paros individually.
- (23) John Misha Petkevich is a natural person with voting and dispositive power over the shares held by V2M Life Sciences LP.
- (24) Dominion Pension Plan Trustees (Jersey) Limited is a trustee with voting and dispositive power over the shares held by the Raffaele Ricci Pension Trust. Stacy Withe and Anthony Smith are control persons of Dominion Pension Plan Trustees (Jersey) Limited.
- (25) Steven Salamon is a natural person with voting and dispositive power over the shares held by Rosalind Capital Partners L.P. and Rosalind Master Fund L.P.
- (26) Steven Salamon is a natural person with voting and dispositive power over the shares held by Rosalind Capital Partners L.P. and Rosalind Master Fund L.P.
- (27) Share numbers include shares of common stock that are registered in the name of Mr. Salib's individual retirement account.
- (28) Joshua Sason is a natural person with voting and dispositive power over the shares held by Magna Equities II.
- (29) Steven Schnipper is a natural person with voting and dispositive power over the shares held by Stourbridge Investments LLC.
- (30) Mitchell Sivertson is affiliated with a FINRA-member broker-dealer.
- (31) Daniel Warsh is a natural person with voting and dispositive power over the shares held by Serenity Now LLC.

## PLAN OF DISTRIBUTION

The selling stockholders, which as used herein includes donees, pledgees, transferees or other successors-in-interest selling shares of common stock or interests in shares of common stock received after the date of this prospectus from a selling stockholder as a gift, pledge, partnership distribution or other transfer, may, from time to time, sell, transfer or otherwise dispose of any or all of their shares of common stock or interests in shares of common stock on any stock exchange, market or trading facility on which the shares are traded or in private transactions.

The selling stockholders may use any one or more of the following methods when disposing of shares or interests therein:

- ordinary brokerage transactions and transactions in which the broker-dealer solicits purchasers;
- block trades in which the broker-dealer will attempt to sell the shares as agent, but may position and resell a portion of the block as principal to facilitate the transaction;
- purchases by a broker-dealer as principal and resale by the broker-dealer for its account;
- privately negotiated transactions;
- short sales;
- through the writing or settlement of options or other hedging transactions, whether through an options exchange or otherwise;
- broker-dealers may agree with the selling stockholders to sell a specified number of such shares at a stipulated price per share;
- a combination of any such methods of sale; and
- any other method permitted pursuant to applicable law.

The selling stockholders may, from time to time, pledge or grant a security interest in some or all of the shares of common stock owned by them and, if they default in the performance of their secured obligations, the pledgees or secured parties may offer and sell the shares of common stock, from time to time, under this prospectus, or under an amendment to this prospectus under Rule 424(b)(3) or other applicable provision of the Securities Act amending the list of selling stockholders to include the pledgee, transferee or other successors in interest as selling stockholders under this prospectus. The selling stockholders also may transfer the shares of common stock in other circumstances, in which case the transferees, pledgees or other successors in interest will be the selling beneficial owners for purposes of this prospectus; provided, however, that prior to any such transfer the following information (or such other information as may be required by the federal securities laws from time to time) with respect to each such selling beneficial owner must be added to the prospectus by way of a prospectus supplement or post-effective amendment, as appropriate: (1) the name of the selling beneficial owner; (2) any material relationship the selling beneficial owner has had within the past three years with us or any of our predecessors or affiliates; (3) the amount of securities of the class owned by such beneficial owner before the offering; (4) the amount to be offered for the beneficial owner's account; and (5) the amount and (if one percent or more) the percentage of the class to be owned by such beneficial owner after the offering is complete.

In connection with the sale of our common stock or interests therein, the selling stockholders may enter into hedging transactions with broker-dealers or other financial institutions, which may in turn engage in short sales of the common stock in the course of hedging the positions they assume. The selling stockholders may also sell shares of our common stock short and deliver these securities to close out their short positions, or loan or pledge the common stock to broker-dealers that in turn may sell these securities. The selling stockholders may also enter into option or other transactions with broker-dealers or other financial institutions or the creation of one or more derivative securities which require the delivery to such broker-dealer or other financial institution of shares offered by this prospectus, which shares such broker-dealer or other financial institution may resell pursuant to this prospectus (as supplemented or amended to reflect such transaction).

The aggregate proceeds to the selling stockholders from the sale of the common stock offered by them will be the purchase price of the common stock less discounts or commissions, if any. Each of the selling stockholders reserves the right to accept and, together with their agents from time to time, to reject, in whole or in part, any proposed purchase of common stock to be made directly or through agents. We will not receive any of the proceeds from this offering, provided, however, we will receive proceeds from the exercise of the warrants held by certain investors.

The selling stockholders also may resell all or a portion of the shares in open market transactions in reliance upon Rule 144 under the Securities Act of 1933, provided that they meet the criteria and conform to the requirements of that rule.

The selling stockholders and any underwriters, broker-dealers or agents, or their affiliates, that participate in the sale of the common stock or interests therein are “underwriters” within the meaning of Section 2(11) of the Securities Act. Any discounts, commissions, concessions or profit they earn on any resale of the shares may be underwriting discounts and commissions under the Securities Act. Selling stockholders who are “underwriters” within the meaning of Section 2(11) of the Securities Act will be subject to the prospectus delivery requirements of the Securities Act.

To the extent required, the shares of our common stock to be sold, the names of the selling stockholders, the respective purchase prices and public offering prices, the names of any agents, dealer or underwriter, any applicable commissions or discounts with respect to a particular offer will be set forth in an accompanying prospectus supplement or, if appropriate, a post-effective amendment to the registration statement that includes this prospectus.

The maximum amount of compensation to be received by any FINRA member or independent broker-dealer for the sale of any securities registered under this prospectus will not be greater than 8.0% of the gross proceeds from the sale of such securities.

In order to comply with the securities laws of some states, if applicable, the common stock may be sold in these jurisdictions only through registered or licensed brokers or dealers. In addition, in some states the common stock may not be sold unless it has been registered or qualified for sale or an exemption from registration or qualification requirements is available and is complied with.

We have advised the selling stockholders that the anti-manipulation rules of Regulation M under the Exchange Act may apply to sales of shares in the market and to the activities of the selling stockholders and their affiliates. In addition, we will make copies of this prospectus (as it may be supplemented or amended from time to time) available to the selling stockholders for the purpose of satisfying the prospectus delivery requirements of the Securities Act. The selling stockholders may indemnify any broker-dealer that participates in transactions involving the sale of the shares against certain liabilities, including liabilities arising under the Securities Act.



## LEGAL MATTERS

The validity of the securities offered in this prospectus is being passed upon for us by Lowenstein Sandler LLP, New York, New York. Partners of the firm beneficially own an aggregate of 100,000 shares, warrants to purchase 25,000 shares of our common stock with an exercise price of \$2.00 per share, and warrants to purchase 50,000 shares of our common stock with an exercise price of \$0.75 per share.

## EXPERTS

The consolidated financial statements of Matinas BioPharma Holdings, Inc. incorporated into this prospectus and related registration statement by reference to the Annual Report on Form 10-K for the year ended December 31, 2014 have been audited by EisnerAmper LLP, an independent registered public accounting firm, as set forth in their report (which includes an explanatory paragraph relating to the Company's ability to continue as a going concern as discussed in Note B to the financial statements) thereon and have been so incorporated in reliance upon such report given on the authority of such firm as experts in accounting and auditing.

## WHERE YOU CAN FIND ADDITIONAL INFORMATION

We have filed with the SEC a registration statement on Form S-1 under the Securities Act, with respect to the common stock offered by this prospectus. This prospectus, which is part of the registration statement, omits certain information, exhibits, schedules and undertakings set forth in the registration statement and the exhibits and schedules filed therewith. For further information pertaining to us and our common stock, reference is made to the registration statement and the exhibits and schedules to the registration statement. Statements contained in this prospectus as to the contents or provisions of any documents referred to in this prospectus are not necessarily complete, and in each instance where a copy of such document has been filed as an exhibit to the registration statement, reference is made to the exhibit for a more complete description of the matters involved.

You may read all or any portion of the registration statement and the exhibits and schedules filed therewith without charge at the office of the SEC at the Public Reference Room, 100 F Street, N.E., Room 1580 Washington, D.C. 20549. Copies of the registration statement may be obtained from such office. Please call the SEC at 1-800-SEC-0330 for further information about the Public Reference Room. In addition, registration statements and certain other filings made with the SEC electronically are publicly available through the SEC's web site at <http://www.sec.gov>. The registration statement, including all exhibits and amendments to the registration statement, has been filed electronically with the SEC.

Contemporaneously with the effectiveness of the registration statement of which this prospectus is a part, we will become subject to the information and periodic reporting requirements of the Exchange Act and, accordingly, will file annual reports containing financial statements audited by an independent public accounting firm, quarterly reports containing unaudited financial data, current reports, and other information with the Securities and Exchange Commission. You will be able to inspect and copy such periodic reports, and other information at the SEC's public reference room, and from the web site of the SEC referred to above.

## DOCUMENTS INCORPORATED BY REFERENCE

The SEC allows us to "incorporate by reference" information into this document. This means that we can disclose important information to you by referring you to another document filed separately with the SEC. The information incorporated by reference is considered to be a part of this document, except for any information superseded by information that is included directly in this document or incorporated by reference subsequent to the date of this document.

This prospectus incorporates by reference the documents listed below:

- our Annual Report on Form 10-K for the year ended December 31, 2014, filed with the SEC on March 31, 2015;
- our Quarterly Report on Form 10-Q for the period ended March 31, 2015, filed with the SEC on May 15, 2015; and
- our Current Reports on Form 8-K filed with the SEC on January 30, 2015, February 2, 2015, March 18, 2015, March 19, 2015, April 6, 2015 and April 10, 2015 (other than any portions thereof deemed furnished and not filed).

You should rely only on the information incorporated by reference or provided in this prospectus. We have not authorized anyone to provide you with different information. You should not assume that the information in this prospectus is accurate as of any date other than the date on the front of this document. Any statement contained in a document incorporated in this prospectus will be deemed to be modified or superseded for purposes of this prospectus to the extent that a statement contained in this prospectus modifies or supersedes that statement. Any statement that is modified or superseded will not constitute a part of this prospectus, except as modified or superseded.

You may request a copy of these filings, at no cost, by writing or calling us at the following:

Matinas BioPharma Holdings, Inc.  
1545 Route 206 South  
Suite 302  
Bedminster, NJ 07921 US  
Attn: Corporate Secretary

Copies of the documents incorporated by reference may also be found on our website at [www.matinasbiopharma.com](http://www.matinasbiopharma.com). Except with respect to the documents expressly incorporated by reference above which are accessible at our website, the information contained on our website is not a part of, and should not be construed as being incorporated by reference into, this prospectus.

**MATINAS BIOPHARMA HOLDINGS, INC.**

**33,700,000 Shares  
common stock**

**PROSPECTUS**

**[        ], 2015**

## PART II

### INFORMATION NOT REQUIRED IN PROSPECTUS

#### ITEM 13. OTHER EXPENSES OF ISSUANCE AND DISTRIBUTION

Our estimated expenses in connection with the issuance and distribution of the securities being registered are:

SEC Registration Fee	\$	4,954
Accounting Fees and Expenses	\$	110,000
Legal Fees and Expenses	\$	50,000
Miscellaneous Fees and Expenses	\$	15,046
<b>Total</b>	<b>\$</b>	<b>180,000</b>

#### ITEM 14. INDEMNIFICATION OF OFFICERS AND DIRECTORS

Section 145 of the Delaware General Corporation Law (the “DGCL”) provides, in general, that a corporation incorporated under the laws of the State of Delaware, as we are, may indemnify any person who was or is a party or is threatened to be made a party to any threatened, pending or completed action, suit or proceeding (other than a derivative action by or in the right of the corporation) by reason of the fact that such person is or was a director, officer, employee or agent of the corporation, or is or was serving at the request of the corporation as a director, officer, employee or agent of another enterprise, against expenses (including attorneys’ fees), judgments, fines and amounts paid in settlement actually and reasonably incurred by such person in connection with such action, suit or proceeding if such person acted in good faith and in a manner such person reasonably believed to be in or not opposed to the best interests of the corporation and, with respect to any criminal action or proceeding, had no reasonable cause to believe such person’s conduct was unlawful. In the case of a derivative action, a Delaware corporation may indemnify any such person against expenses (including attorneys’ fees) actually and reasonably incurred by such person in connection with the defense or settlement of such action or suit if such person acted in good faith and in a manner such person reasonably believed to be in or not opposed to the best interests of the corporation, except that no indemnification will be made in respect of any claim, issue or matter as to which such person will have been adjudged to be liable to the corporation unless and only to the extent that the Court of Chancery of the State of Delaware or any other court in which such action was brought determines such person is fairly and reasonably entitled to indemnity for such expenses.

Our certificate of incorporation and bylaws provide that we will indemnify our directors, officers, employees and agents to the extent and in the manner permitted by the provisions of the DGCL, as amended from time to time, subject to any permissible expansion or limitation of such indemnification, as may be set forth in any stockholders’ or directors’ resolution or by contract. In addition, we plan to enter into director and officer indemnification agreements with each of our directors and officers that provide, among other things, for the indemnification to the fullest extent permitted or required by Delaware law, provided that no indemnitee will be entitled to indemnification in connection with any claim initiated by the indemnitee against us or our directors or officers unless we join or consent to the initiation of the claim, or the purchase and sale of securities by the indemnitee in violation of Section 16(b) of the Securities Exchange Act of 1934, as amended.

Any repeal or modification of these provisions approved by our stockholders will be prospective only and will not adversely affect any limitation on the liability of any of our directors or officers existing as of the time of such repeal or modification.

In addition, we have entered into indemnification agreements with each of our current directors and executive officers. These agreements will require us to indemnify these individuals to the fullest extent permitted under Delaware law against liabilities that may arise by reason of their service to us and to advance expenses incurred as a result of any proceeding against them as to which they could be indemnified. We also intend to enter into indemnification agreements with our future directors and executive officers.

We are also permitted to apply for insurance on behalf of any director, officer, employee or other agent for liability arising out of his actions, whether or not the DGCL would permit indemnification.

## **ITEM 15. RECENT SALES OF UNREGISTERED SECURITIES**

Since January 1, 2012, the Company made sales of the following unregistered securities:

### ***Original Issuances of Stock and Warrants***

#### *Formation of Holdings*

In connection with our formation in June 2013, we sold an aggregate of 7,500,000 shares of our common stock and 3,750,000 warrants to purchase 3,750,000 shares of our common stock, for an aggregate of \$375,000 (\$0.10 for two shares and one warrant), to 31 accredited investors.

#### *2013 Private Placement*

In July and August 2013, we sold an aggregate of 15,000,000 shares of our common stock and warrants to purchase an aggregate of 7,500,000 shares of our common stock with an exercise price of \$2.00 per share to 119 accredited investors for an aggregate purchase price of \$15,000,000.

In connection with the 2013 Private Placement, we issued (x) a warrant to the Placement Agent to purchase 750,000 shares of our common stock with an exercise price of \$2.00 per share and (y) a warrant to the Placement Agent to purchase 1,500,000 shares of our common stock with an exercise price of \$1.00 per share.

#### *2013 Merger Transaction*

On July 30, 2013, pursuant to the terms of the Merger Agreement between Matinas BioPharma, Holdings and Merger Sub, a wholly owned subsidiary of Holdings, the Merger Sub merged with and into Matinas BioPharma and Matinas BioPharma became a wholly owned subsidiary of Holdings. In connection with the merger, we issued an aggregate of 9,000,000 shares of our common stock and warrants to purchase 1,000,000 shares of our common stock at an exercise price of \$2.00 per share to 15 stockholders of Matinas BioPharma.

#### *Warrant Private Placement*

On July 30, 2013, we sold 500,000 warrants to purchase 500,000 shares of our common stock at an exercise price of \$2.00 per share to one accredited investor for a purchase price of \$0.04 per warrant.

#### *Consulting Services*

Since January 1, 2012, we issued an aggregate of 792,650 shares of restricted common stock to 5 consultants as compensation for certain consulting services.

#### *Aquarius Merger Transaction*

On January 29, 2015, pursuant to the terms of the Agreement and Plan of Merger by and among Matinas Biopharma Holdings, Inc., Aquarius Biotechnologies, Inc., Saffron Merger Sub, Inc., a wholly-owned subsidiary of ours and J. Carl Craft, as the stockholder representative, the Merger Sub merged with and into Aquarius, with Aquarius surviving the merger as a wholly-owned subsidiary of ours. In connection with the merger, we issued an aggregate of 4,608,020 shares of our common stock to 10 former stockholders of Aquarius.

#### *2015 Private Placement*

In March and April 2015, we sold an aggregate of 20,000,000 units for an aggregate purchase price of \$10,000,000 to 122 accredited investors. Each unit consisted of one share of our common stock and warrant to purchase one share of our common stock with an exercise price of \$0.75 per share.

In connection with the 2015 Private Placement, we issued to the Placement Agent (i) warrants to purchase an aggregate of 2,000,000 shares of our common stock with an exercise price of \$0.50 per share and (ii) warrants to purchase an aggregate of 2,000,000 shares of our common stock with an exercise price of \$0.75 per share.

### *Stock Options*

Since January 1, 2012, we granted stock options under its 2013 Equity Compensation Plan to purchase an aggregate of 6,768,000 at a weighted average exercise price of \$0.94 per share.

### *Securities Act Exemptions*

We deemed the offers, sales and issuances of the securities described above under “—Original Issuances of Stock and Warrants” to be exempt from registration under the Securities Act in reliance on Section 4(a)(2) of the Securities Act, including Regulation D and Rule 506 promulgated thereunder, relative to transactions by an issuer not involving a public offering. All purchasers of securities in transactions exempt from registration pursuant to Regulation D represented to us that they were accredited investors and were acquiring the shares for investment purposes only and not with a view to, or for sale in connection with, any distribution thereof and that they could bear the risks of the investment and could hold the securities for an indefinite period of time. The purchasers received written disclosures that the securities had not been registered under the Securities Act and that any resale must be made pursuant to a registration statement or an available exemption from such registration.

We deemed the grants of stock options and issuances of common stock upon exercise of such options described above under “—Stock Options” to be exempt from registration under the Securities Act in reliance on Rule 701 of the Securities Act as offers and sales of securities under compensatory benefit plans and contracts relating to compensation in compliance with Rule 701. Each of the recipients of securities in any transaction exempt from registration either received or had adequate access, through employment, business or other relationships, to information about us.

All certificates representing the securities issued in the transactions described in this Item 15 included appropriate legends setting forth that the securities had not been offered or sold pursuant to a registration statement and describing the applicable restrictions on transfer of the securities. There were no underwriters employed in connection with any of the transactions set forth in this Item 15.

## **ITEM 16. EXHIBITS AND FINANCIAL STATEMENT SCHEDULES**

<b>Exhibit No.</b>	<b>Description</b>
2.1	Merger Agreement, dated July 11, 2013, by and among the Company, Matinas Merger Sub, Inc., and Matinas BioPharma, Inc. (incorporated by reference to Exhibit 2.1 to Amendment No. 1 to the Company’s Registration Statement on Form S-1 filed with the SEC on February 7, 2014).
2.2	Agreement and Plan of Merger (the “Merger Agreement”) with Aquarius Biotechnologies, Inc., a Delaware corporation (“Aquarius”), Saffron Merger Sub, Inc., a Delaware corporation and a wholly-owned subsidiary of the Company (“Merger Sub”) and J. Carl Craft, as the stockholder representative (incorporated herein by reference to Exhibit 2.1 to the Company’s Current Report on Form 8-K filed with the SEC on January 30, 2015).
3.1	Certificate of Incorporation (incorporated by reference to Exhibit 3.1 to Amendment No. 1 to the Company’s Registration Statement on Form S-1 filed with the SEC on February 7, 2014).
3.2	Bylaws (incorporated by reference to Exhibit 3.2 to Amendment No. 1 to the Company’s Registration Statement on Form S-1 filed with the SEC on February 7, 2014).
4.1	Form of Warrant (incorporated by reference to Exhibit 4.1 to Amendment No. 1 to the Company’s Registration Statement on Form S-1 filed with the SEC on February 7, 2014).
4.2	Form of Placement Agent Warrant (incorporated by reference to Exhibit 4.2 to Amendment No. 1 to the Company’s Registration Statement on Form S-1 filed with the SEC on February 7, 2014).
4.3	Registration Rights Agreement dated July 30, 2013 (incorporated by reference to Exhibit 4.3 to Amendment No. 1 to the Company’s Registration Statement on Form S-1 filed with the SEC on February 7, 2014).
4.4	Form of 2015 Investor Warrant. (incorporated herein by reference to Exhibit 4.4 of the Company’s Registration Statement on Form S-1 (Reg. No. 333-193455), filed with the SEC on April 17, 2015).
4.5	Form of 2015 Placement Agent Warrant. (incorporated herein by reference to Exhibit 4.5 of the Company’s Registration Statement on Form S-1 (Reg. No. 333-193455), filed with the SEC on April 17, 2015).
4.6	Registration Rights Agreement dated March 31, 2015 between the Company and the investors named therein (incorporated herein by reference to Exhibit 4.6 of the Company’s Registration Statement on Form S-1 (Reg. No. 333-193455), filed with the SEC on April 17, 2015).
5.1	Opinion of Lowenstein Sandler LLP*
10.1	Placement Agency Agreement, dated July 11, 2013, between the Company and Aegis Capital Corp. (incorporated by reference to Exhibit 10.1 to Amendment No. 1 to the Company’s Registration Statement on Form S-1 filed with the SEC on

February 7, 2014).

- 10.2 Consulting Agreement, dated July 30, 2013, between the Company and Aegis Capital Corp. (incorporated by reference to Exhibit 10.2 to Amendment No. 1 to the Company's Registration Statement on Form S-1 filed with the SEC on February 7, 2014).
- 10.3 Form of Subscription Agreement for the Company's 2013 private placement (incorporated by reference to Exhibit 10.3 to Amendment No. 1 to the Company's Registration Statement on Form S-1 filed with the SEC on February 7, 2014).
- 10.4 Form of Subscription Agreement for the Company's 2013 warrant private placement (incorporated by reference to Exhibit 10.4 to Amendment No. 1 to the Company's Registration Statement on Form S-1 filed with the SEC on February 7, 2014).
- 10.5 Voting Agreement, dated July 30, 2013, by and among the Company and the stockholders named therein. (incorporated by reference to Exhibit 10.5 to Amendment No. 1 to the Company's Registration Statement on Form S-1 filed with the SEC on February 7, 2014).
- 10.6† Matinas BioPharma Holdings, Inc. Amended and Restated 2013 Equity Compensation Plan (incorporated herein by reference to Exhibit 10.6 to the Company's Annual Report on Form 10-K for the year ended December 31, 2014).
- 10.7† Form of Incentive Stock Option Agreement (incorporated by reference to Exhibit 10.7 to Amendment No. 1 to the Company's Registration Statement on Form S-1 filed with the SEC on February 7, 2014).
- 10.8† Form of Non-Qualified Stock Option Agreement (incorporated by reference to Exhibit 10.8 to Amendment No. 1 to the Company's Registration Statement on Form S-1 filed with the SEC on February 7, 2014).
- 10.9† Employment Agreement, dated July 30, 2013, between the Company and Roelof Rongen (incorporated by reference to Exhibit 10.9 to Amendment No. 1 to the Company's Registration Statement on Form S-1 filed with the SEC on February 7, 2014).
- 10.10† Employment Agreement, dated July 30, 2013, between the Company and George Bobotas (incorporated by reference to Exhibit 10.10 to Amendment No. 1 to the Company's Registration Statement on Form S-1 filed with the SEC on February 7, 2014).
- 10.11† Employment Agreement, dated July 30, 2013, between the Company and Abdel A. Fawzy. (incorporated by reference to Exhibit 10.11 to Amendment No. 1 to the Company's Registration Statement on Form S-1 filed with the SEC on February 7, 2014).
- 10.12† Employment Agreement effective as of October 4, 2013 between the Company and Jerome Jabbour (incorporated by reference to Exhibit 10.12 to Amendment No. 1 to the Company's Registration Statement on Form S-1 filed with the SEC on February 7, 2014).
- 10.13† Offer Letter, dated October 31, 2013, between the Company and Gary Gaglione (incorporated by reference to Exhibit 10.13 to Amendment No. 1 to the Company's Registration Statement on Form S-1 filed with the SEC on February 7, 2014).
- 10.14† Form of Indemnification Agreement (incorporated by reference to Exhibit 10.14 to Amendment No. 1 to the Company's Registration Statement on Form S-1 filed with the SEC on February 7, 2014).
- 10.15 Form of Securities Purchase Agreement (Warrants) for the Company's formation private placement (incorporated by reference to Exhibit 10.15 to Amendment No. 1 to the Company's Registration Statement on Form S-1 filed with the SEC on February 7, 2014).
- 10.16 Form of Securities Purchase Agreement (Units) for the Company's formation private placement (incorporated by reference to Exhibit 10.16 to Amendment No. 1 to the Company's Registration Statement on Form S-1 filed with the SEC on February 7, 2014).
- 10.17 Lease, effective as of November 4, 2013, by and between the company and A-K Bedminster Associates, L.P. (incorporated by reference to Exhibit 10.17 to Amendment No. 1 to the Company's Registration Statement on Form S-1 filed with the SEC on February 7, 2014).
- 10.18+ Amended and Restated Exclusive License Agreement dated as of January 29, 2015, by and between Rutgers, the State University of New Jersey and Aquarius Biotechnologies, Inc. (incorporated herein by reference to Exhibit 10.18 to the Company's Annual Report on Form 10-K for the year ended December 31, 2014).
- 10.19† Employment Agreement, dated March 12, 2015, between Matinas Biopharma Holdings, Inc. and Douglas F. Kling. (incorporated herein by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed with the SEC on March 19, 2015).



- 10.20 Placement Agency Agreement dated March 19, 2015 between the Company and Aegis Capital Corp. (incorporated herein by reference to Exhibit 10.20 of the Company's Registration Statement on Form S-1 (Reg. No. 333-193455), filed with the SEC on April 17, 2015).
- 10.21 Form of Subscription Agreement for the Company's 2015 private placement. (incorporated herein by reference to Exhibit 10.21 of the Company's Registration Statement on Form S-1 (Reg. No. 333-193455), filed with the SEC on April 17, 2015).
- 21.1 List of Subsidiaries of the Company\*
- 23.1 Consent of EisnerAmper LLP\*
- 23.2 Consent of Lowenstein Sandler LLP (included in Exhibit 5.1)\*
- 24.1 Power of Attorney (included on the signature page of the Registration Statement)\*

\* Filed herewith.

+ Confidential treatment has been obtained for certain provisions of this Exhibit pursuant to Rule 24b-2 promulgated under the Securities Exchange Act of 1934, as amended.

† Indicates a management contract or compensation plan, contract or arrangement.

## ITEM 17. UNDERTAKINGS

The undersigned registrant hereby undertakes:

- (1) To file, during any period in which offers or sales are being made, a post-effective amendment to this registration statement:
  - (i) To include any prospectus required by Section 10(a)(3) of the Securities Act of 1933;
  - (ii) To reflect in the prospectus any facts or events arising after the effective date of the registration statement (or the most recent post-effective amendment thereof) which, individually or in the aggregate, represent a fundamental change in the information set forth in the registration statement. Notwithstanding the foregoing, any increase or decrease in volume of securities offered (if the total dollar value of securities offered would not exceed that which was registered) and any deviation from the low or high end of the estimated maximum offering range may be reflected in the form of prospectus filed with the Securities and Exchange Commission pursuant to Rule 424(b) if, in the aggregate, the changes in volume and price represent no more than a 20% change in the maximum aggregate offering price set forth in the "Calculation of Registration Fee" table in the effective registration statement; and
  - (iii) To include any material information with respect to the plan of distribution not previously disclosed in the registration statement or any material change to such information in the registration statement;
- (2) That, for the purpose of determining any liability under the Securities Act of 1933, each such post-effective amendment shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.
- (3) To remove from registration by means of a post-effective amendment any of the securities being registered which remain unsold at the termination of the offering.
- (4) That, for the purpose of determining liability under the Securities Act of 1933 to any purchaser, each prospectus filed pursuant to Rule 424(b) as part of a registration statement relating to an offering, other than registration statements relying on Rule 430B or other than prospectuses filed in reliance on Rule 430A (§230.430A of this chapter), shall be deemed to be part of and included in the registration statement as of the date it is first used after effectiveness. Provided, however, that no statement made in a registration statement or prospectus that is part of the registration statement or made in a document incorporated or deemed incorporated by reference into the registration statement or prospectus that is part of the registration statement will, as to a purchaser with a time of contract of sale prior to such first use, supersede or modify any statement that was made in the registration statement or prospectus that was part of the registration statement or made in any such document immediately prior to such date of first use.

Insofar as indemnification for liabilities arising under the Securities Act of 1933 may be permitted to directors, officers and controlling persons of the registrant pursuant to the foregoing provisions, or otherwise, the registrant has been advised that in the opinion of the Securities and Exchange Commission such indemnification is against public policy as expressed in the Securities Act of 1933 and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the registrant of expenses incurred or paid by a director, officer or controlling person of the registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Securities Act of 1933 and will be governed by the final adjudication of such issue.

## SIGNATURES

Pursuant to the requirements of the Securities Act, the registrant has duly caused this registration statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the city of Bedminster, State of New Jersey on June 9, 2015.

### MATINAS BIOPHARMA HOLDINGS, INC.

By: /s/ Roelof Rongen

Name: Roelof Rongen

Title: President & Chief Executive Officer

By: /s/ Gary Gaglione

Name: Gary Gaglione

Title: Acting Chief Financial Officer

KNOW ALL MEN BY THESE PRESENTS, that we, the undersigned officers and directors Matinas BioPharma Holdings, Inc., a Delaware corporation (the "Company"), do hereby constitute and appoint Roelof Rongen and Jerome Jabbour, and each of them, as his or her true and lawful attorney-in-fact and agent, with full power of substitution and re-substitution, for him and in his name, place, and stead, in any and all capacities, to sign any and all amendments (including post-effective amendments, exhibits thereto and other documents in connection therewith) to this Registration Statement and any subsequent registration statement filed by the registrant pursuant to Rule 462(b) of the Securities Act of 1933, as amended, which relates to this Registration Statement, and to file the same, with all exhibits thereto, and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorney-in-fact and agent full power and authority to do and perform each and every act and thing requisite and necessary to be done in connection therewith, as fully to all intents and purposes as he might or could do in person, hereby ratifying and confirming all that said attorney-in-fact and agent, or his substitute or substitutes, may lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Act, this registration statement has been signed below by the following persons in the capacities and on the dates indicated.

<u>Person</u>	<u>Capacity</u>	<u>Date</u>
<u>/s/ Roelof Rongen</u> Roelof Rongen	President, Chief Executive Officer and Director (Principal Executive Officer)	June 9, 2015
<u>/s/ Gary Gaglione</u> Gary Gaglione	Acting Chief Financial Officer (Principal Financial and Accounting Officer)	June 9, 2015
<u>/s/ Herbert Conrad</u> Herbert Conrad	Chairman of the Board	June 9, 2015
<u>/s/ Stefano Ferrari</u> Stefano Ferrari	Director	June 9, 2015
<u>/s/ James S. Scibetta</u> James S. Scibetta	Director	June 9, 2015
<u>/s/ Adam K. Stern</u> Adam K. Stern	Director	June 9, 2015

June 9, 2015  
Matinas BioPharma Holdings, Inc.  
1545 Route 206 South, Suite 302  
Bedminster, NJ 07921

**Re: Registration Statement on Form S-1**

Ladies and Gentlemen:

We have served as special counsel in connection with the preparation of your Registration Statement on Form S-1 (the "Registration Statement") filed with the Securities and Exchange Commission under the Securities Act of 1933, as amended (the "Act"), relating to the registration for resale under the Act by certain selling stockholders (the "Selling Stockholders") of an aggregate of 33,700,000 shares of common stock, par value \$0.0001 per share ("Common Stock"), of Matinas BioPharma Holdings, Inc., a Delaware corporation (the "Company"), that have been issued (such shares of Common Stock that have been issued, the "Shares") or that are issuable upon exercise of outstanding warrants (the "Warrants") issued by the Company (such shares of Common Stock issuable upon the exercise of the Warrants, the "Warrant Shares").

We have examined such corporate records, certificates and other documents and such questions of law as we have considered necessary and appropriate for the purposes of this opinion.

Upon the basis of such examination, we advise you that, in our opinion, (i) the Shares to be sold by the Selling Stockholders pursuant to the Registration Statement have been duly authorized and are validly issued, fully paid and non-assessable, and (ii) the Warrant Shares to be sold by the Selling Stockholders pursuant to the Registration Statement have been duly authorized and, when issued in accordance with the terms and conditions of the respective Warrants (including the due payment of any exercise price therefore specified in the respective Warrants), will be validly issued, fully paid and non-assessable.

Our opinion herein is expressed solely with respect to the federal laws of the United States and the General Corporation Law of the State of Delaware. Our opinion is based on these laws as in effect on the date hereof.

We hereby consent to the filing of this opinion as an exhibit to the Registration Statement and to the references to this firm in the Registration Statement. In giving such consent, we do not thereby admit that we are in the category of persons whose consent is required under Section 7 of the Act.

Very truly yours,

/s/ LOWENSTEIN SANDLER LLP

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**Subsidiaries of Matinas BioPharma Holdings, Inc.**

Name	State of Incorporation
Matinas BioPharma, Inc.	Delaware
Aquarius Biotechnologies, Inc.	Delaware

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**CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM**

We consent to the incorporation by reference in this Registration Statement on Form S-1 of Matinas BioPharma Holdings, Inc. to be filed on or about June 9, 2015 of our report dated March 30, 2015, on our audits of the consolidated financial statements as of December 31, 2014 and 2013 and for each of the years in the two-year period ended December 31, 2014, which report was included in the Annual Report on Form 10-K filed on March 31, 2015. Our report includes an explanatory paragraph about the existence of substantial doubt concerning the Company's ability to continue as a going concern. We also consent to the reference to our firm under the caption "Experts" in the Registration Statement on Form S-1.

/s/ EISNERAMPER LLP  
Iselin, New Jersey  
June 9, 2015

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