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

DIVISION OF
CORPORATION FINANCE

October 31, 2013

Via E-mail
Roelof Rongen
Chief Executive Officer
Matinas BioPharma Holdings, Inc.
915 Klosterman Road East
Tarpon Springs, FL 34689

Re: Matinas BioPharma Holdings, Inc.
Confidential Draft Registration Statement on Form S-1
Submitted October 4, 2013
CIK No. 0001582554

Dear Mr. Rongen:

We have reviewed your confidential draft registration statement and have the following comments. In some of our comments, we may ask you to provide us with information so we may better understand your disclosure.

Please respond to this letter by providing the requested information and either submitting an amended confidential draft registration statement or publicly filing your registration statement on EDGAR. If you do not believe our comments apply to your facts and circumstances or do not believe an amendment is appropriate, please tell us why in your response.

After reviewing the information you provide in response to these comments and your amended confidential draft registration statement or filed registration statement, we may have additional comments.

General

1. Please submit all outstanding exhibits as soon as practicable. We may have further comments upon examination of these exhibits.

2. Please provide the financial statements of the registrant, Matinas BioPharma, Holdings, Inc. Refer to Rules 3-01 and 3-02 of Regulation S-X.

3. Provide us your timeline of when you first began to discuss the possibility of going public and the actions taken to advance your registration statement.

Table of Contents

4. Please note that it is not appropriate to state or imply that you do not have liability for the statements in your registration statement. Your statement at the end of the table of contents that you have not independently verified market and industry data obtained from outside sources could imply that you are not taking liability for the statistical and other industry and market data included in your registration statement. In order to eliminate any inference that you are not liable for all of the information in your registration statement, please delete this statement or include a statement specifically accepting liability for these statements.

Prospectus Summary, pages 2-3

5. We note your references to the "proven therapeutic benefits of omega-3 fatty acids" and your statement that you believe your product "will likely improve clinical outcomes in reducing adverse cardiovascular events." We note similar statements in your business section on pages 45-47, as well as the statement that "[t]he cardioprotective efficacy of omega-3 fatty acids is well established." With a view toward a balanced prospectus summary, please expand to discuss whether there is conclusive evidence that omega-3 fatty acids actually reduce the risk of cardiovascular disease. In this regard, we note the FDA's release from September 8, 2004 announcing a qualified health claim indicating "supportive but not conclusive research show[ing] that consumption of EPA and DHA omega-3 fatty acids may reduce the risk of coronary heart disease."

Formation of Holdings, page 4

6. In connection with your formation in June 2013, you issued 7.5 million shares of common stock and warrants to purchase an additional 3.75 million shares of common stock. Please disclose the terms governing the Formation warrants, including the exercise price.

Risk Factors
"MAT9001 may infringe the intellectual property rights of others…," page 23

7. If you plan to pursue approval of MAT9001 under Section 505(b)(2), please expand this risk factor to disclose the specific risks related to your competitors' ability to block or delay approval of your product candidate under the 505(b)(2) approval pathway.

Risks Related to Our Common Stock, page 26

8. Please include a separate risk factor that describes the risk that if a market for your common stock should develop, the registration for resale of a significant portion of your outstanding shares in this registration statement may have a depressive effect on the stock price.

Application of Critical Accounting Policies
Share-Based Compensation, page 40

9. Please update your discussion to include a table that discloses the terms of all equity issuances, including options, warrants, common stock, and preferred stock through the date of effectiveness. In this regard, we note on page 77 that you had 15,250,000 warrants outstanding as of September 30, 2013 and 1,985,000 options as of October 4, 2013. In addition, you have issued a significant number of common and preferred stock in 2013. In addition, please address the following:
    - Provide in the filing an analysis of the valuation method and assumptions used to determine the fair value of your common stock that was used to value the equity issuances.
    - Clarify if the valuation was done contemporaneously or retrospectively and if it was done by a related party.
    - Discuss why the fair value of your common stock changed from each grant date.
    - Discuss each significant factor contributing to the difference between the fair value as of the date of grant to the estimated IPO price.
    - Please note that we are deferring a final evaluation of stock compensation and other costs recognized until the amendment containing the estimated offering price is filed.

Business
Overview, page 45

10. Please expand disclosure to describe the specifics of "management's significant expertise and experience in the field of lipid science."

MAT9001 Development Program, page 47

11. Please explicitly disclose here, if true, that you plan to pursue the FDA's Section 505(b)(2) pathway for regulatory approval of your product candidate. Additionally, in your regulation section on page 53, please add a section describing the Hatch-Waxman Amendments to the FFDCA and explaining the Section 505(b)(2) approval process, including how that process differs from the more typical FDA approval process and what you are required to demonstrate for approval.

Manufacturing and Supply for MAT9001, page 50

12. We note your disclosure that a supplier is preparing to manufacture GMP clinical batches and that you have entered into an agreement with another company for encapsulation of MAT9001 clinical trial materials. Please file any related supply and manufacturing agreements as exhibits to your registration statement and describe their material terms in

this section. Alternately, if you do not believe you are substantially dependent on any such agreements, please advise us as to the basis of your conclusions.

Competition, page 51

13. To the extent known to you, please disclose whether any of your competitors currently developing prescription treatments for hypertriglyceridemia will utilize a key differentiating omega-3 fatty acid component that is neither EPA nor DHA, similar in design to MAT9001.

Indemnification Agreements, page 64

14. Please file the form of indemnification agreement you plan to enter into with your directors and executive officers as an exhibit to your registration statement.

Executive Compensation
Employment and Consulting Agreements, pages 65-66

15. We note your reference to a consulting agreement with Mr. Gaglione. Please disclose the amount paid to date under this agreement. Additionally, please file the agreement as an exhibit to your registration statement.

Certain Relationships and Related Party Transactions
Formation of Holdings, page 74

16. Please file any related securities purchase agreements relating to the formation of the holding company referenced in this section as an exhibit to your registration statement.

Consulting Agreement, page 75

17. Please describe the material terms of the consulting agreement with Aegis Capital Corporation in this section.

Merger Transaction

18. Please file the Merger Agreement relating to the July 11, 2013 merger as an exhibit to your registration statement.

Selling Stockholders, page 81

19. It appears that several of your selling stockholders are either broker-dealers or affiliates of broker-dealers. Please note that registration statements registering the resale of shares offered by broker-dealers must identify the broker dealers as underwriters if the shares

were not issued as underwriting compensation. For those selling stockholders that are affiliates of broker-dealers, please advise us as to whether:

- each seller purchased the securities in the ordinary course of business; and
- at the time of purchase of the securities to be resold, the seller had any agreements or understandings, directly or indirectly, with any person to distribute the securities.

Please additionally include this disclosure in the prospectus.

20. Please provide footnote disclosure identifying any of your selling stockholders that received their shares as underwriting compensation. As indicated above, please note that a broker-dealer that received the securities it is offering for resale as underwriting compensation need not be identified as an underwriter.

Balance Sheets, page F-2

21. Please disclose your accounting policy for issuance costs and explain to us how you determined the $189,937 that was deferred at June 30, 2013. Tell us how much of the costs related to the July and August 2013 private placements vs. the initial public offering.

Notes to Consolidated Financial Statements
Note F-Convertible Redeemable Preferred Stock, page F-10

22. You disclose that the initial conversion price is subject to adjustment for certain dilutive issuances. Please tell us what consideration was given to bifurcating the conversion option and recording the conversion option as a derivative. Provide us your analysis under ASC 815-15-25, ASC 815-10-15-74, and other applicable guidance. If you do not believe the conversion option is required to be recorded as a derivative, please provide us your analysis of whether or not a beneficial conversion feature is required to be recorded pursuant to ASC 470-20.

Note H, Subsequent Events, page F-11

23. Please provide us your analysis supporting your planned accounting treatment for the July 11, 2013 Merger Agreement and your presentation of the recapitalization of Matinas BioPharma. In particular, explain how the exchange ratio established in the merger agreement and the legal structure of this acquisition will be reflected in the financial statements of the registrant. Tell us how the voting agreement discussed on page 75 affects your decision as to who the accounting acquirer is in the merger and why you believe a recapitalization is appropriate. Tell us if the former shareholders of Matinas BioPharma, Inc. had a majority ownership of Holdings after the merger and how you considered issuance of warrants issued to the shareholders of Holdings and to the former

shareholders of Matinas BioPharma, Inc. Refer to ASC 805-40 and any technical guidance upon which you relied.

24. Please revise to clarify that 9 million shares of Matinas BioPharma, Holdings were issued to the former owners of Matinas BioPharma, Inc. Tell us the expected percentage ownership in the continuing entity to be held by the former shareholders of Matinas BioPharma, Inc.

25. For each of the private placements in July and August 2013, tell us the percentage of stock sold to related parties.

26. Disclose if you recorded, or intend to record, any compensation expense or other costs relating to any of the 2013 equity issuances and tell us what fair values of common stock were used to calculate the compensation. For example, you issued warrants for $.04 per warrants with an exercise price of $2 per share. Tell us the fair value of common stock used to value those warrants and how you intend to account for the issuance.

27. You disclose on page 40 that in October 2013 you granted 735,000 Options to Board members and 1,050,000 Options to members of the management team at an exercise price of $0.94 per share. Please revise your disclosure to clarify the date of the grant. Please tell us the fair value of your common stock on the date of grant and tell us if you intend to record any compensation for these option grants. Provide additional disclosure as necessary.

28. Please provide us a schedule of all the warrant issuances since inception, the terms of those issuances, and provide an analysis for each issuance as to whether or not the warrants are required to be recorded as derivatives. Refer to ASC 815-15-25, ASC 815-10-15-74, and other applicable guidance.

If you intend to respond to these comments with an amended draft registration statement, please submit it and any associated correspondence in accordance with the guidance we provide in the Division's October 11, 2012 announcement on the SEC website at http://www.sec.gov/divisions/corpfin/cfannouncements/drsfilingprocedures101512.htm.

Please keep in mind that we may publicly post filing review correspondence in accordance with our December 1, 2011 policy (http://www.sec.gov/divisions/corpfin/cfannouncements/edgarcorrespondence.htm). If you intend to use Rule 83 (17 CFR 200.83) to request confidential treatment of information in the correspondence you submit on EDGAR, please properly mark that information in each of your confidential submissions to us so we do not repeat or refer to that information in our comment letters to you.

You may contact Frank Wyman at (202) 551-3660 or Mary Mast at (202) 551-3613 if you have questions regarding comments on the financial statements and related matters. Please contact Austin Stephenson at (202) 551-3192 or me at (202) 551-3715 with any other questions.

Sincerely,

/s/ Jeffrey P. Riedler

Jeffrey P. Riedler
Assistant Director

cc: Via E-mail
Steven Skolnick, Esq.
Lowenstein Sandler LLP