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

**FORM 8-K**

**CURRENT REPORT**  
**Pursuant to Section 13 or 15(d) of**  
**The Securities Exchange Act of 1934**

Date of Report (Date of earliest event reported): June 19, 2018

**MATINAS BIOPHARMA HOLDINGS, INC.**

*(Exact name of registrant as specified in its charter)*

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

**001-38022**  
*(Commission  
File Number)*

**46-3011414**  
*(IRS Employer  
Identification No.)*

**1545 Route 206 South, Suite 302**  
**Bedminster, New Jersey**  
*(Address of principal executive offices)*

**07921**  
*(Zip Code)*

Registrant's telephone number, including area code: **(908) 443-1860**

**Not Applicable**  
*(Former name or former address, if changed since last report.)*

Check the appropriate box below if the Form 8-K filing is intended to simultaneously satisfy the filing obligation of the registrant under any of the following provisions (see General Instruction A.2. below):

- Written communications pursuant to Rule 425 under the Securities Act (17 CFR 230.425)
- Soliciting material pursuant to Rule 14a-12 under the Exchange Act (17 CFR 240.14a-12)
- Pre-commencement communications pursuant to Rule 14d-2(b) under the Exchange Act (17 CFR 240.14d-2(b))
- Pre-commencement communications pursuant to Rule 13e-4(c) under the Exchange Act (17 CFR 240.13e-4(c))

Indicate by check mark whether the registrant is an emerging growth company as defined in Rule 405 of the Securities Act of 1933 (§230.405 of this chapter) or Rule 12b-2 of the Securities Exchange Act of 1934 (§240.12b-2 of this chapter).

Emerging growth company

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act.

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### Item 1.01 Entry into a Material Definitive Agreement.

On June 19, 2018, Matinas BioPharma Holdings, Inc. (the “**Company**”) entered into a placement agency agreement (the “**Placement Agency Agreement**”) with ThinkEquity, a Division of Fordham Financial Management, Inc., as placement agent (the “**Placement Agent**”), relating to the offering, issuance and sale of up to 8,000 shares (the “**Preferred Shares**”) of the Company’s Series B Convertible Preferred Stock, par value \$0.0001 per share (the “**Series B Preferred**”), with a stated value of \$1,000 per share which are convertible into an aggregate of up to 16,000,000 shares of the Company’s common stock, par value \$0.0001 per share (the “**Common Stock**”) at an initial conversion price of \$0.50 per share of Common Stock (the “**Conversion Shares**”) and an additional up to 7,200,000 shares of Common Stock issuable upon payment of dividends under the Series B Preferred (the “**Dividend Shares**”). The offering is expected to close on June 21, 2018, subject to satisfaction of customary closing conditions.

In connection with the offering, on June 19, 2018, the Company filed a Certificate of Designation of Preferences, Rights and Limitations (the “**Certificate of Designations**”) with the Secretary of State of the State of Delaware to designate the preferences, rights and limitations of the Preferred Shares. Pursuant to the Certificate of Designations, the Company designated 8,000 shares of the Company’s previously undesignated preferred stock as Series B Preferred. The Certificate of Designations was effective on June 19, 2018 (the “**COD Effective Date**”). The following is a summary of the material terms of the Series B Convertible Preferred Stock. This summary is not complete, and is qualified in its entirety by reference to the form of Certificate of Designation, which is as Exhibit 3.1 to this current report on Form 8-K and is incorporated by reference herein.

*General.* Our board of directors has designated 8,000 shares of the up to 10,000,000 authorized shares of preferred stock, par value \$0.0001 per share, (of which 1,600,000 shares have been designated as Series A Preferred Stock) as Series B Convertible Preferred Stock. Subject to the limitations prescribed by our certificate of incorporation, our board of directors is authorized to establish the number of shares constituting each series of preferred stock and to fix the designations, powers, preferences and rights of the shares of each of those series and the qualifications, limitations and restrictions of each of those series, all without any further vote or action by our stockholders. Our Series B Preferred is a series of preferred stock. When issued, the shares of Series B Preferred will be validly issued, fully paid and non-assessable. Each share of Series B Preferred will have a stated value of \$1,000 per share.

*Rank.* The Series B Preferred will rank

- junior to our Series A Preferred Stock and any class or series of our capital stock hereafter created specifically ranking by its terms senior to the Series B Preferred;

- senior to all of our Common Stock;

- senior to any class or series of our capital stock hereafter created specifically ranking by its terms junior to the Series B Preferred; and

- on a parity with any class or series of our capital stock hereafter created specifically ranking by its terms on a parity with the Series B Preferred;

in each case, as to distributions of assets upon our liquidation, dissolution or winding up whether voluntarily or involuntarily.

*Dividends.* Subject to the Beneficial Ownership Limitation described below, holders of the Series B Preferred will be entitled to receive dividends payable as follows: (i) a number of shares of Common Stock equal to 10% of the shares of Common Stock underlying the Series B Preferred then held by such holder on the 12 month anniversary of the COD Effective Date, (ii) a number of shares of Common Stock equal to 15% of the shares of Common Stock underlying the Series B Preferred then held by such holder on the 24-month anniversary of the COD Effective Date and (iii) a number of shares of Common Stock equal to 20% of the shares of Common Stock underlying the Series B Preferred then held by such holder on the 36-month anniversary of the COD Effective Date. In the event a purchaser in this offering no longer holds Series B Preferred as of the 12-month anniversary, the 24-month anniversary or the 36 month anniversary, such purchaser will not be entitled to receive any dividends on such anniversary date. In the event a Fundamental Transaction (as defined below) is consummated prior to the automatic conversion of the Series B Preferred, the dividends will be accelerated and paid (to the extent not previously paid). In addition, holders of Series B Preferred will be entitled to receive dividends equal, on an as-if-converted to shares of Common Stock basis, and in the same form as dividends actually paid on shares of the Common Stock when, as, and if such dividends are paid on shares of the Common Stock. Notwithstanding the foregoing, to the extent that a holder's right to participate in any dividend in shares of Common Stock to which such holder is entitled would result in such Holder exceeding the Beneficial Ownership Limitation, then such holder shall not be entitled to participate in any such dividend to such extent and the portion of such shares that would cause such holder to exceed the Beneficial Ownership Limitation shall be held in abeyance for the benefit of such holder until such time, if ever, as such holder's beneficial ownership thereof would not result in such holder exceeding the Beneficial Ownership Limitation.

*Optional Conversion.* Subject to the Beneficial Ownership Limitation described below, each share of Series B Preferred will be convertible into shares of our Common Stock at any time at the option of the holder at a conversion price \$0.50 per share (subject to adjustment for reverse splits, stock combinations and similar changes as provided in the Certificate of Designation). Dividends will not accrue and will not be paid following optional conversion.

*Automatic Conversion.* Subject to the Beneficial Ownership Limitation described below, each share of our Series B Preferred shall automatically convert into 2,000 shares of our Common Stock at a conversion price of \$0.50 per share upon the earlier of (i) the first FDA approval of one of our product candidates, (ii) the 36-month anniversary of the COD Effective Date or (iii) the consent to conversion by holders of at least 50.1% of the outstanding shares of Series B Preferred. In the event the Series B Preferred automatically converts into Common Stock prior to the 36 month anniversary of the COD Effective Date, the holder on the date of such conversion shall also be entitled to receive those dividends which would have been payable after the conversion date, as if the shares of Series B Preferred had remained unconverted and outstanding through the 36 month anniversary of the COD Effective Date. Such dividend amount shall be payable as set forth above in shares of Common Stock upon such automatic conversion.

*Beneficial Ownership Limitation.* We may not effect any optional conversion or any automatic conversion of the Series B Preferred, or issue shares of Common Stock as dividends and a holder does not have the right to convert any portion of the Series B Preferred to the extent that, after giving effect to such conversion such holder would beneficially own in excess of the Beneficial Ownership Limitation, or such holder, together with such holder's affiliates, and any persons acting as a group together with such holder or affiliates, would beneficially own in excess of the Beneficial Ownership Limitation. The "**Beneficial Ownership Limitation**" is 4.99% of the number of shares of Common Stock outstanding immediately after giving effect to the issuance of shares of Common Stock issuable upon conversion of Series B Preferred held by the applicable holder. A holder may, prior to issuance of the Series B Preferred or, with 61 days prior notice to us, elect to increase or decrease the Beneficial Ownership Limitation; provided, however, that in no event may the Beneficial Ownership Limitation exceed 9.99%.

*Liquidation Preference.* In the event of a liquidation, dissolution or winding-up of our company, whether voluntary or involuntary, the proceeds and/or assets of our company remaining after giving effect to such transaction, and the payment of all of our debts and liabilities will be distributed first to the holders of our Series A Preferred Stock and thereafter to the holders of Series B Preferred and then to holders of Common Stock (including the holders of our Series A Preferred Stock and Series B Preferred on an "as converted" basis) on a pro rata basis.

*Voting Rights.* Except as provided in the Certificate of Designation of the Series B Preferred or as otherwise required by law, the holders of Series B Preferred will have no voting rights. However, we may not, without the consent of holders of a majority of the outstanding shares of Series B Preferred, alter or change adversely the powers, preferences or rights given to the Series B Preferred, increase the number of authorized shares of Series B Preferred, or enter into any agreement with respect to the foregoing.

*Redemption.* We will be not obligated to redeem or repurchase any shares of Series B Preferred. Shares of Series B Preferred will not otherwise be entitled to any redemption rights or mandatory sinking fund or analogous fund provisions.

*Failure to Deliver Conversion Shares.* If we fail to timely deliver shares of Common Stock upon conversion of the Series B Preferred, or the Conversion Shares within the time period specified in the Certificate of Designations (within two trading days after delivery of the notice of conversion, or any shorter standard settlement period in effect with respect to the trading market for our Common Stock on the date notice is delivered), then we are obligated to pay to the holder, as liquidated damages, for each \$1,000 of stated value of the Series B Preferred being converted, an amount equal to \$10 per Trading Day (increasing to \$20 per Trading Day on the fifth Trading Day after such damages begin to accrue).

*Compensation for Buy-In on Failure to Timely Deliver Shares.* If we fail to timely deliver the Conversion Shares to the holder, and if after the required delivery date the holder is required by its broker to purchase (in an open market transaction or otherwise) or the holder or its brokerage firm otherwise purchases, shares of Common Stock to deliver in satisfaction of a sale by the holder of the Conversion Shares which the holder anticipated receiving upon such conversion or exercise (a "Buy-In"), then we are obligated to (A) pay in cash to the holder the amount, if any, by which (x) the holder's total purchase price (including brokerage commissions, if any) for the shares of Common Stock so purchased, exceeds (y) the amount obtained by multiplying (1) the number of Conversion Shares that we were required to deliver times (2) the actual sale price at which the sell order giving rise to such purchase obligation was executed (including any brokerage commissions), and (B) (1) in the case of conversion at the option of the holder, either reinstate the portion of the Series B Preferred and equivalent number of Conversion Shares for which such conversion was not honored (in which case such conversion shall be deemed rescinded) or deliver to the holder the number of shares of Common Stock that would have been issued had we timely complied with our conversion and delivery obligations and (2) in the case of an automatic conversion, deliver to the holder the number of shares of Common Stock that would have been issued had we timely complied with our delivery obligations.

*Subsequent Rights Offerings; Pro Rata Distributions.* If we grant, issue or sell any Common Stock equivalents pro rata to the record holders of any class of shares of Common Stock, or the Purchase Rights, then a holder of Series B Preferred will be entitled to acquire, upon the terms applicable to such Purchase Rights, the aggregate Purchase Rights which the holder could have acquired if the holder had held the number of shares of Common Stock acquirable upon conversion of the Series B Preferred (without regard to any limitations on conversion). If we declare or make any dividend or other distribution of its assets (or rights to acquire its assets) to holders of Common Stock, then a holder of Series B Preferred is entitled to participate in such distribution to the same extent as if the holder had held the number of shares of Common Stock acquirable upon complete conversion of the Series B Preferred (without regard to any limitations on conversion).

*Fundamental Transaction.* If, at any time while the Series B Preferred is outstanding, (i) we effect any merger or consolidation of the Company with or into another person, (ii) we, directly or indirectly, effect any sale of all or substantially all of our assets in one transaction or a series of related transactions, or (iii) we effect any reclassification, reorganization or recapitalization of the Common Stock or any compulsory share exchange pursuant to which the Common Stock is effectively converted into or exchanged for other securities, cash or property, (each a "**Fundamental Transaction**"), then, upon any subsequent conversion of the Series B Preferred, the holders of the Series B Preferred shall have the right to receive, for each Conversion Share that would have been issuable upon such conversion immediately prior to the occurrence of such Fundamental Transaction, the same kind and amount of securities, cash or property as it would have been entitled to receive upon the occurrence of such Fundamental Transaction if it had been, immediately prior to such Fundamental Transaction, the holder of one share of Common Stock (the "**Alternate Consideration**"). For purposes of any such conversion, the determination of the conversion ratio will be appropriately adjusted to apply to such Alternate Consideration based on the amount of Alternate Consideration issuable in respect of one share of Common Stock in such Fundamental Transaction. If holders of Common Stock are given any choice as to the securities, cash or property to be received in a Fundamental Transaction, then the holder of the Series B Preferred will be given the same choice as to the Alternate Consideration it receives upon automatic conversion of the Series B Preferred following such Fundamental Transaction. To the extent necessary to effectuate the foregoing provisions, any successor to the Company or surviving entity in such Fundamental Transaction shall file a new Certificate of Designation with the same terms and conditions and issue to the holders of the Series B Preferred new preferred stock consistent with the foregoing provisions and evidencing the holders' right to convert such preferred stock into Alternate Consideration.

The offering is being made pursuant to the Company's effective registration statement on Form S-3 (File No. 333-217106) previously filed with and declared effective by the Securities and Exchange Commission (the "SEC"), a preliminary prospectus supplement dated June 18, 2018 and accompanying base prospectus and a prospectus supplement and accompanying prospectus to be filed with the SEC.

Pursuant to the Placement Agency Agreement, the Placement Agent will receive the following compensation: (i) a total cash fee equal to 7.0% of the public offering price for the Series B Preferred, (ii) a non-accountable expense allowance equal to 1.0% of the gross proceeds raised in this offering, and (iii) reimbursements for legal fees and expense in the amount of up to \$75,000. In addition, we will issue to the Placement Agent warrants to purchase 240,000 shares of Common Stock, which will be exercisable at any time and from time to time, in whole or in part, during the four-year period commencing one year from the date of this prospectus, at a price per share equal to \$0.75 (the "**Placement Agent Warrants**"). The Placement Agent Warrants will provide for registration rights (including a one-time demand registration right and unlimited piggyback rights), a cashless exercise option, customary anti-dilution provisions (for stock dividends and splits and recapitalizations) consistent with FINRA Rule 5110, and further, the number of shares underlying the placement agent warrants shall be reduced if necessary to comply with FINRA rules or regulations.

The Placement Agency Agreement contains customary representations, warranties and agreements by the Company, conditions to closing, indemnification obligations of the Company and the Placement Agent, including for liabilities under the Securities Act of 1933, as amended, other obligations of the parties and termination provisions. The representations, warranties and covenants contained in the Placement Agency Agreement were made only for purposes of such agreement and as of specific dates, were solely for the benefit of the parties to such agreement, and may be subject to limitations agreed upon by the contracting parties.

The foregoing description of the Placement Agency Agreement is not complete and is qualified in its entirety by reference to the full text of the Placement Agency Agreement, a copy of which is filed as Exhibit 10.1 to this report and is incorporated by reference herein. The foregoing descriptions of the Placement Agent Warrants and the Series B Preferred are summaries and are qualified in their entirety by reference to the copies of the form of Placement Agent Warrant and the form of Certificate of Designation of Series B Preferred, which are filed as Exhibits 4.1 and 3.1, respectively, and are incorporated by reference herein. A copy of the opinion of Lowenstein Sandler LLP relating to the legality of the issuance and sale of the securities in the offering is attached as Exhibit 5.1 to this report.

#### **Item 3.02. Unregistered Sales of Equity Securities.**

The information contained above in "Item 1.01 — Entry Into a Material Definitive Agreement" related to the Placement Agent Warrants is incorporated herein by reference. The Placement Agent Warrants and the shares issuable upon exercise of the Placement Agent Warrants will be issued in reliance on the exemption from registration provided by Section 4(a)(2) of the Securities Act as transactions not involving a public offering and in reliance on similar exemptions under applicable state laws.

#### **Item 3.03 Material Modification to Rights of Security Holders.**

The information contained in "Item 1.01 — Entry Into a Material Definitive Agreement" related to the designation of the Series B Preferred Stock is hereby incorporated by reference.

**Item 5.03 Amendments to Articles of Incorporation or Bylaws; Change in Fiscal Year.**

The information contained in “Item 1.01 — Entry Into a Material Definitive Agreement” related to the filing of the Certificate of Designations and designation of the Series B Preferred is hereby incorporated by reference.

**Item 7.01 Regulation FD Disclosure.**

On June 19, 2018, the Company issued a press release announcing that it had priced the offering. A copy of the press release is furnished hereto as Exhibit 99.1 to this Current Report and incorporated herein by reference.

Statements contained in this Current Report on Form 8-K regarding matters that are not historical facts are “forward-looking statements” within the meaning of the Private Securities Litigation Reform Act of 1995. Such statements may involve risks and uncertainties, such as statements related to the anticipated closing of the offering and the amount of proceeds expected from the offering. The risks and uncertainties involved include the Company’s ability to satisfy certain conditions to closing on a timely basis or at all, as well as other risks detailed from time to time in the Company’s SEC filings, including in its annual filing on Form 10-K filed with the SEC on March 16, 2018, the preliminary prospectus supplement dated June 18, 2018 and the accompanying base prospectus, and the final prospectus supplement and the accompanying base prospectus to be filed with the SEC.

**Item 9.01 Financial Statements and Exhibits.**

<b>(d)</b>	<b>Exhibit No.</b>	<b>Description</b>
	3.1	<a href="#"><u>Certificate of Designation of Series B Preferred Stock</u></a>
	4.1	<a href="#"><u>Form of Placement Agent Warrant</u></a>
	5.1	<a href="#"><u>Opinion of Lowenstein Sandler LLP</u></a>
	10.1	<a href="#"><u>Placement Agency Agreement, dated as of June 19, 2018, the Matinas BioPharma Holdings, Inc. and ThinkEquity, a Division of Fordham Financial Management, Inc., as placement agent.</u></a>
	12.1	<a href="#"><u>Computation of Ratio of Combined Fixed Charges and Preferred Stock Dividends to Earnings</u></a>
	23.1	<a href="#"><u>Consent of Lowenstein Sandler LLP (included in the opinion of Lowenstein Sandler LLP as Exhibit 5.1)</u></a>
	99.1	<a href="#"><u>Press Release, dated June 19, 2018</u></a>

## SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned hereunto duly authorized.

### **MATINAS BIOPHARMA HOLDINGS, INC.**

Dated: June 19, 2018

By: /s/ Jerome D. Jabbour

Name: Jerome D. Jabbour

Title: Chief Executive Officer





**CERTIFICATE OF DESIGNATION OF PREFERENCES,  
RIGHTS AND LIMITATIONS  
OF  
SERIES B PREFERRED STOCK  
OF  
MATINAS BIOPHARMA HOLDINGS, INC.**

It is hereby certified that:

1. The name of the Company (hereinafter called the ("**Company**") is Matinas Biopharma Holdings, Inc., a Delaware corporation.
2. The Certificate of Incorporation (the "**Certificate of Incorporation**") of the Company authorizes the issuance of Ten Million (10,000,000) shares of preferred stock, \$0.0001 par value per share, of which One Million Six Hundred Thousand (1,600,000) have been designated Series A Convertible Preferred Stock, \$0.0001 par value per share ("**Series A Preferred Stock**"), and expressly vests in the Board of Directors of the Company the authority to issue any or all of said shares in one (1) or more series and by resolution or resolutions to establish the designation and number and to fix the relative rights and preferences of each series to be issued.
3. The Board of Directors of the Company, pursuant to the authority expressly vested in it as aforesaid, has adopted the following resolutions creating a Series B issue of Preferred Stock:

**RESOLVED**, that Eight Thousand (8,000) of the Ten Million (10,000,000) authorized shares of Preferred Stock of the Company shall be designated Series B Convertible Preferred Stock, \$0.0001 par value per share, and shall possess the rights and preferences set forth below:

Section 1. Definitions. For the purposes hereof, the following terms shall have the following meanings:

"**Affiliate**" means any person that, directly or indirectly through one or more intermediaries, controls or is controlled by or is under common control with a Person, as such terms are used in and construed under Rule 405 of the Securities Act. A Person shall be regarded as in control of the Company if the Company owns or directly or indirectly controls more than fifty percent (50%) of the voting stock or other ownership interest of the other person, or if it possesses, directly or indirectly, the power to direct or cause the direction of the management and policies of such person.

"**Alternate Consideration**" shall have the meaning set forth in Section 7(d).

"**Attribution Parties**" shall have the meaning set forth in Section 6(e).

"**Beneficial Ownership Limitation**" shall have the meaning set forth in Section 6(e).

"**Business Day**" means any day except Saturday, Sunday, and any day which shall be a federal legal holiday in the United States or any day on which banking institutions in the State of New York are authorized or required by law or other governmental action to close. Whenever any payment or other obligation hereunder shall be due on a day other than a Business Day, such payment shall be made on the next succeeding Business Day.

“**Buy-In**” shall have the meaning set forth in Section 6(d)(iv).

“**Certificate of Designations**” means this Certificate of Designation of Preferences, Rights and Limitations of Series B Preferred Stock.

“**Certificated Preferred Stock**” shall have the meaning set forth in Section 8(b).

“**Commission**” means the United States Securities and Exchange Commission.

“**Common Stock**” means the Company’s common stock, par value \$0.0001 per share, and stock of any other class of securities into which such securities may hereafter be reclassified or changed into.

“**Common Stock Equivalents**” means any securities of the Company or the Subsidiaries of the Company, whether or not vested or otherwise convertible or exercisable into shares of Common Stock at the time of such issuance, which would entitle the holder thereof to acquire at any time Common Stock, including, without limitation, any debt, preferred stock, rights, options, warrants or other instrument that is at any time convertible into or exchangeable for, or otherwise entitles the holder thereof to receive, Common Stock, and excluding shares of Common Stock issuable upon conversion of the Series B Preferred Stock.

“**Company Conversion Notice**” means a notice delivered by the Company to effect a Mandatory Conversion of all the outstanding Series B Preferred Stock, provided that the effective date of such Mandatory Conversion shall be no less than ten (10) Business Days following the date that such notice is deemed to have been given pursuant to Section 9.

“**Conversion Amount**” means the Stated Value at issue.

“**Conversion Date**” shall have the meaning set forth in Section 6(b).

“**Conversion Price**” means \$0.50, subject to adjustment as set forth in Section 7.

“**Conversion Shares**” means the shares of Common Stock issuable upon conversion of the shares of Series B Preferred Stock in accordance with the terms hereof.

“**Dividend Shares**” shall have the meaning set forth in Section 3.

“**DTC**” shall have the meaning set forth in Section 8.

“**Effective Date**” means the date that this Certificate of Designations is filed with the Secretary of State of Delaware.

“**Event**” shall have the meaning set forth in Section 9(j).

“**Event Date**” shall have the meaning set forth in Section 9(j).

“**Exchange Act**” means the Securities Exchange Act of 1934, as amended, and the rules and regulations promulgated thereunder.

“**First Anniversary**” shall have the meaning set forth in Section 3.

“**Fundamental Transaction**” shall have the meaning set forth in Section 7(d).

“**Global Preferred Stock**” shall have the meaning set forth in Section 8(a).

“**Holder**” shall mean an owner of shares of Series B Preferred Stock.

“**Junior Securities**” shall be the Common Stock and any other class or series of capital stock of the Company hereafter created which does not expressly rank pari passu with or senior to the Series B Preferred Stock.

“**Liquidation**” shall have the meaning set forth in Section 5(a).

“**Mandatory Conversion**” shall have the meaning set forth in Section 6(b).

“**Mandatory Conversion Date**” shall have the meaning set forth in Section 6(b).

“**Mandatory Conversion Determination**” shall have the meaning set forth in Section 6(b).

“**New York Courts**” shall have the meaning set forth in Section 9(d).

“**Notice of Conversion**” shall have the meaning set forth in Section 6(a).

“**Optional Conversion Date**” shall have the meaning set forth in Section 6(a).

“**Original Issue Date**” means the date of the first issuance of any shares of Series B Preferred Stock regardless of the number of transfers of any particular shares of Series B Preferred Stock and regardless of the number of certificates which may be issued, if any, to evidence such Series B Preferred Stock.

“**Parity Securities**” means any class or series of capital stock of the Company hereinafter created that expressly ranks pari passu with the Series B Preferred Stock.

“**Person**” means an individual, entity, corporation, partnership, association, limited liability company, limited liability partnership, joint-stock company, trust or unincorporated organization.

“**PIK Shares**” shall have the meaning set forth in Section 3.

“**Preferred Stock**” means the Company’s preferred stock, par value \$0.0001 per share, and stock of any other class of securities into which such securities may hereafter be reclassified or changed into.

“**Purchase Rights**” shall have the meaning set forth in Section 7(b).

**“Regulatory Approval”** shall have the meaning set forth in Section 6(b).

**“Second Anniversary”** shall have the meaning set forth in Section 3.

**“Securities Act”** means the Securities Act of 1933, as amended, and the rules and regulations promulgated thereunder.

**“Senior Securities”** means the Company’s Series A Convertible Preferred Stock designated in the Certificate of Designations of Preferences, Rights and Limitations of Series A Preferred Stock dated July 26, 2016.

**“Series A Certificate of Designations”** means the Series A Convertible Preferred Stock designated in the Certificate of Designations of Preferences, Rights and Limitations of Series A Preferred Stock dated July 26, 2016.

**“Series B Preferred Stock”** shall have the meaning set forth in Section 2.

**“Share Delivery Date”** shall have the meaning set forth in Section 6(d).

**“Stated Value”** means \$1,000.00 per share of Series B Preferred Stock.

**“Subsidiary”** means any subsidiary of the Company as set forth on Exhibit 21 to the Company’s Annual Report on Form 10-K most recently filed with the Commission, and shall, where applicable, also include any direct or indirect subsidiary of the Company formed or acquired after the Effective Date.

**“Third Anniversary”** shall have the meaning set forth in Section 3.

**“Trading Day”** means a day on which the principal Trading Market is open for business.

**“Trading Market”** means any of the following markets or exchanges on which the Common Stock is listed or quoted for trading on the date in question: the NYSE American, the Nasdaq Capital Market, the Nasdaq Global Market, the Nasdaq Global Select Market, the New York Stock Exchange, OTCQB or OTCQX (or any successors to any of the foregoing).

**“Transfer Agent”** means VStock Transfer LLC, the current transfer agent of the Company, with a mailing address of 18 Lafayette Pl, Woodmere, NY 11598, a facsimile number of 646-536-3179 and an email address of info@vstocktransfer.com, and any successor transfer agent of the Company.

**Section 2. Designation and Authorized Shares.** The series of Preferred Stock designated by this Certificate of Designations shall be designated as the Company’s Series B Convertible Preferred Stock (the **“Series B Preferred Stock”**) and the number of shares so designated shall be Eight Thousand (8,000). So long as any of the Series B Preferred Stock are issued and outstanding, the Company shall not issue any shares of its preferred stock that are senior to the Series B Preferred Stock in Liquidation (other than the shares of Series A Preferred Stock that are issued and outstanding as of the date hereof) without the approval of the Holders of a majority of the issued and outstanding shares of Series B Preferred Stock. The Series B Preferred Stock shall not be redeemed for cash and under no circumstances shall the Company be required to net cash settle the Series B Preferred Stock.

**Section 3. Dividends.** Holders of shares of Series B Preferred Stock will be entitled to receive: (a) dividends payable as follows (i) a number of shares of Common Stock equal to ten percent (10%) of the number of shares of Common Stock issuable upon conversion of the Series B Preferred Stock then held by such Holder on the 12-month anniversary of the Effective Date (the “**First Anniversary**”), (ii) a number of shares of Common Stock equal to fifteen percent (15%) of the number of shares of Common Stock issuable upon conversion of the Series B Preferred Stock then held by such Holder on the 24-month anniversary of the Effective Date (the “**Second Anniversary**”), and (iii) a number of shares of Common Stock equal to twenty percent (20%) of the shares of Common Stock issuable upon conversion of the Series B Preferred Stock then held by such Holder on the 36-month anniversary of the Effective Date (the “**Third Anniversary**”) (collectively, the “**PIK Shares**”); and (b) dividends equal, on an as-if-converted to shares of Common Stock basis, to and in the same form as dividends actually paid on shares of the Common Stock when, as, and if such dividends are paid on shares of the Common Stock. The dividends set forth in clause (a) of this Section 3 will be satisfied solely by delivery of shares of Common Stock. The dividends set forth in clause (a) shall be accelerated and paid (to the extent not previously paid) upon the earlier of (x) consummation of a Fundamental Transaction or (y) the Mandatory Conversion Date. Notwithstanding the foregoing, to the extent that a Holder’s right to participate in any dividend of PIK Shares or any stock dividend declared on the Common Stock to which such Holder is entitled to pursuant to clause (b) of this Section 3 (“**Dividend Shares**”) would result in such Holder exceeding the Beneficial Ownership Limitation, then such Holder shall not be entitled to participate in any such dividend to such extent (or in the beneficial ownership of any PIK Shares or Dividend Shares as a result of such dividend to such extent) and the portion of such PIK Shares and/or Dividend Shares that would cause such Holder to exceed the Beneficial Ownership Limitation shall be held in abeyance for the benefit of such Holder until such time, if ever, as such Holder’s beneficial ownership thereof would not result in such Holder exceeding the Beneficial Ownership Limitation.

**Section 4. Voting Rights.** Except as set forth in this Section 4, as otherwise provided herein or as otherwise required by law, the Series B Preferred Stock shall have no voting rights. As long as any shares of Series B Preferred Stock are issued and outstanding, the Company shall not, without the affirmative vote of the Holders of a majority of the then outstanding shares of Series B Preferred Stock: (a) alter or change adversely the powers, preferences or rights given to the Series B Preferred Stock or alter or amend this Certificate of Designation; (b) increase the number of authorized shares of Series B Preferred Stock; (c) issue any shares of its Preferred Stock that are senior to the Series B Preferred Stock.

## Section 5. Liquidation.

(a) The Series B Preferred Stock shall, with respect to distributions of assets and rights upon the occurrence of any liquidation, dissolution or winding-up of the Company ("**Liquidation**"), rank: (i) junior to the Senior Securities, (ii) pari passu with the Parity Securities; and (iii) senior to the Junior Securities of the Company. Upon any Liquidation, after the satisfaction in full of the debts of the Company and payment of the liquidation preference to the Senior Securities, the Holders of shares of Series B Preferred Stock will be entitled to be paid, on a pari passu basis with the payment of any liquidation preference afforded to holders of any Parity Securities, for each share of Series B Preferred Stock held thereby, out of (but only to the extent) the assets of the Company are legally available for distribution to its stockholders, an amount equal to the Stated Value per share (as adjusted for stock splits, stock dividends, combinations or other recapitalizations of the Series B Preferred Stock), plus any accrued but unpaid dividends before any distribution or payment may be made to the holders of any Junior Securities. If the assets of the Company available for distribution to Holders of shares of Series B Preferred Stock shall be insufficient to permit payment in full to such Holders of the sums which such Holders are entitled to receive in such case and of any liquidation preference afforded to holders of any Parity Securities, then all of the assets available for distribution to holders of the Series B Preferred Stock and the Parity Securities shall be distributed among and paid to such holders ratably in proportion to the amounts that would be payable to such holders if such assets were sufficient to permit payment in full.

(b) After the Holders of all shares of Series B Preferred Stock shall have been paid in full the amounts to which they are entitled in pursuant to Section 5(a), the remaining assets of the Company available for distribution to its stockholders shall be distributed among the holders of shares of Series A Preferred Stock, Holders of the shares of Series B Preferred Stock and holders of Common Stock, pro rata based on the number of shares held by each such holder, treating for this purpose all such Series A Preferred Stock and Series B Preferred Stock as if it had been fully converted into Common Stock (without giving effect to the Beneficial Ownership Limitation) pursuant to the terms of the Series A Certificate of Designations and this Certificate of Designations, each as in effect immediately prior to such Liquidation.

## Section 6 Conversion.

(a) Conversions at Option of Holder. Each share of Series B Preferred Stock (or fraction thereof) shall be convertible, at any time and from time to time, from and after the Original Issue Date at the option of the Holder thereof into that number of shares of Common Stock (subject to the Beneficial Ownership Limitation set forth in Section 6(e)) determined by dividing the Stated Value by the Conversion Price then in effect. Holders shall effect conversions by providing the Transfer Agent, on behalf of the Company, with (i) the form of conversion notice attached hereto as Annex A (a "**Notice of Conversion**") and (ii) if represented by the Global Preferred Stock, the Holder shall cause its brokerage firm to post a request for withdrawal of the Series B Preferred Stock and subsequent deposit of the Conversion Shares with DTC. Each Notice of Conversion shall specify the number of shares of Series B Preferred Stock to be converted, the number of shares of Series B Preferred Stock owned prior to such conversion, the number of shares of Series B Preferred Stock owned subsequent to such conversion and the date on which such conversion is to be effected, which date may not be prior to the date the applicable Holder delivers such Notice of Conversion to the Company pursuant to Section 6 and in accordance with Section 9 (such date, the "**Optional Conversion Date**"). Such Holder shall be deemed for all corporate purposes to have become the holder of record of the Conversion Shares with respect to which the shares of Series B Preferred Stock have been converted as of the Optional Conversion Date. If no Optional Conversion Date is specified in a Notice of Conversion, the Optional Conversion Date shall be the date that such Notice of Conversion and Cancellation Request are deemed delivered to the Company in accordance with Section 9. The calculations and entries set forth in the Notice of Conversion shall control in the absence of manifest or mathematical error. No ink-original Notice of Conversion shall be required, nor shall any medallion guarantee (or other type of guarantee or notarization) of any Notice of Conversion form be required. To effect conversions of shares of Series B Preferred Stock, a Holder shall not be required to surrender any Certificated Series B Preferred Stock to the Company unless all of the shares of Series B Preferred Stock represented by any such certificate are so converted, in which case such Holder shall deliver the Certificated Series B Preferred Stock promptly following the Optional Conversion Date. To the extent that the Beneficial Ownership Limitation contained in Section 6(e) applies to the converting Holder, the determination of whether the Series B Preferred Stock is convertible (in relation to other securities owned by such Holder together with any Affiliates and Attribution Parties) and of how many shares of Series B Preferred Stock are convertible shall be in the sole discretion of such Holder, and the submission of a Notice of Conversion shall be deemed to be such Holder's determination of whether the shares of Series B Preferred Stock may be converted (in relation to other securities owned by such Holder together with any Affiliates and Attribution Parties) and how many shares of the Series B Preferred Stock are convertible, in each case subject to the Beneficial Ownership Limitation. To ensure compliance with this restriction, each Holder will be deemed to represent to the Company each time it delivers a Notice of Conversion that such Notice of Conversion has not violated the restrictions set forth in this Section and the Company shall have no obligation to verify or confirm the accuracy of such determination.

(b) Mandatory Conversion. On the earliest to occur of: (i) the effective date of such conversion set forth in the Company Conversion Notice, provided that the Company may not deliver the Company Conversion Notice unless Holders of at least 50.1% of the outstanding shares of Series B Preferred Stock consented to such conversion prior to the delivery of the Company Conversion Notice; (ii) the Third Anniversary, or (iii) the first approval of one of the Company's or its Subsidiary's drug product candidates by the U.S. Food and Drug Administration (the "Regulatory Approval") (the earlier to occur of the foregoing, the "Mandatory Conversion Date" and together with an Optional Conversion Date, the "Conversion Date"), each outstanding share of Series B Preferred Stock will automatically convert (subject to the Beneficial Ownership Limitation set forth in Section 6(e)) into such number of fully paid and non-assessable shares of Common Stock as is determined by dividing the Stated Value by the Conversion Price in effect on the Mandatory Conversion Date (a "Mandatory Conversion"). Within two Trading Days of (x) the Mandatory Conversion Date, if the shares of Series B Preferred Stock are represented by the Global Preferred Stock, or (y) such Holder's surrender of Certificated Series B Preferred Stock (or, if such registered holder alleges that such certificate has been lost, stolen or destroyed, a lost certificate affidavit and an indemnity or security reasonably acceptable to the Company (which shall not include the posting of any bond) to indemnify the Company against any claim that may be made against the Company on account of the alleged loss, theft or destruction of such certificate), the Company shall deliver: (I) to each Holder, the Conversion Shares issuable upon conversion of such Holder's Series B Preferred Stock via the Global Preferred Stock or Certificated Preferred Stock, as applicable and (II) the PIK Shares issuable upon Mandatory Conversion under Section 3, to Holders as of the Mandatory Conversion Date; provided that, any failure by the Holder to return Certificated Series B Preferred Stock, if any, will have no effect on the Mandatory Conversion pursuant to this Section 6(b), which Mandatory Conversion will be deemed to occur on the Mandatory Conversion Date. To the extent that the Beneficial Ownership Limitation contained in Section 6(e) applies to any Holder, such Holder shall within five Business Days of such Holder's receipt of the Company Conversion Notice, provide the Company with a written determination (a "Mandatory Conversion Determination"), delivered in accordance with Section 9, of whether such Holder's Series B Preferred Stock is convertible (in relation to other securities owned by such Holder together with any Affiliates and Attribution Parties) and of how many shares of Series B Preferred Stock are convertible, and the submission of a Mandatory Conversion Determination shall be deemed to be such Holder's determination of the maximum number of shares of Series B Preferred Stock that may be converted, subject to the Beneficial Ownership Limitation and the portion of the shares of Common Stock issuable upon such Mandatory Conversion hereunder that would cause such Holder to exceed the Beneficial Ownership Limitation shall be held in abeyance for the benefit of such Holder until such time, if ever, as such Holder's beneficial ownership thereof would not result in such Holder exceeding the Beneficial Ownership Limitation. To ensure compliance with this restriction, each Holder will be deemed to represent to the Company each time it delivers a Mandatory Conversion Determination that such determination has not violated the restrictions set forth in Section 6(e) and the Company shall have no obligation to verify or confirm the accuracy of such determination.

(c) Conversion Shares. The aggregate number of Conversion Shares which the Company shall issue upon conversion of the Series B Preferred Stock (whether pursuant to Section 6(a) or 6(b)) will be equal to the number of shares of Series B Preferred Stock to be converted, multiplied by the Stated Value, divided by the Conversion Price in effect at the time of the conversion.

(d) Mechanics of Conversion.

(i) Delivery of Conversion Shares upon Conversion. Promptly after the applicable Conversion Date, but in any case within the earlier of (i) two (2) Trading Days and (ii) the Standard Settlement Period (as defined below) thereof (the "Share Delivery Date"), the Company shall deliver, or cause to be delivered, to the converting Holder the number of Conversion Shares being acquired upon the conversion of the Series B Preferred Stock pursuant to Section 6(a) or 6(b), as applicable, any PIK Shares to which the Holder is entitled pursuant to Section 3 that have not been previously issued, if any, and a wire transfer of immediately available funds in the amount of accrued and unpaid cash dividends, if any. Conversion Shares issuable hereunder shall be transmitted by the Transfer Agent to the Holder by crediting the account of the Holder's or its designee's balance account with DTC through its Deposit or Withdrawal at Custodian system ("DWAC") if the Company is then a participant in such system and otherwise by physical delivery of a certificate, registered in the Company's share register in the name of the Holder or its designee, for the number of Conversion Shares and PIK Shares, if any, to which the Holder is entitled pursuant to such conversion to the address specified by the Holder in the Notice of Conversion or the Company Conversion Notice, as the case may be. The Company shall (A) deliver (or cause to be delivered) to the converting Holder who has converted less than all of such Holder's Certificated Series B Preferred Stock (1) a certificate or certificates, of like tenor, for the number of shares of Series B Preferred Stock evidenced by any surrendered certificate or certificates less the number of shares of Series B Preferred Stock converted. The Company agrees to maintain a transfer agent that is a participant in the DTC's FAST program so long as any shares of Series B Preferred Stock remain outstanding. As used herein, "Standard Settlement Period" means the standard settlement period, expressed in a number of Trading Days, on the Company's primary Trading Market with respect to the Common Stock as in effect on the date of delivery of the Notice of Conversion.

(ii) Failure to Deliver Conversion Shares upon an Optional Conversion. If, in the case of any Notice of Conversion, such Conversion Shares are not delivered to or as directed by the applicable Holder by the Share Delivery Date, in addition to any other rights herein, the Holder shall be entitled to elect by written notice to the Transfer Agent, on behalf of the Company, at any time on or before its receipt of such Conversion Shares, to rescind such Conversion, in which event the Company shall promptly return to the Holder any Certificated Series B Preferred Stock delivered to the Company and the Holder shall promptly return to the Company the Conversion Shares issued to such Holder pursuant to the rescinded Notice of Conversion.

(iii) Obligation Absolute; Partial Liquidated Damages. The Company's obligation to issue and deliver the Conversion Shares upon conversion of Series B Preferred Stock in accordance with the terms hereof are absolute and unconditional, irrespective of any action or inaction by a Holder to enforce the same, any waiver or consent with respect to any provision hereof, the recovery of any judgment against any Person or any action to enforce the same, or any setoff, counterclaim, recoupment, limitation or termination, or any breach or alleged breach by such Holder or any other Person of any obligation to the Company or any violation or alleged violation of law by such Holder or any other person, and irrespective of any other circumstance which might otherwise limit such obligation of the Company to such Holder in connection with the issuance of such Conversion Shares; provided, however, that such delivery shall not operate as a waiver by the Company of any such action that the Company may have against such Holder. In the event a Holder shall elect to convert any or all of its Series B Preferred Stock, the Company may not refuse conversion based on any claim that such Holder or any one associated or affiliated with such Holder has been engaged in any violation of law, agreement or for any other reason, unless an injunction from a court, on notice to Holder, restraining and/or enjoining conversion of all or part of the Series B Preferred Stock of such Holder shall have been sought and obtained, and the Company posts a surety bond for the benefit of such Holder in the amount of 150% of the Stated Value of Series B Preferred Stock which is subject to the injunction, which bond shall remain in effect until the completion of arbitration/litigation of the underlying dispute and the proceeds of which shall be payable to such Holder to the extent it obtains judgment. In the absence of such injunction, the Company shall issue Conversion Shares upon a properly noticed conversion. If the Company fails to deliver to a Holder such Conversion Shares pursuant to Section 6(d)(i) on the Share Delivery Date applicable to such conversion, the Company shall pay to such Holder, in cash, as liquidated damages and not as a penalty, for each \$1,000 of Stated Value of the Series B Preferred Stock being converted, \$10 per Trading Day (increasing to \$20 per Trading Day on the fifth Trading Day after such damages begin to accrue) for each Trading Day after the Share Delivery Date until such Conversion Shares are delivered or Holder rescinds such conversion. Nothing herein shall limit a Holder's right to pursue actual damages for the Company's failure to deliver Conversion Shares within the period specified herein and such Holder shall have the right to pursue all remedies available to it hereunder, at law or in equity including, without limitation, a decree of specific performance and/or injunctive relief. The exercise of any such rights shall not prohibit a Holder from seeking to enforce damages pursuant to any other Section hereof or under applicable law.



(iv) Compensation for Buy-In on Failure to Timely Deliver Conversion Shares Upon Conversion. In addition to any other rights available to the Holder, if the Company fails for any reason to deliver to a Holder the applicable Conversion Shares by the Share Delivery Date pursuant to Section 6(d)(i), and if after such Share Delivery Date such Holder is required by its brokerage firm to purchase (in an open market transaction or otherwise), or the Holder's brokerage firm otherwise purchases, shares of Common Stock to deliver in satisfaction of a sale by such Holder of the Conversion Shares which such Holder was entitled to receive upon the conversion relating to such Share Delivery Date (a "**Buy-In**"), then the Company shall (A) pay in cash to such Holder (in addition to any other remedies available to or elected by such Holder) the amount, if any, by which (x) such Holder's total purchase price (including any brokerage commissions) for the Common Stock so purchased exceeds (y) the product of (1) the aggregate number of Conversion Shares that such Holder was entitled to receive from the conversion at issue *multiplied by* (2) the actual sale price at which the sell order giving rise to such purchase obligation was executed (including any brokerage commissions) and (B) (I) in the case of an Optional Conversion either (a) reissue (if surrendered) the shares of Series B Preferred Stock equal to the number of shares of Series B Preferred Stock submitted for conversion (in which case, such conversion shall be deemed rescinded) or (b) deliver to such Holder the number of shares of Common Stock that would have been issued if the Company had timely complied with its delivery requirements under Section 6(d)(i) and (II) in the case of a Mandatory Conversion, deliver to such Holder the number of shares of Common Stock that would have been issued if the Company had timely complied with its delivery requirements under Section 6(d)(i). For example, if a Holder purchases shares of Common Stock having a total purchase price of \$11,000 to cover a Buy-In with respect to an attempted conversion of shares of Series B Preferred Stock with respect to which the actual sale price of the Conversion Shares (including any brokerage commissions) giving rise to such purchase obligation was a total of \$10,000 under clause (A) of the immediately preceding sentence, the Company shall be required to pay such Holder \$1,000. The Holder shall provide the Company written notice indicating the amounts payable to such Holder in respect of the Buy-In and, upon request of the Company, evidence of the amount of such loss. Nothing herein shall limit a Holder's right to pursue any other remedies available to it hereunder, at law or in equity including, without limitation, a decree of specific performance and/or injunctive relief with respect to the Company's failure to timely deliver the Conversion Shares upon conversion of the shares of Series B Preferred Stock as required pursuant to the terms hereof.

(v) Reservation of Shares Issuable Upon Conversion. The Company covenants that it will at all times reserve and keep available out of its authorized and unissued shares of Common Stock, free from preemptive rights or any other actual contingent purchase rights of Persons other than the Holders of the Series B Preferred Stock, not less than such aggregate number of shares of the Common Stock as shall be issuable (i) upon the conversion of all outstanding shares of Series B Preferred Stock (taking into account the adjustments and restrictions of Section 7) and (ii) in respect of the PIK Shares. The Company covenants that all Conversion Shares and PIK Shares shall, when issued, be duly authorized, validly issued, fully paid and nonassessable.

(vi) Fractional Shares. No fractional shares or scrip representing fractional shares shall be issued upon the conversion of or as dividends on the Series B Preferred Stock. As to any fraction of a share which a Holder would otherwise be entitled to upon such conversion or in respect of any such dividend, the Company shall round up to the next whole share of Common Stock.

(vii) Transfer Taxes and Expenses. The issuance of Conversion Shares on conversion of this Series B Preferred Stock shall be made without charge to any Holder for any documentary stamp or similar taxes that may be payable in respect of the issue or delivery of such Conversion Shares, provided that the Company shall not be required to pay any tax that may be payable in respect of any transfer involved in the issuance and delivery of any such Conversion Shares upon conversion in a name other than that of the Holders of such shares of Series B Preferred Stock and the Company shall not be required to issue or deliver such Conversion Shares and shall not be responsible for partial liquidated damages under Section 6(d)(iii) or penalties under Section 6(d)(iv) unless or until the Person or Persons requesting the issuance thereof shall have paid to the Company the amount of such tax or shall have established to the satisfaction of the Company that such tax has been paid. The Company shall pay all Transfer Agent fees required for same-day processing of any Notice of Conversion and all fees to DTC (or another established clearing Company performing similar functions) required for same-day electronic delivery of the Conversion Shares.

(e) Beneficial Ownership Limitation. The Company shall not effect any conversion of the Series B Preferred Stock, including, without limitation, a Mandatory Conversion, and a Holder shall not have the right to receive dividends hereunder or convert any portion of the Series B Preferred Stock, to the extent that, after giving effect to the receipt of dividends hereunder or conversion set forth on the applicable Notice of Conversion, such Holder (together with such Holder's Affiliates, and any Persons acting as a group together with such Holder or any of such Holder's Affiliates (such Persons, "Attribution Parties")) would beneficially own in excess of the Beneficial Ownership Limitation (as defined below). For purposes of the foregoing sentence, the number of shares of Common Stock beneficially owned by such Holder and its Affiliates and Attribution Parties shall include the number of shares of Common Stock received as dividends or issuable upon conversion of the Series B Preferred Stock with respect to which such determination is being made, but shall exclude the number of shares of Common Stock which are issuable upon (i) conversion of the remaining, unconverted Series B Preferred Stock beneficially owned by such Holder or any of its Affiliates or Attribution Parties and (ii) exercise or conversion of the unexercised or unconverted portion of any other securities of the Company subject to a limitation on conversion or exercise analogous to the limitation contained herein (including, without limitation, the Series B Preferred Stock) beneficially owned by such Holder or any of its Affiliates or Attribution Parties. Except as set forth in the preceding sentence, for purposes of this Section 6(e), beneficial ownership shall be calculated in accordance with Section 13(d) of the Exchange Act and the rules and regulations promulgated thereunder, it being acknowledged by the Holder that the Company is not representing to the Holder that such calculation is in compliance with Section 13(d) of the Exchange Act and the Holder is solely responsible for any schedules required to be filed in accordance therewith (other than as it relates to a Holder relying on the number of shares issued and outstanding as provided by the Company pursuant to this Section). In addition, a determination as to any group status as contemplated above shall be determined in accordance with Section 13(d) of the Exchange Act and the rules and regulations promulgated thereunder. For purposes of this Section 6(e), in determining the number of outstanding shares of Common Stock, a Holder may rely on the number of outstanding shares of Common Stock as stated in the most recent of the following: (i) the Company's most recent periodic or annual report filed with the Commission, as the case may be, (ii) a more recent public announcement by the Company or (iii) a more recent written notice by the Company or the Transfer Agent setting forth the number of shares of Common Stock outstanding. Upon the written or oral request (which may be via email) of a Holder, the Company shall within one Trading Day confirm orally and in writing to such Holder the number of shares of Common Stock then outstanding. The "Beneficial Ownership Limitation" shall be 4.99% (or, at the written election of any Holder delivered to the Company pursuant to the terms of Section 9 prior to the issuance of any shares of Series B Preferred Stock, 9.99%) of the number of shares of the Common Stock outstanding immediately after giving effect to the issuance of shares of Common Stock issuable upon conversion of Series B Preferred Stock held by the applicable Holder. A Holder, upon notice to the Company, may increase or decrease the Beneficial Ownership Limitation provisions of this Section 6(e) applicable to its Series B Preferred Stock provided that the Beneficial Ownership Limitation in no event exceeds 9.99% of the number of shares of the Common Stock outstanding immediately after giving effect to the issuance of shares of Common Stock upon conversion of this Series B Preferred Stock held by the Holder and the provisions of this Section 6(e) shall continue to apply. Any such increase in the Beneficial Ownership Limitation will not be effective until the 61st day after such notice is delivered to the Company and shall only apply to such Holder and no other Holder. The provisions of this Section 6(e) shall be construed and implemented in a manner otherwise than in strict conformity with the terms of this Section 6(e) to correct this paragraph (or any portion hereof) which may be defective or inconsistent with the intended Beneficial Ownership Limitation contained herein or to make changes or supplements necessary or desirable to properly give effect to such limitation. The limitations contained in this Section 6(e) shall apply to a successor holder of Series B Preferred Stock.

Section 7. Certain Adjustments.

(a) Stock Dividends and Stock Splits. If the Company, at any time while the Series B Preferred Stock is outstanding: (A) pays a stock dividend or otherwise makes a distribution or distributions payable in shares of Common Stock on shares of Common Stock or any other Common Stock Equivalents (which, for avoidance of doubt, will not include any shares of Common Stock issued by the Company upon conversion of this Series B Preferred Stock or payment of a dividend on this Series B Preferred Stock); (B) subdivides outstanding shares of Common Stock into a larger number of shares; (C) combines (including by way of a reverse stock split) outstanding shares of Common Stock into a smaller number of shares; or (D) issues, in the event of a reclassification of shares of the Common Stock, any shares of capital stock of the Company, then the Conversion Price will be multiplied by a fraction of which the numerator will be the number of shares of Common Stock (excluding any treasury shares of the Company) outstanding immediately before such event and of which the denominator will be the number of shares of Common Stock, or in the event that clause (D) of this Section 7(a) will apply shares of reclassified capital stock, outstanding immediately after such event. Any adjustment made pursuant to this Section 7(a) will become effective immediately after the record date for the determination of stockholders entitled to receive such dividend or distribution and will become effective immediately after the effective date in the case of a subdivision, combination or re-classification.

(b) Subsequent Rights Offerings. In addition to any adjustments pursuant to Section 7(a) above, if at any time the Company grants, issues or sells any Common Stock Equivalents or rights to purchase stock, warrants, securities or other property pro rata to the record holders of any class of shares of Common Stock (the "**Purchase Rights**"), then the Holder will be entitled to acquire, upon the terms applicable to such Purchase Rights, the aggregate Purchase Rights which the Holder could have acquired if the Holder had held the number of shares of Common Stock acquirable upon complete conversion of such Holder's Series B Preferred Stock (without regard to any limitations on exercise hereof, including without limitation, the Beneficial Ownership Limitation) immediately before the date on which a record is taken for the grant, issuance or sale of such Purchase Rights, or, if no such record is taken, the date as of which the record holders of shares of Common Stock are to be determined for the grant, issue or sale of such Purchase Rights (provided, however, to the extent that the Holder's right to participate in any such Purchase Right would result in the Holder exceeding the Beneficial Ownership Limitation, then the Holder shall not be entitled to participate in such Purchase Right to such extent (or beneficial ownership of such shares of Common Stock as a result of such Purchase Right to such extent) and such Purchase Right to such extent shall be held in abeyance for the Holder until such time, if ever, as its right thereto would not result in the Holder exceeding the Beneficial Ownership Limitation).

(c) Pro Rata Distributions. During such time as this Series B Preferred Stock is outstanding, if the Company declares or makes any dividend or other distribution of its assets (or rights to acquire its assets) to holders of shares of Common Stock, by way of return of capital or otherwise (including, without limitation, any distribution of cash, stock or other securities, property or options by way of a dividend, spin off, reclassification, corporate rearrangement, scheme of arrangement or other similar transaction) (a “**Distribution**”), at any time after the issuance of this Series B Preferred Stock, then, in each such case, the Holder shall be entitled to participate in such Distribution to the same extent that the Holder would have participated therein if the Holder had held the number of shares of Common Stock acquirable upon complete conversion of this Series B Preferred Stock (without regard to any limitations on conversion hereof, including without limitation, the Beneficial Ownership Limitation) immediately before the date of which a record is taken for such Distribution, or, if no such record is taken, the date as of which the record holders of shares of Common Stock are to be determined for the participation in such Distribution (provided, however, to the extent that the Holder’s right to participate in any such Distribution would result in the Holder exceeding the Beneficial Ownership Limitation, then the Holder shall not be entitled to participate in such Distribution to such extent (or in the beneficial ownership of any shares of Common Stock as a result of such Distribution to such extent) and the portion of such Distribution shall be held in abeyance for the benefit of the Holder until such time, if ever, as its right thereto would not result in the Holder exceeding the Beneficial Ownership Limitation).

(d) Fundamental Transaction. If, at any time while the Series B Preferred Stock is outstanding, (A) the Company effects any merger or consolidation of the Company with or into another Person, (B) the Company effects any sale of all or substantially all of its assets in one transaction or a series of related transactions, or (C) the Company effects any reclassification of the Common Stock or any compulsory share exchange pursuant to which the Common Stock is effectively converted into or exchanged for other securities, cash or property (in any such case, a “**Fundamental Transaction**”), then, upon any subsequent conversion of the Series B Preferred Stock, the Holders shall have the right to receive, for each Conversion Share that would have been issuable upon such conversion immediately prior to the occurrence of such Fundamental Transaction, the same kind and amount of securities, cash or property as it would have been entitled to receive upon the occurrence of such Fundamental Transaction if it had been, immediately prior to such Fundamental Transaction, the holder of one share of Common Stock (the “Alternate Consideration”). For purposes of any such conversion, the determination of the Conversion Price shall be appropriately adjusted to apply to such Alternate Consideration based on the amount of Alternate Consideration issuable in respect of one share of Common Stock in such Fundamental Transaction, and the Company shall adjust the Conversion Price in a reasonable manner reflecting the relative value of any different components of the Alternate Consideration. If holders of Common Stock are given any choice as to the securities, cash or property to be received in a Fundamental Transaction, then the Holders shall be given the same choice as to the Alternate Consideration they receive upon any conversion of the Series B Preferred Stock following such Fundamental Transaction. To the extent necessary to effectuate the foregoing provisions, any successor to the Company or surviving entity in such Fundamental Transaction shall file a new Certificate of Designation with the same terms and conditions and issue to the Holders new preferred stock consistent with the foregoing provisions and evidencing the Holders’ right to convert such preferred stock into Alternate Consideration. The terms of any agreement pursuant to which a Fundamental Transaction is effected shall include terms requiring any such successor or surviving entity to comply with the provisions of this Section 7(d) and insuring that the Series B Preferred Stock (or any such replacement security) will be substantially similar in form and substance to this Certificate of Designations and insuring that the Series B Preferred Stock will be convertible for a corresponding number of shares of capital stock of such successor entity (or its parent entity) equivalent to the shares of Common Stock acquirable and receivable upon conversion of this Series B Preferred Stock (without regard to any limitations on the conversion of this Series B Preferred Stock) prior to such Fundamental Transaction, and with a conversion price which applies the conversion price hereunder to such shares of capital stock (but taking into account the relative value of the shares of Common Stock pursuant to such Fundamental Transaction and the value of such shares of capital stock, such number of shares of capital stock and such conversion price being for the purpose of protecting the economic value of this Series B Preferred Stock immediately prior to the consummation of such Fundamental Transaction) and will be similarly adjusted upon any subsequent transaction analogous to a Fundamental Transaction.

(e) Calculations. All calculations under this Section 7 will be made to the nearest cent or the nearest 1/100th of a share, as the case may be.

(f) Notice to the Holders.

- (i) Adjustment to Conversion Price. Whenever the Conversion Price is adjusted pursuant to any provision of this Section 7, the Company shall promptly deliver to each Holder a notice setting forth the Conversion Price after such adjustment and setting forth a brief statement of the facts requiring such adjustment.
- (ii) Notice to Allow Conversion by Holder. If (A) the approval of any stockholders of the Company shall be required in connection with any reclassification of the Common Stock, any consolidation or merger to which the Company is a party, any sale or transfer of all or substantially all of the assets of the Company, or any compulsory share exchange whereby the Common Stock is converted into other securities, cash or property or (B) the Company shall authorize the voluntary or involuntary dissolution, liquidation or winding up of the affairs of the Company, then, in each case, the Company shall cause to be filed at each office or agency maintained for the purpose of conversion of the Series B Preferred Stock, and shall cause to be delivered to each Holder pursuant to Section 9, at least twenty (20) calendar days prior to the applicable record or effective date hereinafter specified, a written notice stating (x) the date on which a record is to be taken for the purpose of seeking such stockholder approval or (y) the date on which such reclassification, consolidation, merger, sale, transfer or share exchange is expected to become effective or close, and the date as of which it is expected that holders of the Common Stock of record shall be entitled to exchange their shares of the Common Stock for securities, cash or other property deliverable upon such reclassification, consolidation, merger, sale, transfer or share exchange, provided that the failure to deliver such notice or any defect therein or in the delivery thereof shall not affect the validity of the corporate action required to be specified in such notice. To the extent that any notice provided hereunder constitutes, or contains, material, non-public information regarding the Company or any of the Subsidiaries, the Company shall simultaneously file such notice with the Commission pursuant to a Current Report on Form 8-K. The Holder shall remain entitled to convert such Holder's Series B Preferred Stock pursuant to Section 6(a) (subject to the Beneficial Ownership Limitation) during the 20-day period commencing on the date of such notice through the effective date of the event triggering such notice except as may otherwise be expressly set forth herein.

#### Section 8. Certificates

(a) Global Preferred Stock. The Series B Preferred Stock shall be issued initially in the form of one or more fully registered global certificates with the global securities legend (the "**Global Preferred Stock**"), which shall be deposited on behalf of the Holders with the Transfer Agent, as custodian for The Depository Trust Company ("**DTC**") (or with such other custodian as DTC may direct), and registered in the name of DTC or a nominee of DTC, duly executed by the Company and authenticated by the Transfer Agent as hereinafter provided. The number of shares of Series B Preferred Stock represented by Global Preferred Stock may from time to time be increased or decreased by adjustments made on the records of the Transfer Agent and DTC or its nominee as hereinafter provided. All shares of Conversion Shares and PIK Shares shall be freely transferable without restriction under the Securities Act (other than by the Company's Affiliates), and such shares shall be eligible for receipt in global form through the facilities of DTC. In the event Global Preferred Stock is deposited with or on behalf of DTC, the Company shall execute and the Transfer Agent shall authenticate and deliver initially one or more Global Preferred Stock certificates that (a) shall be registered in the name of DTC as depository for such Global Preferred Stock or the nominee of DTC and (b) shall be delivered by the Transfer Agent to DTC or pursuant to DTC's instructions or held by the Transfer Agent as custodian for DTC.

(b) Certificated Preferred Stock. Holders of Series B Preferred Stock will only be entitled to receive physical delivery of Series B Preferred Stock in fully certificated form ("**Certificated Preferred Stock**") upon written request to the Transfer Agent delivered pursuant to Section 9 and in accordance with the Transfer Agent's policies and procedure in effect from time to time.

Section 9. Miscellaneous.

(a) Notices. Any and all notices or other communications or deliveries to be provided to the Holders, the Company or the Transfer Agent hereunder, including, without limitation, any Notice of Conversion or Company Conversion Notice, shall be in writing and delivered personally, by facsimile, by e-mail, or sent by a nationally recognized overnight courier service (i) if to the Holders, at the Holder's address set forth in the book and records of the Company or to another address of such Holder as may be specified by such Holder to the Company in a written notice delivered in accordance with this Section, (ii) if to the Company, at 1545 Route 206 South, Suite 302, Bedminster, New Jersey 07921, email: [jjabbour@matinasbiopharma.com](mailto:jjabbour@matinasbiopharma.com) or to another address as the Company may specify for such purposes by written notice to the Holders delivered in accordance with this Section, or (ii) to the Transfer Agent, at the address specified herein or to another address as the Company may specify for the Transfer Agent by written notice to the Holders delivered in accordance with this Section. Any notice or other communication or deliveries hereunder shall be deemed given and effective on the earliest of (i) the date of transmission, if such notice or communication is delivered via facsimile at the facsimile number or via e-mail at the e-mail address set forth in this Section prior to 5:30 p.m. (New York City time) on any date, (ii) the next Trading Day after the date of transmission, if such notice or communication is delivered via facsimile at the facsimile number or via e-mail at the e-mail address set forth in this Section on a day that is not a Trading Day or later than 5:30 p.m. (New York City time) on any Trading Day, (iii) the second Trading Day following the date of mailing, if sent by U.S. nationally recognized overnight courier service, or (iv) upon actual receipt by the party to whom such notice is required to be given. To the extent that any notice provided pursuant to this Certificate of Designations constitutes, or contains, material, non-public information regarding the Company or any Subsidiaries, the Company shall simultaneously file such notice with the Commission pursuant to a Current Report on Form 8-K.

(b) Absolute Obligation. Except as expressly provided herein, no provision of this Certificate of Designations shall alter or impair the obligation of the Company, which is absolute and unconditional, to pay liquidated damages and accrued dividends, as applicable, on the shares of Series B Preferred Stock at the time, place, and rate, and in the coin or currency, herein prescribed.

(c) Lost or Mutilated Series B Preferred Stock Certificate. If a Holder alleges that such Holder's Series B Preferred Stock certificate has been lost, stolen or destroyed, the Company will only be obligated to issue a replacement certificate if the Holder delivers to the transfer agent, or the Company, as applicable: (i) a lost certificate affidavit; (ii) an indemnity bond in a form acceptable to the Company's transfer agent, or if the Company acts as its own transfer agent, an agreement reasonably acceptable to the Company to indemnify the Company against any claim that may be made against the Company on account of the alleged loss, theft or destruction of such certificate; and (iii) any other documentation that the transfer agent or the Company, if the Company acts as its own transfer agent, may reasonably require.

(d) Governing Law. All questions concerning the construction, validity, enforcement and interpretation of this Certificate of Designations shall be governed by and construed and enforced in accordance with the internal laws of the State of Delaware, without regard to the principles of conflict of laws thereof. Each party agrees that all legal proceedings concerning the interpretation, enforcement and defense of the transactions contemplated by this Certificate of Designations (whether brought against a party hereto or its respective Affiliates, directors, officers, shareholders, employees or agents) shall be commenced in the state and federal courts sitting in the City of New York, Borough of Manhattan (the “**New York Courts**”). Each party hereto hereby irrevocably submits to the exclusive jurisdiction of the New York Courts for the adjudication of any dispute hereunder or in connection herewith or with any transaction contemplated hereby or discussed herein, and hereby irrevocably waives, and agrees not to assert in any suit, action or proceeding, any claim that it is not personally subject to the jurisdiction of such New York Courts, or such New York Courts are improper or inconvenient venue for such proceeding. Each party hereby irrevocably waives personal service of process and consents to process being served in any such suit, action or proceeding by mailing a copy thereof via registered or certified mail or overnight delivery (with evidence of delivery) to such party at the address in effect for notices to it under this Certificate of Designations and agrees that such service shall constitute good and sufficient service of process and notice thereof. Nothing contained herein shall be deemed to limit in any way any right to serve process in any other manner permitted by applicable law. Each party hereto hereby irrevocably waives, to the fullest extent permitted by applicable law, any and all right to trial by jury in any legal proceeding arising out of or relating to this Certificate of Designations or the transactions contemplated hereby. If any party shall commence an action or proceeding to enforce any provisions of this Certificate of Designation, then the prevailing party in such action or proceeding shall be reimbursed by the other party for its attorneys’ fees and other costs and expenses incurred in the investigation, preparation and prosecution of such action or proceeding.

(e) Waiver. Any waiver by the Company or a Holder of a breach of any provision of this Certificate of Designations shall not operate as or be construed to be a waiver of any other breach of such provision or of any breach of any other provision of this Certificate of Designations or a waiver by any other Holders. The failure of the Company or a Holder to insist upon strict adherence to any term of this Certificate of Designations on one or more occasions shall not be considered a waiver or deprive that party (or any other Holder) of the right thereafter to insist upon strict adherence to that term or any other term of this Certificate of Designation. Any waiver by the Company or a Holder must be in writing.

(f) Severability. If any provision of this Certificate of Designations is invalid, illegal or unenforceable, the balance of this Certificate of Designations shall remain in effect, and if any provision is inapplicable to any Person or circumstance, it shall nevertheless remain applicable to all other Persons and circumstances. If it shall be found that any dividend or other amount deemed interest due hereunder violates the applicable law governing usury, the applicable rate of interest due hereunder shall automatically be lowered to equal the maximum rate of interest permitted under applicable law.

(g) Next Business Day. Whenever any payment or other obligation hereunder shall be due on a day other than a Business Day, such payment shall be made on the next succeeding Business Day.

(h) Headings. The headings contained herein are for convenience only, do not constitute a part of this Certificate of Designations and shall not be deemed to limit or affect any of the provisions hereof.

(i) Status of Converted Series B Preferred Stock. If any shares of Series B Preferred Stock shall be converted or reacquired by the Company, such shares shall resume the status of authorized but unissued shares of preferred stock and shall no longer be designated as Series B Convertible Preferred Stock.

(j) Registration of Series B Preferred Stock, Conversion Shares and PIK Shares. The Company covenants that it will use reasonable, best efforts to maintain a registration statement filed with the Commission under the Securities Act covering the Series B Preferred Stock, Conversion Shares and PIK Shares continuously effective and a prospectus covering such securities updated and available for use by the Holders until the 36-month anniversary of the Effective Date provided however that the Company shall have no obligation to register such Series B Preferred Stock, Conversion Shares or PIK Shares to the extent an exemption from registration is available under Section 3(a)(9) of the Securities Act and such shares may be resold without restriction under the Securities Act or such shares may be issued without legend and resold without restriction under Rule 144 promulgated by the Commission pursuant to the Securities Act, as such Rule may be amended or interpreted from time to time, or any similar rule or regulation hereafter adopted by the Commission having substantially the same purpose and effect as such Rule.

[Signature page follows.]



IN WITNESS WHEREOF, this Certificate of Designations has been executed by a duly authorized officer of the Company as of this 19th day of June, 2018.

*/s/ Jerome D. Jabbour*

\_\_\_\_\_  
Name: Jerome D. Jabbour

Title: Chief Executive Officer

ANNEX A

NOTICE OF CONVERSION

(TO BE EXECUTED BY THE REGISTERED HOLDER IN ORDER TO CONVERT SHARES OF SERIES B PREFERRED STOCK)

The undersigned hereby elects to convert the number of shares of Series B Convertible Preferred Stock indicated below into shares of common stock, no par value per share (the "Common Stock"), of Matinas BioPharma Holdings, Inc., a Delaware corporation (the "Corporation"), according to the conditions hereof, as of the date written below. The undersigned represents that the undersigned has instructed its brokerage firm to post the request for withdrawal and subsequent deposit with DTC and understands that a conversion cannot be processed until such request for withdrawal and subsequent deposit has been posted to DTC. If shares of Common Stock are to be issued in the name of a Person other than the undersigned, the undersigned will pay all transfer taxes payable with respect thereto. No fee will be charged to the Holders for any conversion, except for any such transfer taxes.

Conversion calculations:

Date to Effect Conversion: \_\_\_\_\_

Number of shares of Series B Preferred Stock owned prior to Conversion: \_\_\_\_\_

Number of shares of Series B Preferred Stock to be Converted: \_\_\_\_\_

Stated Value of shares of Series B Preferred Stock to be Converted: \_\_\_\_\_

Number of shares of Common Stock to be Issued: \_\_\_\_\_

Applicable Conversion Price: \_\_\_\_\_

Number of shares of Series B Preferred Stock subsequent to Conversion: \_\_\_\_\_

Address for Delivery: \_\_\_\_\_

Or

DWAC Instructions:

Broker no: \_\_\_\_\_

Account no: \_\_\_\_\_

[Holder]

By: \_\_\_\_\_  
Name: \_\_\_\_\_  
Title: \_\_\_\_\_



**Form of Placement Agent's Warrant Agreement**

THE REGISTERED HOLDER OF THIS PURCHASE WARRANT BY ITS ACCEPTANCE HEREOF, AGREES THAT IT WILL NOT SELL, TRANSFER OR ASSIGN THIS PURCHASE WARRANT EXCEPT AS HEREIN PROVIDED AND THE REGISTERED HOLDER OF THIS PURCHASE WARRANT AGREES THAT IT WILL NOT SELL, TRANSFER, ASSIGN, PLEDGE OR HYPOTHECATE THIS PURCHASE WARRANT FOR A PERIOD OF ONE YEAR FOLLOWING THE CLOSING DATE (DEFINED BELOW) TO ANYONE OTHER THAN (I) THINKEQUITY, A DIVISION OF FORDHAM FINANCIAL MANAGEMENT, INC., OR AN UNDERWRITER OR A SELECTED DEALER IN CONNECTION WITH THE OFFERING, OR (II) A BONA FIDE OFFICER OR PARTNER OF THINKEQUITY, A DIVISION OF FORDHAM FINANCIAL MANAGEMENT, INC., OR OF ANY SUCH UNDERWRITER OR SELECTED DEALER.

THIS PURCHASE WARRANT IS NOT EXERCISABLE PRIOR TO JUNE 21, 2019. VOID AFTER 5:00 P.M., EASTERN TIME, JUNE 21, 2023.

**WARRANT TO PURCHASE COMMON STOCK****MATINAS BIOPHARMA HOLDINGS, INC.**

Warrant Shares: \_\_\_\_\_

Initial Exercise Date: June 21, 2019

THIS WARRANT TO PURCHASE COMMON STOCK (the "Warrant") certifies that, for value received, ThinkEquity, a Division of Fordham Financial Management, Inc. or its assigns (the "Holder") is entitled, upon the terms and subject to the limitations on exercise and the conditions hereinafter set forth, at any time on or after June 21, 2019 (the "Initial Exercise Date") and, in accordance with FINRA Rule 5110(f)(2)(G)(i), prior to at 5:00 p.m. (New York time) on the date that is five (5) years following the Closing Date (the "Termination Date") but not thereafter, to subscribe for and purchase from Matinas BioPharma Holdings, Inc., a Delaware corporation (the "Company"), up to \_\_\_\_\_ shares (the "Warrant Shares") of common stock, par value \$0.0001 per share, of the Company (the "Common Stock"), as subject to adjustment hereunder. The purchase price of one share of Common Stock under this Warrant shall be equal to the Exercise Price, as defined in Section 2(b).

This Warrant is issued in connection with an offering (the "Offering") of Series B Convertible Preferred Stock, par value \$0.0001 per share, of the Company.

Section 1. Definitions. In addition to the terms defined elsewhere in this Agreement, the following terms have the meanings indicated in this Section 1:

“Affiliate” means any Person that, directly or indirectly through one or more intermediaries, controls or is controlled by or is under common control with a Person, as such terms are used in and construed under Rule 405 under the Securities Act.

“Business Day” means any day except any Saturday, any Sunday, any day which is a federal legal holiday in the United States or any day on which banking institutions in the State of New York are authorized or required by law or other governmental action to close.

“Closing Date” means the initial closing date of the Offering.

“Commission” means the United States Securities and Exchange Commission.

“Common Stock Equivalents” means any securities of the Company or the Subsidiaries which would entitle the holder thereof to acquire at any time Common Stock, including, without limitation, any debt, preferred stock, right, option, warrant or other instrument that is at any time convertible into or exercisable or exchangeable for, or otherwise entitles the holder thereof to receive, Common Stock

“Exchange Act” means the Securities Exchange Act of 1934, as amended, and the rules and regulations promulgated thereunder.

“Person” means an individual or corporation, partnership, trust, incorporated or unincorporated association, joint venture, limited liability company, joint stock company, government (or an agency or subdivision thereof) or other entity of any kind.

“Rule 144” means Rule 144 promulgated by the Commission pursuant to the Securities Act, as such Rule may be amended or interpreted from time to time, or any similar rule or regulation hereafter adopted by the Commission having substantially the same purpose and effect as such Rule.

“Securities Act” means the Securities Act of 1933, as amended, and the rules and regulations promulgated thereunder.

“Trading Day” means a day on which the NYSE American is open for trading.

“Trading Market” means any of the following markets or exchanges on which the Common Stock is listed or quoted for trading on the date in question: the NYSE American Market, the Nasdaq Capital Market, the Nasdaq Global Market, the Nasdaq Global Select Market, or the New York Stock Exchange (or any successors to any of the foregoing).

“Transfer Agent” means V Stock Transfer, LLC, the current transfer agent of the Company, with a mailing address of 18 Lafayette Place, Woodmere, New York 11598 and a facsimile number of (646) 536-3179, and any successor transfer agent of the Company.

“VWAP” means, for any date, the price determined by the first of the following clauses that applies: (a) if the Common Stock then listed or quoted on a Trading Market, the daily volume weighted average price of the Common Stock for such date (or the nearest preceding date) on the Trading Market on which the Common Stock is then listed or quoted as reported by Bloomberg L.P. (based on a Trading Day from 9:30 a.m. (New York City time) to 4:02 p.m. (New York City time)), (b) if OTCQB or OTCQX is not a Trading Market, the volume weighted average price of a share of Common Stock for such date (or the nearest preceding date) on the OTCQB or OTCQX as applicable, (c) if Common Stock is not then listed or quoted for trading on the OTCQB or OTCQX and if prices for Common Stock are then reported in the “Pink Sheets” published by OTC Markets Group, Inc. (or a similar organization or agency succeeding to its functions of reporting prices), the most recent bid price per share of Common Stock so reported, or (d) in all other cases, the fair market value of the Common Stock as determined by an independent appraiser selected in good faith by the Holder and reasonably acceptable to the Company, the fees and expenses of which shall be paid by the Company.

Section 2. Exercise.

a) Exercise of the purchase rights represented by this Warrant may be made, in whole or in part, at any time or times on or after the Initial Exercise Date and on or before the Termination Date by delivery to the Company (or such other office or agency of the Company as it may designate by notice in writing to the registered Holder at the address of the Holder appearing on the books of the Company) of a duly executed facsimile copy (or e-mail attachment) of the Notice of Exercise Form annexed hereto. Within two (2) Trading Days following the date of exercise as aforesaid, the Holder shall deliver the aggregate Exercise Price for the shares specified in the applicable Notice of Exercise by wire transfer or cashier’s check drawn on a United States bank unless the cashless exercise procedure specified in Section 2(c) below is specified in the applicable Notice of Exercise. No ink-original Notice of Exercise shall be required, nor shall any medallion guarantee (or other type of guarantee or notarization) of any Notice of Exercise form be required. Notwithstanding anything herein to the contrary, the Holder shall not be required to physically surrender this Warrant to the Company until the Holder has purchased all of the Warrant Shares available hereunder and the Warrant has been exercised in full, in which case, the Holder shall surrender this Warrant to the Company for cancellation within five (5) Trading Days of the date the final Notice of Exercise is delivered to the Company. Partial exercises of this Warrant resulting in purchases of a portion of the total number of Warrant Shares available hereunder shall have the effect of lowering the outstanding number of Warrant Shares purchasable hereunder in an amount equal to the applicable number of Warrant Shares purchased. The Holder and the Company shall maintain records showing the number of Warrant Shares purchased and the date of such purchases. The Company shall deliver any objection to any Notice of Exercise Form within two (2) Business Days of receipt of such notice. **The Holder and any assignee, by acceptance of this Warrant, acknowledge and agree that, by reason of the provisions of this paragraph, following the purchase of a portion of the Warrant Shares hereunder, the number of Warrant Shares available for purchase hereunder at any given time may be less than the amount stated on the face hereof.**

b) Exercise Price. The exercise price per share of the Common Stock under this Warrant shall be \$0.75, subject to adjustment hereunder (the “Exercise Price”).

c) Cashless Exercise. If at any time on or after the Initial Exercise Date, there is no effective registration statement registering, or the prospectus contained therein is not available for the issuance of the Warrant Shares to the Holder, then this Warrant may also be exercised, in whole or in part, at such time by means of a “cashless exercise” in which the Holder shall be entitled to receive the number of Warrant Shares equal to the quotient obtained by dividing [(A-B) (X)] by (A), where:

- (A) = the VWAP on the Trading Day immediately preceding the date on which Holder elects to exercise this Warrant by means of a “cashless exercise,” as set forth in the applicable Notice of Exercise;
- (B) = the Exercise Price of this Warrant, as adjusted hereunder; and
- (C) = the number of Warrant Shares that would be issuable upon exercise of this Warrant in accordance with the terms of this Warrant if such exercise were by means of a cash exercise rather than a cashless exercise.

If Warrant Shares are issued in such a “cashless exercise,” the parties acknowledge and agree that in accordance with Section 3(a)(9) of the Securities Act, the Warrant Shares shall take on the registered characteristics of the Warrants being exercised, and the holding period of the Warrants being exercised may be tacked on to the holding period of the Warrant Shares. The Company agrees not to take any position contrary to this Section 2(c).

Notwithstanding anything herein to the contrary, on the Termination Date, this Warrant shall be automatically exercised via cashless exercise pursuant to this Section 2(c).

d) Mechanics of Exercise.

i. Delivery of Warrant Shares Upon Exercise. The Company shall cause the Warrant Shares purchased hereunder to be transmitted by its Transfer Agent to the Holder by crediting the account of the Holder’s or its designee’s balance account with The Depository Trust Company through its Deposit or Withdrawal at Custodian system (“DWAC”) if the Company is then a participant in such system and either (A) there is an effective registration statement permitting the issuance of the Warrant Shares to or resale of the Warrant Shares by Holder, or (B) the Warrant Shares are eligible for resale by the Holder without volume or manner-of-sale limitations pursuant to Rule 144 and, in either case, the Warrant Shares have been sold by the Holder prior to the Warrant Share Delivery Date (as defined below), and otherwise by physical delivery of a certificate, registered in the Company’s share register in the name of the Holder or its designee, for the number of Warrant Shares to which the Holder is entitled pursuant to such exercise to the address specified by the Holder in the Notice of Exercise by the date that is two (2) Trading Days after the delivery to the Company of the Notice of Exercise (such date, the “Warrant Share Delivery Date”). If the Warrant Shares can be delivered via DWAC, the transfer agent shall have received from the Company, at the expense of the Company, any legal opinions or other documentation required by it to deliver such Warrant Shares without legend (subject to receipt by the Company of reasonable back up documentation from the Holder, including with respect to affiliate status) and, if applicable and requested by the Company prior to the Warrant Share Delivery Date, the transfer agent shall have received from the Holder a confirmation of sale of the Warrant Shares (provided the requirement of the Holder to provide a confirmation as to the sale of Warrant Shares shall not be applicable to the issuance of unlegended Warrant Shares upon a cashless exercise of this Warrant if the Warrant Shares are then eligible for resale pursuant to Rule 144(b)(1)). The Warrant Shares shall be deemed to have been issued, and Holder or any other person so designated to be named therein shall be deemed to have become a holder of record of such shares for all purposes, as of the date the Warrant has been exercised, with payment to the Company of the Exercise Price (or by cashless exercise, if permitted) and all taxes required to be paid by the Holder, if any, pursuant to Section 2(d)(vi) prior to the issuance of such shares, having been paid. If the Company fails for any reason to deliver to the Holder the Warrant Shares subject to a Notice of Exercise by the second Trading Day following the Warrant Share Delivery Date, the Company shall pay to the Holder, in cash, as liquidated damages and not as a penalty, for each \$1,000 of Warrant Shares subject to such exercise (based on the VWAP of the Common Stock on the date of the applicable Notice of Exercise), \$10 per Trading Day (increasing to \$20 per Trading Day on the fifth Trading Day after such liquidated damages begin to accrue) for each Trading Day after the second Trading Day following such Warrant Share Delivery Date until such Warrant Shares are delivered or Holder rescinds such exercise.

ii. Delivery of New Warrants Upon Exercise. If this Warrant shall have been exercised in part, the Company shall, at the request of a Holder and upon surrender of this Warrant certificate, at the time of delivery of the Warrant Shares, deliver to the Holder a new Warrant evidencing the rights of the Holder to purchase the unpurchased Warrant Shares called for by this Warrant, which new Warrant shall in all other respects be identical with this Warrant.

iii. Rescission Rights. If the Company fails to cause its Transfer Agent to deliver to the Holder the Warrant Shares pursuant to Section 2(d)(i) by the Warrant Share Delivery Date, then the Holder will have the right to rescind such exercise; provided, however, that the Holder shall be required to return any Warrant Shares or Common Stock subject to any such rescinded exercise notice concurrently with the return to Holder of the aggregate Exercise Price paid to the Company for such Warrant Shares and the restoration of Holder's right to acquire such Warrant Shares pursuant to this Warrant (including, issuance of a replacement warrant certificate evidencing such restored right).

iv. Compensation for Buy-In on Failure to Timely Deliver Warrant Shares Upon Exercise. In addition to any other rights available to the Holder, if the Company fails to cause its Transfer Agent to transmit to the Holder the Warrant Shares pursuant to an exercise on or before the Warrant Share Delivery Date, and if after such date the Holder is required by its broker to purchase (in an open market transaction or otherwise) or the Holder's brokerage firm otherwise purchases, shares of Common Stock to deliver in satisfaction of a sale by the Holder of the Warrant Shares which the Holder anticipated receiving upon such exercise (a "Buy-In"), then the Company shall (A) pay in cash to the Holder the amount, if any, by which (x) the Holder's total purchase price (including brokerage commissions, if any) for the shares of Common Stock so purchased exceeds (y) the amount obtained by multiplying (1) the number of Warrant Shares that the Company was required to deliver to the Holder in connection with the exercise at issue times (2) the price at which the sell order giving rise to such purchase obligation was executed, and (B) at the option of the Holder, either reinstate the portion of the Warrant and equivalent number of Warrant Shares for which such exercise was not honored (in which case such exercise shall be deemed rescinded) or deliver to the Holder the number of shares of Common Stock that would have been issued had the Company timely complied with its exercise and delivery obligations hereunder. For example, if the Holder purchases Common Stock having a total purchase price of \$11,000 to cover a Buy-In with respect to an attempted exercise of shares of Common Stock with an aggregate sale price giving rise to such purchase obligation of \$10,000, under clause (A) of the immediately preceding sentence the Company shall be required to pay the Holder \$1,000. The Holder shall provide the Company written notice indicating the amounts payable to the Holder in respect of the Buy-In and, upon request of the Company, evidence of the amount of such loss. Nothing herein shall limit a Holder's right to pursue any other remedies available to it hereunder, at law or in equity including, without limitation, a decree of specific performance and/or injunctive relief with respect to the Company's failure to timely deliver shares of Common Stock upon exercise of the Warrant as required pursuant to the terms hereof.



v. No Fractional Shares or Scrip. No fractional shares or scrip representing fractional shares shall be issued upon the exercise of this Warrant. As to any fraction of a share which the Holder would otherwise be entitled to purchase upon such exercise, the Company shall, at its election, either pay a cash adjustment in respect of such final fraction in an amount equal to such fraction multiplied by the Exercise Price or round up to the next whole share.

vi. Charges, Taxes and Expenses. Issuance of Warrant Shares shall be made without charge to the Holder for any issue or transfer tax or other incidental expense in respect of the issuance of such Warrant Shares, all of which taxes and expenses shall be paid by the Company, and such Warrant Shares shall be issued in the name of the Holder or in such name or names as may be directed by the Holder; provided, however, that in the event that Warrant Shares are to be issued in a name other than the name of the Holder, this Warrant when surrendered for exercise shall be accompanied by the Assignment Form attached hereto duly executed by the Holder and the Company may require, as a condition thereto, the payment of a sum sufficient to reimburse it for any transfer tax incidental thereto. The Company shall pay all transfer agent fees required for same-day processing of any Notice of Exercise and all fees to the Depository Trust Company (or another established clearing corporation performing similar functions) required for same-day electronic delivery of the Warrant Shares.

vii. Closing of Books. The Company will not close its stockholder books or records in any manner which prevents the timely exercise of this Warrant, pursuant to the terms hereof.

viii. Signature. This Section 2 and the exercise form attached hereto set forth the totality of the procedures required of the Holder in order to exercise this Warrant. Without limiting the preceding sentences, no ink-original exercise form shall be required, nor shall any medallion guarantee (or other type of guarantee or notarization) of any exercise form be required in order to exercise this Warrant. No additional legal opinion, other information or instructions shall be required of the Holder to exercise this Warrant. The Company shall honor exercises of this Warrant and shall deliver Shares underlying this Purchase Warrant in accordance with the terms, conditions and time periods set forth herein.

e) Holder's Exercise Limitations. The Company shall not effect any exercise of this Warrant, and a Holder shall not have the right to exercise any portion of this Warrant, pursuant to Section 2 or otherwise, to the extent that after giving effect to such issuance after exercise as set forth on the applicable Notice of Exercise, the Holder (together with the Holder's Affiliates, and any other Persons acting as a group together with the Holder or any of the Holder's Affiliates), would beneficially own in excess of the Beneficial Ownership Limitation (as defined below). For purposes of the foregoing sentence, the number of shares of Common Stock beneficially owned by the Holder and its Affiliates shall include the number of shares of Common Stock issuable upon exercise of this Warrant with respect to which such determination is being made, but shall exclude the number of shares of Common Stock which would be issuable upon (i) exercise of the remaining, nonexercised portion of this Warrant beneficially owned by the Holder or any of its Affiliates and (ii) exercise or conversion of the unexercised or nonconverted portion of any other securities of the Company (including, without limitation, any other Common Stock Equivalents) subject to a limitation on conversion or exercise analogous to the limitation contained herein beneficially owned by the Holder or any of its Affiliates. Except as set forth in the preceding sentence, for purposes of this Section 2(e), beneficial ownership shall be calculated in accordance with Section 13(d) of the Exchange Act and the rules and regulations promulgated thereunder, it being acknowledged by the Holder that the Company is not representing to the Holder that such calculation is in compliance with Section 13(d) of the Exchange Act and the Holder is solely responsible for any schedules required to be filed in accordance therewith. To the extent that the limitation contained in this Section 2(e) applies, the determination of whether this Warrant is exercisable (in relation to other securities owned by the Holder together with any Affiliates) and of which portion of this Warrant is exercisable shall be in the sole discretion of the Holder, and the submission of a Notice of Exercise shall be deemed to be the Holder's determination of whether this Warrant is exercisable (in relation to other securities owned by the Holder together with any Affiliates) and of which portion of this Warrant is exercisable, in each case subject to the Beneficial Ownership Limitation, and the Company shall have no obligation to verify or confirm the accuracy of such determination. In addition, a determination as to any group status as contemplated above shall be determined in accordance with Section 13(d) of the Exchange Act and the rules and regulations promulgated thereunder. For purposes of this Section 2(e), in determining the number of outstanding shares of Common Stock, a Holder may rely on the number of outstanding shares of Common Stock as reflected in (A) the Company's most recent periodic or annual report filed with the Commission, as the case may be, (B) a more recent public announcement by the Company or (C) a more recent written notice by the Company or the Company's Transfer Agent setting forth the number of shares of Common Stock outstanding. Upon the written or oral request of a Holder, the Company shall within two Trading Days confirm orally and in writing to the Holder the number of shares of Common Stock then outstanding. In any case, the number of outstanding shares of Common Stock shall be determined after giving effect to the conversion or exercise of securities of the Company, including this Warrant, by the Holder or its Affiliates since the date as of which such number of outstanding shares of Common Stock was reported. The "Beneficial Ownership Limitation" shall be 9.99% of the number of shares of the Common Stock outstanding immediately after giving effect to the issuance of shares of Common Stock issuable upon exercise of this Warrant. The Holder, upon notice to the Company, may increase or decrease the Beneficial Ownership Limitation provisions of this Section 2(e), provided that the Beneficial Ownership Limitation in no event exceeds 9.99% of the number of shares of the Common Stock outstanding immediately after giving effect to the issuance of shares of Common Stock upon exercise of this Warrant held by the Holder and the provisions of this Section 2(e) shall continue to apply. Any increase in the Beneficial Ownership Limitation will not be effective until the 61<sup>st</sup> day after such notice is delivered to the Company. The provisions of this paragraph shall be construed and implemented in a manner otherwise than in strict conformity with the terms of this Section 2(e) to correct this paragraph (or any portion hereof) which may be defective or inconsistent with the intended Beneficial Ownership Limitation herein contained or to make changes or supplements necessary or desirable to properly give effect to such limitation. The limitations contained in this paragraph shall apply to a successor holder of this Warrant.

### Section 3. Certain Adjustments.

a) Stock Dividends and Splits. If the Company, at any time while this Warrant is outstanding: (i) pays a stock dividend or otherwise makes a distribution or distributions on shares of its Common Stock or any other equity or equity equivalent securities payable in shares of Common Stock (which, for avoidance of doubt, shall not include any shares of Common Stock issued by the Company upon exercise of this Warrant), (ii) subdivides outstanding shares of Common Stock into a larger number of shares, (iii) combines (including by way of reverse stock split) outstanding shares of Common Stock into a smaller number of shares, or (iv) issues by reclassification of shares of the Common Stock any shares of capital stock of the Company, then in each case the Exercise Price shall be multiplied by a fraction of which the numerator shall be the number of shares of Common Stock (excluding treasury shares, if any) outstanding immediately before such event and of which the denominator shall be the number of shares of Common Stock outstanding immediately after such event, and the number of shares issuable upon exercise of this Warrant shall be proportionately adjusted such that the aggregate Exercise Price of this Warrant shall remain unchanged. Any adjustment made pursuant to this Section 3(a) shall become effective immediately after the record date for the determination of stockholders entitled to receive such dividend or distribution and shall become effective immediately after the effective date in the case of a subdivision, combination or re-classification. For the purposes of clarification, the Exercise Price of this Warrant will not be adjusted in the event that the Company or any Subsidiary thereof, as applicable, sells or grants any option to purchase, or sells or grants any right to reprice, or otherwise disposes of or issues (or announces any offer, sale, grant or any option to purchase or other disposition) any Common Stock or Common Stock Equivalents, at an effective price per share less than the Exercise Price then in effect.

b) Subsequent Rights Offerings. In addition to any adjustments pursuant to Section 3(a) above, if at any time the Company grants, issues or sells any Common Stock Equivalents or rights to purchase stock, warrants, securities or other property pro rata to the record holders of any class of shares of Common Stock (the "Purchase Rights"), then the Holder will be entitled to acquire, upon the terms applicable to such Purchase Rights, the aggregate Purchase Rights which the Holder could have acquired if the Holder had held the number of shares of Common Stock acquirable upon complete exercise of this Warrant (without regard to any limitations on exercise hereof, including without limitation, the Beneficial Ownership Limitation) immediately before the date on which a record is taken for the grant, issuance or sale of such Purchase Rights, or, if no such record is taken, the date as of which the record holders of shares of Common Stock are to be determined for the grant, issue or sale of such Purchase Rights (provided, however, to the extent that the Holder's right to participate in any such Purchase Right would result in the Holder exceeding the Beneficial Ownership Limitation, then the Holder shall not be entitled to participate in such Purchase Right to such extent (or beneficial ownership of such shares of Common Stock as a result of such Purchase Right to such extent) and such Purchase Right to such extent shall be held in abeyance for the Holder until such time, if ever, as its right thereto would not result in the Holder exceeding the Beneficial Ownership Limitation).

c) During such time as this Warrant is outstanding, if the Company shall declare or make any dividend (other than cash dividends) or other distribution of its assets (or rights to acquire its assets) to holders of shares of Common Stock, by way of return of capital or otherwise (including, without limitation, any distribution of shares or other securities, property or options by way of a dividend, spin off, reclassification, corporate rearrangement, scheme of arrangement or other similar transaction) (a “Distribution”), at any time after the issuance of this Warrant, then, in each such case, the Holder shall be entitled to participate in such Distribution to the same extent that the Holder would have participated therein if the Holder had held the number of shares of Common Stock acquirable upon complete exercise of this Warrant (without regard to any limitations on exercise hereof, including without limitation, the Beneficial Ownership Limitation) immediately before the date of which a record is taken for such Distribution, or, if no such record is taken, the date as of which the record holders of shares of Common Stock are to be determined for the participation in such Distribution (provided, however, to the extent that the Holder’s right to participate in any such Distribution would result in the Holder exceeding the Beneficial Ownership Limitation, then the Holder shall not be entitled to participate in such Distribution to such extent (or in the beneficial ownership of any shares of Common Stock as a result of such Distribution to such extent) and the portion of such Distribution shall be held in abeyance for the benefit of the Holder until such time, if ever, as its right thereto would not result in the Holder exceeding the Beneficial Ownership Limitation). To the extent that this Warrant has not been partially or completely exercised at the time of such Distribution, such portion of the Distribution shall be held in abeyance for the benefit of the Holder until the Holder has exercised this Warrant.

d) Fundamental Transaction. If, at any time while this Warrant is outstanding, (i) the Company, directly or indirectly, in one or more related transactions effects any merger or consolidation of the Company with or into another Person, (ii) the Company, directly or indirectly, effects any sale, lease, license, assignment, transfer, conveyance or other disposition of all or substantially all of its assets in one or a series of related transactions, (iii) any, direct or indirect, purchase offer, tender offer or exchange offer (whether by the Company or another Person) is completed pursuant to which holders of Common Stock are permitted to sell, tender or exchange their shares for other securities, cash or property and has been accepted by the holders of 50% or more of the outstanding Common Stock, (iv) the Company, directly or indirectly, in one or more related transactions effects any reclassification, reorganization or recapitalization of the Common Stock or any compulsory share exchange pursuant to which the Common Stock is effectively converted into or exchanged for other securities, cash or property, or (v) the Company, directly or indirectly, in one or more related transactions consummates a stock or share purchase agreement or other business combination (including, without limitation, a reorganization, recapitalization, spin-off or scheme of arrangement) with another Person or group of Persons whereby such other Person or group acquires more than 50% of the outstanding shares of Common Stock (not including any shares of Common Stock held by the other Person or other Persons making or party to, or associated or affiliated with the other Persons making or party to, such stock or share purchase agreement or other business combination) (each a “Fundamental Transaction”), then, upon any subsequent exercise of this Warrant, the Holder shall have the right to receive, for each Warrant Share that would have been issuable upon such exercise immediately prior to the occurrence of such Fundamental Transaction, at the option of the Holder (without regard to any limitation in Section 2(e) on the exercise of this Warrant), the number of shares of Common Stock of the successor or acquiring corporation or of the Company, if it is the surviving corporation, and any additional consideration (the “Alternate Consideration”) receivable by holders of Common Stock as a result of such Fundamental Transaction for each share of Common Stock for which this Warrant is exercisable immediately prior to such Fundamental Transaction (without regard to any limitation in Section 2(e) on the exercise of this Warrant). For purposes of any such exercise, the determination of the Exercise Price shall be appropriately adjusted to apply to such Alternate Consideration based on the amount of Alternate Consideration issuable in respect of one share of Common Stock in such Fundamental Transaction, and the Company shall apportion the Exercise Price among the Alternate Consideration in a reasonable manner reflecting the relative value of any different components of the Alternate Consideration. If holders of Common Stock are given any choice as to the securities, cash or property to be received in a Fundamental Transaction, then the Holder shall be given the same choice as to the Alternate Consideration it receives upon any exercise of this Warrant following such Fundamental Transaction. The Company shall cause any successor entity in a Fundamental Transaction in which the Company is not the survivor (the “Successor Entity”) to assume in writing all of the obligations of the Company under this Warrant in accordance with the provisions of this Section 3(d) pursuant to written agreements in form and substance reasonably satisfactory to the Holder and approved by the Holder (without unreasonable delay) prior to such Fundamental Transaction and shall, at the option of the Holder, deliver to the Holder in exchange for this Warrant a security of the Successor Entity evidenced by a written instrument substantially similar in form and substance to this Warrant which is exercisable for a corresponding number of shares of capital stock of such Successor Entity (or its parent entity) equivalent to the shares of Common Stock acquirable and receivable upon exercise of this Warrant (without regard to any limitations on the exercise of this Warrant) prior to such Fundamental Transaction, and with an exercise price which applies the exercise price hereunder to such shares of capital stock (but taking into account the relative value of the shares of Common Stock pursuant to such Fundamental Transaction and the value of such shares of capital stock, such number of shares of capital stock and such exercise price being for the purpose of protecting the economic value of this Warrant immediately prior to the consummation of such Fundamental Transaction), and which is reasonably satisfactory in form and substance to the Holder. Upon the occurrence of any such Fundamental Transaction, the Successor Entity shall succeed to, and be substituted for (so that from and after the date of such Fundamental Transaction, the provisions of this Warrant referring to the “Company” shall refer instead to the Successor Entity), and may exercise every right and power of the Company and shall assume all of the obligations of the Company under this Warrant with the same effect as if such Successor Entity had been named as the Company herein.

e) Calculations. All calculations under this Section 3 shall be made to the nearest cent or the nearest 1/100th of a share, as the case may be. For purposes of this Section 3, the number of shares of Common Stock deemed to be issued and outstanding as of a given date shall be the sum of the number of shares of Common Stock (excluding treasury shares, if any) issued and outstanding.

f) Notice to Holder.

i. Adjustment to Exercise Price. Whenever the Exercise Price is adjusted pursuant to any provision of this Section 3, the Company shall promptly mail to the Holder a notice setting forth the Exercise Price after such adjustment and any resulting adjustment to the number of Warrant Shares and setting forth a brief statement of the facts requiring such adjustment.

ii. Notice to Allow Exercise by Holder. If (A) the Company shall declare a dividend (or any other distribution in whatever form) on the Common Stock, (B) the Company shall declare a special nonrecurring cash dividend on or a redemption of the Common Stock, (C) the Company shall authorize the granting to all holders of the Common Stock rights or warrants to subscribe for or purchase any shares of capital stock of any class or of any rights, (D) the approval of any stockholders of the Company shall be required in connection with any reclassification of the Common Stock, any consolidation or merger to which the Company is a party, any sale or transfer of all or substantially all of the assets of the Company, or any compulsory share exchange whereby the Common Stock is converted into other securities, cash or property, or (E) the Company shall authorize the voluntary or involuntary dissolution, liquidation or winding up of the affairs of the Company, then, in each case, the Company shall cause to be mailed a notice to the Holder at its last address as it shall appear upon the Warrant Register (as defined below) of the Company, at least 20 calendar days prior to the applicable record or effective date hereinafter specified, stating (x) the date on which a record is to be taken for the purpose of such dividend, distribution, redemption, rights or warrants, or if a record is not to be taken, the date as of which the holders of the Common Stock of record to be entitled to such dividend, distributions, redemption, rights or warrants are to be determined or (y) the date on which such reclassification, consolidation, merger, sale, transfer or share exchange is expected to become effective or close, and the date as of which it is expected that holders of the Common Stock of record shall be entitled to exchange their shares of the Common Stock for securities, cash or other property deliverable upon such reclassification, consolidation, merger, sale, transfer or share exchange; provided that the failure to provide such notice or any defect therein shall not affect the validity of the corporate action required to be specified in such notice. To the extent that any notice provided hereunder constitutes, or contains, material, non-public information regarding the Company or any of the Subsidiaries, the Company shall simultaneously file such notice with the Commission pursuant to a Current Report on Form 8-K. The Holder shall remain entitled to exercise this Warrant during the period commencing on the date of such notice to the effective date of the event triggering such notice except as may otherwise be expressly set forth herein.

Section 4. Transfer of Warrant.

a) Transferability. Pursuant to FINRA Rule 5110(g)(1), neither this Warrant nor any Warrant Shares issued upon exercise of this Warrant shall be sold, transferred, assigned, pledged, or hypothecated, or be the subject of any hedging, short sale, derivative, put, or call transaction that would result in the effective economic disposition of the securities by any person for a period of 180 days immediately following the date of effectiveness or commencement of sales of the offering pursuant to which this Warrant is being issued, except the transfer of any security:

- i. by operation of law or by reason of reorganization of the Company;
- ii. to any FINRA member firm participating in the offering and the officers or partners thereof, if all securities so transferred remain subject to the lock-up restriction in this Section 4(a) for the remainder of the time period;
- iii. if the aggregate amount of securities of the Company held by the Holder or related person do not exceed 1% of the securities being offered;
- iv. that is beneficially owned on a pro-rata basis by all equity owners of an investment fund, provided that no participating member manages or otherwise directs investments by the fund, and participating members in the aggregate do not own more than 10% of the equity in the fund; or
- v. the exercise or conversion of any security, if all securities received remain subject to the lock-up restriction in this Section 4(a) for the remainder of the time period.

Subject to the foregoing restriction, any applicable securities laws and the conditions set forth in Section 4(d), this Warrant and all rights hereunder (including, without limitation, any registration rights) are transferable, in whole or in part, upon surrender of this Warrant at the principal office of the Company or its designated agent, together with a written assignment of this Warrant substantially in the form attached hereto duly executed by the Holder or its agent or attorney and funds sufficient to pay any transfer taxes payable upon the making of such transfer. Upon such surrender and, if required, such payment, the Company shall execute and deliver a new Warrant or Warrants in the name of the assignee or assignees, as applicable, and in the denomination or denominations specified in such instrument of assignment, and shall issue to the assignor a new Warrant evidencing the portion of this Warrant not so assigned, and this Warrant shall promptly be cancelled. Notwithstanding anything herein to the contrary, the Holder shall not be required to physically surrender this Warrant to the Company unless the Holder has assigned this Warrant in full, in which case, the Holder shall surrender this Warrant to the Company within three Trading Days of the date the Holder delivers an assignment form to the Company assigning this Warrant full. The Warrant, if properly assigned in accordance herewith, may be exercised by a new holder for the purchase of Warrant Shares without having a new Warrant issued.

b) New Warrants. This Warrant may be divided or combined with other Warrants upon presentation hereof at the aforesaid office of the Company, together with a written notice specifying the names and denominations in which new Warrants are to be issued, signed by the Holder or its agent or attorney. Subject to compliance with Section 4(a), as to any transfer which may be involved in such division or combination, the Company shall execute and deliver a new Warrant or Warrants in exchange for the Warrant or Warrants to be divided or combined in accordance with such notice. All Warrants issued on transfers or exchanges shall be dated the initial issuance date of this Warrant and shall be identical with this Warrant except as to the number of Warrant Shares issuable pursuant thereto.

c) Warrant Register. The Company shall register this Warrant, upon records to be maintained by the Company for that purpose (the “Warrant Register”), in the name of the record Holder hereof from time to time. The Company may deem and treat the registered Holder of this Warrant as the absolute owner hereof for the purpose of any exercise hereof or any distribution to the Holder, and for all other purposes, absent actual notice to the contrary.

d) Representation by the Holder. The Holder, by the acceptance hereof, represents and warrants that it is acquiring this Warrant and, upon any exercise hereof, will acquire the Warrant Shares issuable upon such exercise, for its own account and not with a view to or for distributing or reselling such Warrant Shares or any part thereof in violation of the Securities Act or any applicable state securities law, except pursuant to sales registered or exempted under the Securities Act.

#### Section 5. Miscellaneous.

a) No Rights as Stockholder Until Exercise. This Warrant does not entitle the Holder to any voting rights, dividends or other rights as a stockholder of the Company prior to the exercise hereof as set forth in Section 2(d)(i).

b) Loss, Theft, Destruction or Mutilation of Warrant. The Company covenants that upon receipt by the Company of evidence reasonably satisfactory to it of the loss, theft, destruction or mutilation of this Warrant or any certificate relating to the Warrant Shares, and in case of loss, theft or destruction, of indemnity or security reasonably satisfactory to it (which, in the case of the Warrant, shall not include the posting of any bond), and upon surrender and cancellation of such Warrant or stock certificate, if mutilated, the Company will make and deliver a new Warrant or stock certificate of like tenor and dated as of such cancellation, in lieu of such Warrant or stock certificate.

c) Saturdays, Sundays, Holidays, etc. If the last or appointed day for the taking of any action or the expiration of any right required or granted herein shall not be a Trading Day, then, such action may be taken or such right may be exercised on the next succeeding Trading Day.

#### d) Authorized Shares.

The Company covenants that, during the period the Warrant is outstanding, it will reserve from its authorized and unissued Common Stock a sufficient number of shares to provide for the issuance of the Warrant Shares upon the exercise of any purchase rights under this Warrant. The Company will take all such reasonable action as may be necessary to assure that such Warrant Shares may be issued as provided herein without violation of any applicable law or regulation, or of any requirements of the Trading Market upon which the Common Stock may be listed. The Company covenants that all Warrant Shares which may be issued upon the exercise of the purchase rights represented by this Warrant will, upon exercise of the purchase rights represented by this Warrant and payment for such Warrant Shares in accordance herewith, be duly authorized, validly issued, fully paid and nonassessable and free from all taxes, liens and charges created by the Company in respect of the issue thereof (other than taxes in respect of any transfer occurring contemporaneously with such issue).

Except and to the extent as waived or consented to by the Holder, the Company shall not by any action, including, without limitation, amending its certificate of incorporation or through any reorganization, transfer of assets, consolidation, merger, dissolution, issue or sale of securities or any other voluntary action, avoid or seek to avoid the observance or performance of any of the terms of this Warrant, but will at all times in good faith assist in the carrying out of all such terms and in the taking of all such actions as may be necessary or appropriate to protect the rights of Holder as set forth in this Warrant against impairment. Without limiting the generality of the foregoing, the Company will (i) not increase the par value of any Warrant Shares above the amount payable therefor upon such exercise immediately prior to such increase in par value, (ii) take all such action as may be necessary or appropriate in order that the Company may validly and legally issue fully paid and nonassessable Warrant Shares upon the exercise of this Warrant, and (iii) shall, so long as any of the Warrants are outstanding, take all action necessary to reserve and keep available out of its authorized and unissued shares of Common Stock, solely for the purpose of effecting the exercise of the Warrants, the number of shares of Common Stock as shall from time to time be necessary to effect the exercise of the Warrants then outstanding (without regard to any limitations on exercise).

e) Governing Law. This Warrant shall be governed by and construed and enforced in accordance with, and all questions concerning the construction, validity, interpretation and performance of this Warrant shall be governed by, the internal laws of the State of New York, without giving effect to any choice of law or conflict of law provision or rule (whether of the State of New York or any other jurisdictions) that would cause the application of the laws of any jurisdictions other than the State of New York.

f) Restrictions. The Holder acknowledges that the Warrant Shares acquired upon the exercise of this Warrant, if not registered, and the Holder does not utilize cashless exercise, will have restrictions upon resale imposed by state and federal securities laws.

g) Nonwaiver and Expenses. No course of dealing or any delay or failure to exercise any right hereunder on the part of Holder shall operate as a waiver of such right or otherwise prejudice the Holder's rights, powers or remedies. Without limiting any other provision of this Warrant or the Placement Agency Agreement, if the Company willfully and knowingly fails to comply with any provision of this Warrant, which results in any material damages to the Holder, the Company shall pay to the Holder such amounts as shall be sufficient to cover any costs and expenses including, but not limited to, reasonable attorneys' fees, including those of appellate proceedings, incurred by the Holder in collecting any amounts due pursuant hereto or in otherwise enforcing any of its rights, powers or remedies hereunder.

h) Notices. Any notice, request or other document required or permitted to be given or delivered to the Holder by the Company shall be delivered in accordance with the notice provisions of the Placement Agency Agreement.



i) Limitation of Liability. No provision hereof, in the absence of any affirmative action by the Holder to exercise this Warrant to purchase Warrant Shares, and no enumeration herein of the rights or privileges of the Holder, shall give rise to any liability of the Holder for the purchase price of any Common Stock or as a stockholder of the Company, whether such liability is asserted by the Company or by creditors of the Company.

j) Remedies. The Holder, in addition to being entitled to exercise all rights granted by law, including recovery of damages, will be entitled to specific performance of its rights under this Warrant. The Company agrees that monetary damages would not be adequate compensation for any loss incurred by reason of a breach by it of the provisions of this Warrant and hereby agrees to waive and not to assert the defense in any action for specific performance that a remedy at law would be adequate. Notwithstanding the foregoing or anything else herein to the contrary, if the Company is for any reason unable to issue and deliver Warrant Shares upon exercise of this Warrant as required pursuant to the terms hereof, the Company shall have no obligation to “net cash settle” this Warrant.

k) Successors and Assigns. Subject to applicable securities laws, this Warrant and the rights and obligations evidenced hereby shall inure to the benefit of and be binding upon the successors and permitted assigns of the Company and the successors and permitted assigns of Holder. The provisions of this Warrant are intended to be for the benefit of any Holder from time to time of this Warrant and shall be enforceable by the Holder or holder of Warrant Shares.

l) Amendment. This Warrant may be modified or amended or the provisions hereof waived with the written consent of the Company and the Holder.

m) Severability. Wherever possible, each provision of this Warrant shall be interpreted in such manner as to be effective and valid under applicable law, but if any provision of this Warrant shall be prohibited by or invalid under applicable law, such provision shall be ineffective to the extent of such prohibition or invalidity, without invalidating the remainder of such provisions or the remaining provisions of this Warrant.

n) Headings. The headings used in this Warrant are for the convenience of reference only and shall not, for any purpose, be deemed a part of this Warrant.

*(Signature Page Follows)*

IN WITNESS WHEREOF, the Company has caused this Warrant to be executed by its officer thereunto duly authorized as of the date first above indicated.

**MATINAS BIOPHARMA HOLDINGS, INC.**

By: \_\_\_\_\_

Name: Jerome D. Jabbour

Title: Chief Executive Officer

**NOTICE OF EXERCISE**

**TO: MATINAS BIOPHARMA HOLDINGS, INC.**

(1) The undersigned hereby elects to purchase \_\_\_\_\_ Warrant Shares of the Company pursuant to the terms of the attached Warrant (only if exercised in full), and tenders herewith payment of the exercise price in full, together with all applicable transfer taxes, if any.

(2) Payment shall take the form of (check applicable box):

- in lawful money of the United States; or
- if permitted the cancellation of such number of Warrant Shares as is necessary, in accordance with the formula set forth in subsection 2(c), to exercise this Warrant with respect to the maximum number of Warrant Shares purchasable pursuant to the cashless exercise procedure set forth in subsection 2(c).

(3) Please register and issue said Warrant Shares in the name of the undersigned or in such other name as is specified below:

\_\_\_\_\_

The Warrant Shares shall be delivered to the following DWAC Account Number or by physical delivery of a certificate to:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

[SIGNATURE OF HOLDER]

Name of Investing Entity: \_\_\_\_\_

*Signature of Authorized Signatory of Investing Entity:* \_\_\_\_\_

Name of Authorized Signatory: \_\_\_\_\_

Title of Authorized Signatory: \_\_\_\_\_

Date: \_\_\_\_\_

**ASSIGNMENT FORM**

(To assign the foregoing warrant, execute this form and supply required information. Do not use this form to exercise the warrant.)

FOR VALUE RECEIVED, [\_\_\_\_] all of or [\_\_\_\_\_] Warrant Shares of the foregoing Warrant and all rights evidenced thereby are hereby assigned to

\_\_\_\_\_ whose address is  
\_\_\_\_\_  
\_\_\_\_\_.

Dated: \_\_\_\_\_, \_\_\_\_\_

Holder's Signature: \_\_\_\_\_

Holder's Address: \_\_\_\_\_

NOTE: The signature to this Assignment Form must correspond with the name as it appears on the face of the Warrant, without alteration or enlargement or any change whatsoever. Officers of corporations and those acting in a fiduciary or other representative capacity should file proper evidence of authority to assign the foregoing Warrant.



June 19, 2018

Matinas BioPharma Holdings, Inc.  
1545 Route 206 South, Suite 302  
Bedminster, New Jersey 07921

Ladies and Gentlemen:

We have acted as counsel to Matinas BioPharma Holdings, Inc., a Delaware corporation (the “**Company**”), in connection with (i) the preparation and filing of the Registration Statement on Form S-3 (Registration No. 333-217106) filed with the Securities and Exchange Commission (the “**Commission**”) under the Securities Act of 1933, as amended (the “**Securities Act**”), (as so filed and as amended, the “**Registration Statement**”) and the related prospectus contained in the Registration Statement (the “**Base Prospectus**”) and (ii) the preparation and filing of the prospectus supplement, dated June 18, 2018 (the “**Prospectus Supplement**”) relating to the issuance and sale by the Company of up to 8,000 shares (the “**Preferred Shares**”) of the Company’s Series B Convertible Preferred Stock, par value \$0.0001 per share (the “**Series B Preferred Stock**”), which are convertible into an aggregate of up to 16,000,000 shares of the Company’s common stock, par value \$0.0001 per share (the “**Common Stock**”) of the Company (the “**Conversion Shares**”) and an additional up to 7,200,000 shares of Common Stock issuable upon payment of dividends under the Series B Preferred Stock (the “**Dividend Shares**”). The Preferred Shares, the Conversion Shares and the Dividend Shares are referred to herein collectively as the “**Securities.**”

The Securities are to be issued and sold by the Company pursuant to the Placement Agency Agreement, dated as of June 19, 2018 (the “**Placement Agency Agreement**”), between the Company and ThinkEquity, a Division of Fordham Financial Management, Inc., as placement agent (the “**Placement Agent**”), the form of which is being filed with the Commission as Exhibit 10.1 to the Company’s Current Report on Form 8-K, filed on the date hereof.

In connection with this opinion, we have examined and relied upon the Registration Statement, the Placement Agency Agreement, and the Certificate of Designations designating the Series B Preferred Stock (the “**Certificate of Designations**”). We have also (i) investigated such questions of law, (ii) examined originals or certified, conformed or reproduction copies of such agreements, instruments, documents and records of the Company, such certificates of public officials and such other documents and (iii) received such information from officers and representatives of the Company as we have deemed necessary or appropriate for the purposes of this opinion.

In all such examinations, we have assumed the legal capacity of all natural persons, the genuineness of all signatures, the authenticity of original and certified documents and the conformity to original or certified documents of all copies submitted to us as conformed or reproduction copies. As to various questions of fact relevant to the opinion expressed herein, we have relied upon, and assume the accuracy of, the representations and warranties set forth in the Placement Agency Agreement, and certificates and oral or written statements and other information of or from public officials and officers and representatives of the Company.

Based upon the foregoing, and subject to the assumptions, limitations and qualifications set forth herein, we are of the opinion that: (i) the Preferred Shares, when issued and sold in accordance with the terms and conditions set forth in the Placement Agency Agreement and the Certificate of Designations against payment therefor, will be duly authorized, validly issued, fully paid and non-assessable; (ii) the Conversion Shares have been duly authorized for issuance and, when issued upon the conversion of the Preferred Shares in accordance with the terms of the Certificate of Designations, will be validly issued, fully paid and non-assessable; and (iii) the Dividend Shares have been duly authorized for issuance and, when issued and delivered in accordance with the terms of the Certificate of Designations, will be validly issued, fully paid and non-assessable.

The opinion expressed herein is limited to the applicable provisions of the General Corporation Law of the State of Delaware (the “**DGCL**”), as currently in effect, and reported judicial decisions interpreting such provisions of the DGCL.

The opinion expressed herein is limited to the matters stated herein and no opinion is implied or may be inferred beyond the matters expressly stated herein. We undertake no obligation to supplement this letter if any applicable laws change after the date hereof or if we become aware of any facts that might change the opinion expressed herein after that date or for any other reason.

We hereby consent to the filing of this opinion as Exhibit 5.1 to the Current Report on Form 8-K filed by the Company on the date hereof and which is incorporated by reference into the Registration Statement and to the references to this firm under the caption “**Legal Matters**” in the Prospectus Supplement. In giving these consents, we do not admit that we are “**experts**” within the meaning of Section 11 of the Securities Act or within the category of persons whose consent is required by Section 7 of the Securities Act.

Very truly yours,

*/s/ Lowenstein Sandler LLP*  
\_\_\_\_\_  
Lowenstein Sandler LLP

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MATINAS BIOPHARMA HOLDINGS, INC.

(a Delaware corporation)

8,000 Shares of Series B Convertible Preferred Stock

**PLACEMENT AGENCY AGREEMENT**

June 19, 2018

ThinkEquity  
A Division of Fordham Financial Management, Inc.  
17 State Street, 22<sup>nd</sup> Floor  
New York, NY 10004

Ladies and Gentlemen:

Matinas BioPharma Holdings, Inc., a Delaware corporation (the “*Company*”), proposes to issue and sell to the purchasers (each, a “*Purchaser*” and, collectively, the “*Purchasers*”), pursuant to the terms and conditions of this Placement Agent Agreement (this “*Agreement*”) up to an aggregate of 8,000 shares (the “*Shares*”) of Series B Convertible Preferred Stock, par value \$0.0001 per share (the “*Series B Preferred Stock*”). The offering and sale of the Shares of Series B Preferred Stock is hereinafter referred to as the “*Offering*.” The Company hereby confirms its agreement with ThinkEquity, a division of Fordham Financial Management, Inc. (the “*Placement Agent*”) to act as Placement Agent in accordance with the terms and conditions hereof.

Each Share of Series B Preferred Stock will have a stated capital of \$1,000 per share and will initially be convertible into 2,000 shares of the Company’s common stock, \$0.0001 par value per share (the “*Common Stock*”). Such Common Stock of the Company into which the Shares are convertible are hereinafter referred to as the “*Conversion Shares*.” In addition, dividends on the Series B Preferred Stock will be payable in shares of Common Stock pursuant to the Certificate of Designation (as defined below). Such Common Stock of the Company which may be issued as dividends on the Shares are hereinafter referred to as the “*Dividend Shares*.” The Shares and, where applicable, the Conversion Shares and the Dividend Shares, are collectively referred to as the “*Securities*.”

The terms of the Series B Preferred Stock will be set forth in the Certificate of Designation (the “*Certificate of Designation*”) to be filed by the Company with the Secretary of State of the State of Delaware as an amendment to the Company’s Certificate of Incorporation.



The Company has filed with the Securities and Exchange Commission (the “**Commission**”) a shelf registration statement on Form S-3 (No. 333-217106) covering the public offering and sale of certain securities, including the Securities, under the Securities Act of 1933, as amended (the “**1933 Act**”) and the rules and regulations promulgated thereunder (the “**1933 Act Regulations**”). As used herein “**Registration Statement**,” means such registration statement as amended by any post-effective amendments thereto, including the exhibits and any schedules thereto, the documents incorporated or deemed to be incorporated by reference therein pursuant to Item 12 of Form S-3 under the 1933 Act and the documents otherwise deemed to be a part thereof pursuant to Rule 430B under the 1933 Act Regulations (the “**Rule 430B Information**”). Each preliminary prospectus used in connection with the offering of the Securities, including the documents incorporated or deemed to be incorporated by reference therein pursuant to Item 12 of Form S-3 under the 1933 Act, are collectively referred to herein as a “**preliminary prospectus**.” Promptly after execution and delivery of this Agreement, the Company will prepare and file a final prospectus relating to the Securities in accordance with the provisions of Rule 424(b) (“**Rule 424(b)**”) of the 1933 Act Regulations. Any registration statement filed pursuant to Rule 462(b) of the 1933 Act Regulations is herein called the “**Rule 462(b) Registration Statement**” and, after such filing, the term “**Registration Statement**” shall include the Rule 462(b) Registration Statement. The final prospectus, in the form first furnished or made available to the Placement Agent for use in connection with the offering of the Securities, including the documents incorporated or deemed to be incorporated by reference therein pursuant to Item 12 of Form S-3 under the 1933 Act, are collectively referred to herein as the “**Prospectus**.” For purposes of this Agreement, all references to the Registration Statement, any preliminary prospectus, the Prospectus or any amendment or supplement to any of the foregoing shall be deemed to include the copy filed with the Commission pursuant to its Electronic Data Gathering, Analysis and Retrieval system or any successor system (“**EDGAR**”).

SECTION 1. Agreement to Act as Placement Agent; Placement of Securities. On the basis of the representations and warranties herein contained and subject to the terms and conditions herein set forth:

(a) *Appointment of Placement Agent*. The Company hereby authorizes the Placement Agent to act as its exclusive agent to solicit offers for the purchase of all or part of the Securities from the Company in connection with the proposed Offering. Until the Closing Date (as defined in Section 1(e) below) or earlier upon termination of this Agreement pursuant to Section 9, the Company shall not, without the prior written consent of the Placement Agent (which consent shall not be unreasonably withheld, delayed or conditioned), solicit or accept offers to purchase the Securities otherwise than through the Placement Agent.

(b) *Reasonable Efforts*. The Company hereby acknowledges that the Placement Agent has agreed, as agent of the Company, to use its reasonable efforts to solicit offers to purchase the Securities from the Company on the terms and subject to the conditions set forth in the Prospectus. The Placement Agent shall use reasonable efforts to assist the Company in obtaining performance by each Purchaser whose offer to purchase Securities has been solicited by the Placement Agent and accepted by the Company, but the Placement Agent shall not, except as otherwise provided in this Agreement, be obligated to disclose the identity of any potential purchaser or have any liability to the Company in the event any such purchase is not consummated for any reason. Under no circumstances will the Placement Agent be obligated to underwrite or purchase any Securities for its own account and, in soliciting purchases of the Securities, the Placement Agent shall act solely as the Company’s agent and not as principal.

(c) *Solicitation of Offers*. Subject to the provisions of this Section 1, offers for the purchase of the Securities may be solicited by the Placement Agent as agent for the Company at such times and in such amounts as the Placement Agent deems reasonably advisable. The Placement Agent shall communicate to the Company, orally or in writing, each reasonable offer to purchase Securities received by it as agent of the Company. The Company shall have the sole right to accept offers to purchase Securities and may reject any such offer, in whole or in part. The Company shall have the right, in its sole discretion, to reject any offer to purchase Securities received by it, in whole or in part, and any such rejection shall not be deemed a breach of this Agreement.

(d) *Initial Public Offering Price*. The Securities are being sold to the Purchasers at the following initial public offering price: \$1,000.00 per Share of Series B Preferred Stock.

(e) *Payment*. Payment of the purchase price for, and delivery of, the Securities (the “**Closing**”) shall be made at the offices of Meister Seelig & Fein LLP (“**Placement Agent Counsel**”), 125 Park Avenue, 7<sup>th</sup> Floor, New York, New York 10017, or at such other place as shall be agreed upon by the Placement Agent and the Company, at 10:00 a.m. (New York City time) on June 21, 2018, or such other time not later than ten Business Days after such date as shall be agreed upon by the Placement Agent and the Company (such time and date of payment and delivery being herein called “**Closing Date**”). The term “**Business Day**” means any day other than a Saturday, a Sunday or a legal holiday or a day on which banking institutions are authorized or obligated by law to close in New York, New York.

At the Closing, the Company shall deliver the Shares purchased on such Closing Date to the Placement Agent, which delivery may be made through the facilities of the Depository Trust Company (“**DTC**”). Following the delivery of the Shares by the Placement Agent to the Purchasers against payment therefor, the Placement Agent shall wire transfer, in immediately available funds, the aggregate Purchase Price of the Shares purchased on such Closing Date, net of the Placement Fee (as defined Section 1(f) below) and the expenses set forth in Section 4 of this Agreement, to the Company. All actions taken at the Closing shall be deemed to have occurred simultaneously on the Closing Date. Any Securities for which payment has not been received by the Company, to the extent they have been delivered to the Placement Agent, shall be returned to the Company.

No Shares which the Company has agreed to sell pursuant to this Agreement shall be deemed to have been purchased and paid for, or issued and sold by the Company, until the appropriate corresponding number of Shares shall have been delivered to the Purchasers or the Placement Agent via DTC against payment therefor. If the Company shall default in its obligations to deliver the Shares to the Purchasers or the Placement Agent on behalf of the Purchasers as per such instructions, the Company shall indemnify and hold the Placement Agent harmless against any loss, claim, damage or liability directly or indirectly arising from or as a result of such default by the Company.

(f) *Placement Fee*. As compensation for services rendered, on the Closing Date, the Placement Agent shall deduct a cash fee (the “**Cash Fee**”) in an aggregate amount equal to seven percent (7%) of the gross proceeds received from the sale of the Securities on the Closing Date. The Cash Fee is hereinafter referred to herein as the “**Placement Fee**”. The Placement Agent may retain other brokers or dealers to act as sub-agents on its behalf in connection with the Offering, subject to the Company’s prior consent, which consent shall not be unreasonably withheld, the fees of which shall be paid out of the Placement Fee. Each broker or dealer retained by the Placement Agent to act as a sub-agent in the Offering shall be entitled to rely on the representations, warranties and agreements of the Company contained in this Agreement as of such sub-agent was a party hereto.

(g) *Purchase Warrants*. The Company hereby agrees to issue and sell to the Placement Agent (and/or its designees) at the Closing Date an option (“*Placement Agent’s Warrant*”) for the purchase of up to an aggregate of 240,000 shares of Common Stock, representing 1.5% of the Conversion Shares underlying the Shares sold in the Offering (assuming the sale of 8,000 shares of Series B Preferred Stock in the Offering), for an aggregate purchase price of \$100.00. The Placement Agent’s Warrant agreement, in the form attached hereto as Exhibit A (the “*Placement Agent’s Warrant Agreement*”), shall be exercisable, in whole or in part, commencing on a date which is one (1) year after the Closing Date and expiring on the five-year anniversary of the Closing Date at an initial exercise price per share of Common Stock of \$0.75, which is equal to 150% of the initial conversion price of the Shares. The Placement Agent’s Warrant Agreement and the shares of Common Stock issuable upon exercise thereof are hereinafter referred to together as the “*Placement Agent’s Securities*,” and the shares of Common Stock included in the Placement Agent’s Securities are sometimes referred to as the “*Warrant Shares*.” The Placement Agent understands and agrees that there are significant restrictions pursuant to FINRA Rule 5110 against transferring the Placement Agent’s Warrant Agreement and the Warrant Shares during the one (1) year period following the Closing Date and by its acceptance thereof shall agree that it will not sell, transfer, assign, pledge or hypothecate the Placement Agent’s Warrant Agreement, or any portion thereof, or be the subject of any hedging, short sale, derivative, put or call transaction that would result in the effective economic disposition of such securities for a period of one (1) year following the Closing Date to anyone other than (i) an selling agent or a selected dealer in connection with the Offering, or (ii) a bona fide officer or partner of the Placement Agent or of any such selling agent or selected dealer; and only if any such transferee agrees to the foregoing lock-up restrictions.

## SECTION 2. Representations and Warranties.

(a) *Representations and Warranties by the Company*. The Company meets the requirements for use of Form S-3 under the 1933 Act, including General Instruction I.B.1 of such Form S-3. The Company represents and warrants to the Placement Agent and the Purchasers as of the date hereof, the Applicable Time (as defined in Section 2(a)(iii)) and the Closing Date, and agrees with the Placement Agent and the Purchasers, as follows:

(i) Registration Statement and Prospectuses. The Registration Statement has been declared effective under the 1933 Act. No stop order suspending the effectiveness of the Registration Statement has been issued under the 1933 Act, no order preventing or suspending the use of any preliminary prospectus or the Prospectus has been issued and no proceedings for any of those purposes have been instituted or are pending or, to the Company’s knowledge, contemplated. The Company has complied with each request (if any) from the Commission for additional information.

The Registration Statement, at the time it became effective, complied in all material respects with the requirements of the 1933 Act and the 1933 Act Regulations. Each preliminary prospectus, the Prospectus and any amendment or supplement thereto, at the time each was filed with the Commission, complied in all material respects with the requirements of the 1933 Act and the 1933 Act Regulations. Each preliminary prospectus delivered by the Company to the Placement Agent for use in connection with the Offering and the Prospectus was or will be identical to the electronically transmitted copies thereof filed with the Commission pursuant to EDGAR, except to the extent permitted by Regulation S-T.

The documents incorporated or deemed to be incorporated by reference in the Registration Statement, any preliminary prospectus and the Prospectus, when they became effective or at the time they were or hereafter are filed with the Commission, complied and will comply in all material respects with the requirements of the Securities Exchange Act of 1934, as amended (the “*1934 Act*”) and the rules and regulations of the Commission under the 1934 Act (the “*1934 Act Regulations*”).

(ii) Accurate Disclosure. Neither the Registration Statement nor any amendment thereto, at its effective time, or at the Closing Date, contained, contains or will contain an untrue statement of a material fact or omitted, omits or will omit to state a material fact required to be stated therein or necessary to make the statements therein not misleading. As of the Applicable Time, neither (A) the General Disclosure Package nor (B) any individual Issuer Limited Use Free Writing Prospectus, when considered together with the General Disclosure Package, included an untrue statement of a material fact or omitted to state a material fact necessary in order to make the statements therein, in the light of the circumstances under which they were made, not misleading. Neither the Prospectus nor any amendment or supplement thereto (including any prospectus wrapper), as of its date, at the time of any filing with the Commission pursuant to Rule 424(b), or at the Closing Date, included, includes or will include an untrue statement of a material fact or omitted, omits or will omit to state a material fact necessary in order to make the statements therein, in the light of the circumstances under which they were made, not misleading. The documents incorporated or deemed to be incorporated by reference in the Registration Statement, the General Disclosure Package and the Prospectus, at the time the Registration Statement became effective or when such documents incorporated by reference were filed with the Commission, as the case may be, when read together with the other information in the Registration Statement, the General Disclosure Package, any Limited Use Free Writing Prospectus or the Prospectus, as the case may be, did not and will not include an untrue statement of a material fact or omit to state a material fact required to be stated therein or necessary to make the statements therein not misleading.

The representations and warranties in this Section 2(a)(ii) shall not apply to statements in or omissions from the Registration Statement (or any amendment thereto), the General Disclosure Package, the Prospectus (or any amendment or supplement thereto) or any Issuer Free Writing Prospectus made in reliance upon and in conformity with written information furnished to the Company by the Placement Agent expressly for use therein. For purposes of this Agreement, the only information so furnished shall be the statements contained in the paragraph under the heading “Plan of Distribution” in the section of the Prospectus (collectively, the “*Placement Agent’s Information*”).

(iii) Issuer Free Writing Prospectuses. No Issuer Free Writing Prospectus will be used in connection with the Offering.

As used in this Section 2 and elsewhere in this Agreement:

“**Applicable Time**” means 8:00 a.m., New York City time, on the date of this Agreement or such other time as agreed by the Company and the Placement Agent.

“**General Disclosure Package**” means any Issuer General Use Free Writing Prospectuses issued at or prior to the Applicable Time, the most recent preliminary prospectus that is distributed to prospective purchasers prior to the Applicable Time and the information included on Schedule A hereto, all considered together.

“**Issuer Free Writing Prospectus**” means any “issuer free writing prospectus,” as defined in Rule 433 of the 1933 Act Regulations (“**Rule 433**”), including, without limitation, any “free writing prospectus” (as defined in Rule 405 of the 1933 Act Regulations (“**Rule 405**”)) relating to the Securities that is (i) required to be filed with the Commission by the Company, (ii) a “road show that is a written communication” within the meaning of Rule 433(d)(8)(i), whether or not required to be filed with the Commission, or (iii) exempt from filing with the Commission pursuant to Rule 433(d)(5)(i) because it contains a description of the Securities or of the Offering that does not reflect the final terms, in each case in the form filed or required to be filed with the Commission or, if not required to be filed, in the form retained in the Company’s records pursuant to Rule 433(g).

“**Issuer General Use Free Writing Prospectus**” means any Issuer Free Writing Prospectus that is intended for general distribution to prospective purchasers (other than a “*bona fide* electronic road show,” as defined in Rule 433 (the “**Bona Fide Electronic Road Show**”)), as evidenced by its being specified in Schedule B hereto.

“**Issuer Limited Use Free Writing Prospectus**” means any Issuer Free Writing Prospectus that is not an Issuer General Use Free Writing Prospectus.

All references in this Agreement to financial statements and schedules and other information which is “contained,” “included” or “stated” (or other references of like import) in the Registration Statement, any preliminary prospectus or the Prospectus shall be deemed to include all such financial statements and schedules and other information incorporated or deemed incorporated by reference in the Registration Statement, any preliminary prospectus or the Prospectus, as the case may be, prior to the execution and delivery of this Agreement; and all references in this Agreement to amendments or supplements to the Registration Statement, any preliminary prospectus or the Prospectus shall be deemed to include the filing of any document under the Securities Exchange Act of 1934, as amended, and the rules and regulations promulgated thereunder (collectively, the “**1934 Act**”), incorporated or deemed to be incorporated by reference in the Registration Statement, any preliminary prospectus or the Prospectus, as the case may be, at or after the execution and delivery of this Agreement.

(iv) Intentionally omitted.

(v) Independent Accountants. EisnerAmper LLP, who certified financial statements and supporting schedules incorporated by reference in the Registration Statement, the General Disclosure Package and the Prospectus, are independent public accountants as required by the 1933 Act, the 1933 Act Regulations and the Public Company Accounting Oversight Board.

(vi) Financial Statements: Non-GAAP Financial Measures. The financial statements included in the Registration Statement, the General Disclosure Package and the Prospectus, together with the related schedules and notes, present fairly, in all material respects, the financial position of the Company and its subsidiaries, at the dates indicated and its results of operations, stockholders' equity and cash flows for the periods specified; said financial statements have been prepared in conformity with U.S. generally accepted accounting principles ("*GAAP*") applied on a consistent basis throughout the periods involved (except for any preparation of non-GAAP measures). The supporting schedules, if any, present fairly, in all material respects, in accordance with GAAP the information required to be stated therein. The pro forma financial information and the related notes thereto included or incorporated by reference in each of the Registration Statement, the General Disclosure Package and the Prospectus has been prepared in accordance with the Commission's rules and guidance with respect to pro forma financial information, and the assumptions underlying such pro forma financial information are reasonable and are set forth in each of the Registration Statement, the General Disclosure Package and the Prospectus. Except as included therein, no other historical or pro forma financial statements or supporting schedules are required to be included in the Registration Statement, the General Disclosure Package or the Prospectus under the 1933 Act or the 1933 Act Regulations.

(vii) No Material Adverse Change in Business. Except as otherwise stated therein, since the respective dates as of which information is given in the Registration Statement, the General Disclosure Package or the Prospectus, (A) there has been no material adverse change in the condition, financial or otherwise, or in the earnings, business affairs or business prospects of the Company or any of its subsidiaries, whether or not arising in the ordinary course of business (a "*Material Adverse Effect*"), (B) there have been no transactions entered into by the Company or any of its subsidiaries, other than those in the ordinary course of business, which are material to the Company, and (C) there has been no dividend or distribution of any kind declared, paid or made by the Company or any of its subsidiaries on any class of its capital stock.

(viii) Good Standing of the Company. The Company is a corporation duly organized, validly existing and in good standing under the laws of the State of Delaware. The Company has requisite corporate power and authority to own, lease and operate its properties and to conduct its business as described in the Registration Statement, the General Disclosure Package and the Prospectus and to enter into and perform its obligations under this Agreement; and the Company is duly qualified as a foreign corporation to transact business and is in good standing in each other jurisdiction in which such qualification is required, whether by reason of the ownership or leasing of property or the conduct of business, except where the failure so to qualify or to be in good standing would not result in a Material Adverse Effect.

(ix) Subsidiaries. Each of the Company's subsidiaries has been duly organized and is validly existing as a corporation or other entity in good standing under the laws of its jurisdiction of organization, with requisite power and authority to own or lease its properties and conduct its business as described in the Registration Statement, the General Disclosure Package and the Prospectus. Each of the Company's subsidiaries is duly qualified to transact business in all jurisdictions in which the conduct of its business requires such qualification, except where the failure to be so qualified would not have a Material Adverse Effect. All of the issued shares of capital stock or other ownership interest of each of the subsidiaries have been duly authorized and validly issued, are fully paid and non-assessable and are owned directly or indirectly by the Company, free and clear of all liens, encumbrances, equities or claims, except for such liens, encumbrances, equities or claims as would not, individually or in the aggregate, reasonably be expected to have a Material Adverse Effect. The Company does not own or control, directly or indirectly, any corporation, association or other entity other than the subsidiaries listed in Schedule D hereto (each, a "*subsidiary*," and collectively, the "*subsidiaries*").

(x) Contracts Affecting Capital. There are no transactions, arrangements or other relationships between and/or among the Company, any of its affiliates (as such term is defined in Rule 405 of the 1933 Act Regulations) and any unconsolidated entity, including, but not limited to, any structured finance, special purpose or limited purpose entity that could reasonably be expected to materially affect the Company's or its subsidiaries' liquidity or the availability of or requirements for their capital resources required to be described or incorporated by reference in the Registration Statement, the General Disclosure Package and the Prospectus which have not been described or incorporated by reference as required.

(xi) Loans to Directors or Officers. There are no outstanding loans, advances (except normal advances for business expenses in the ordinary course of business) or guarantees or indebtedness by the Company or its subsidiaries to or for the benefit of any of the officers or directors of the Company, its subsidiaries or any of their respective family members, except as disclosed in the Registration Statement, the General Disclosure Package and the Prospectus.

(xii) Smaller Reporting Company: Emerging Growth Company. As of the time of the initial filing of the Registration Statement, the Company was a "smaller reporting company," as defined in Rule 12b-2 of the 1934 Act Regulations. As of the date of this Agreement, the Company is an "emerging growth company," as defined in Rule 12b-2 of the 1934 Act Regulations.

(xiii) Capitalization. The Company has an authorized capitalization as set forth in the Registration Statement, the General Disclosure Package and the Prospectus as of the date or dates set forth therein. The outstanding shares of capital stock of the Company have been duly authorized and validly issued and are fully paid and non-assessable. None of the outstanding shares of capital stock of the Company were issued in violation of the preemptive or other similar rights of any securityholder of the Company. Except as described in or expressly contemplated by the Registration Statement, the General Disclosure Package and the Prospectus, there are no outstanding rights (including, without limitation, pre-emptive rights), warrants or options to acquire, or instruments convertible into or exchangeable for, any shares of capital stock or other equity interest in the Company, or any contract, commitment, agreement, understanding or arrangement of any kind relating to the issuance of any capital stock of the Company, any such convertible or exchangeable securities or any such rights, warrants or options.

(xiv) Stock Options— With respect to the outstanding stock options (the “*Stock Options*”) granted pursuant to the stock-based compensation plans of the Company (the “*Company Stock Plans*”), (i) each Stock Option intended to qualify as an “incentive stock option” under Section 422 of the Internal Revenue Code of 1986, as amended (the “*Code*”), so qualified, (ii) each grant of a Stock Option was duly authorized no later than the date on which the grant of such Stock Option was by its terms to be effective (the “*Grant Date*”) by all necessary corporate action, including, as applicable, approval by the board of directors of the Company (or a duly constituted and authorized committee thereof) and any required stockholder approval by the necessary number of votes or written consents, and the award agreement governing such grant (if any) was duly executed and delivered by each party thereto, (iii) each such grant was made in accordance with the terms of the Company Stock Plans and all other applicable laws and regulatory rules or requirements, except where the failure to comply with such laws, regulatory rules or requirements would not result in a Material Adverse Effect, and (iv) each such grant was properly accounted for in accordance with GAAP in the financial statements (including the related notes) of the Company included in the Registration Statement, the General Disclosure Package and the Prospectus, to the extent required under GAAP to be accounted for in such financial statements.

(xv) Authorization of Agreements. This Agreement and the Placement Agent’s Warrant Agreement have been duly authorized, executed and delivered by the Company.

(xvi) Authorization of Certificate of Designation. The Certificate of Designation, the proposed form of which has been furnished to you, has been duly authorized by the Company and will have been duly executed and delivered by the Company and duly filed with the Secretary of State of the State of Delaware before the Closing Date. The holders of the Series B Preferred Stock will have the rights set forth in the Certificate of Designation upon filing of the Certificate of Designation with the Secretary of State of the State of Delaware.

(xvii) Authorization and Description of Securities. The Shares to be purchased by the Purchasers from the Company and the Placement Agent’s Securities to be purchased by the Placement Agent from the Company have been duly authorized for issuance and sale to the Purchasers and the Placement Agent pursuant to this Agreement and, when issued and delivered by the Company pursuant to this Agreement against payment of the consideration set forth herein, will be duly and validly issued, fully paid and non-assessable and will have the rights, preferences and priorities set forth in the Company’s Certificate of Incorporation (including the Certificate of Designation). The Conversion Shares have been duly authorized and reserved for issuance pursuant to the terms of the Shares, and when issued by the Company upon valid conversion of the Shares, will be duly and validly issued, fully paid and nonassessable. The Dividend Shares have been duly authorized and reserved for issuance pursuant to the terms of the Shares, and when issued by the Company in payment of dividends on the Shares, will be duly and validly issued, fully paid and nonassessable. The Warrant Shares have been duly authorized and reserved for issuance and when issued by the Company pursuant to the terms of the Placement Agent’s Warrant Agreement, will be duly and validly issued, fully paid and nonassessable. The issuance of the Shares, Conversion Shares, Dividend Shares and Placement Agent’s Securities is not subject to any preemptive or other similar rights of any securityholder of the Company other than those rights that have been disclosed in the Registration Statement, the General Disclosure Package and the Prospectus and have been waived. The capital stock of the Company conforms in all material respects to all statements relating thereto contained in the Registration Statement, the General Disclosure Package and the Prospectus. No holder of Securities or the Placement Agent’s Securities will be subject to personal liability solely by reason of being such a holder.



(xviii) Registration Rights. There are no persons with registration rights or other similar rights to have any securities registered for sale pursuant to the Registration Statement or otherwise registered for sale or sold by the Company under the 1933 Act, other than those rights that have been disclosed in the Registration Statement, the General Disclosure Package and the Prospectus and have been waived or satisfied.

(xix) Absence of Violations, Defaults and Conflicts. The Company and each of its subsidiaries is not (A) in violation of its charter or by-laws or other applicable organizational or governing documents, (B) in default in the performance or observance of any obligation, agreement, covenant or condition contained in any contract, indenture, mortgage, deed of trust, loan or credit agreement, note, lease or other agreement or instrument to which the Company or any of its subsidiaries is a party or by which it may be bound or to which any of the properties or assets of the Company or any of its subsidiaries is subject (collectively, “*Agreements and Instruments*”), except for such defaults that would not reasonably be expected to, singly or in the aggregate, result in a Material Adverse Effect, or (C) in violation of any law, statute, rule, regulation, judgment, order, writ or decree of any arbitrator, court, governmental body, regulatory body, administrative agency or other authority, body or agency having jurisdiction over the Company, any of its subsidiaries or any of their respective properties, assets or operations (each, a “*Governmental Entity*”), except for such violations that would not reasonably be expected to, singly or in the aggregate, result in a Material Adverse Effect. The execution, delivery and performance of this Agreement, the Placement Agent’s Warrant Agreement and the consummation of the transactions contemplated herein and therein and in the Registration Statement, the General Disclosure Package and the Prospectus (including the issuance and sale of the Securities and the use of the proceeds from the sale of the Securities as described therein under the caption “Use of Proceeds” in the Prospectus) and compliance by the Company with its obligations hereunder and under the Placement Agent’s Warrant Agreement and the Certificate of Designation have been duly authorized by all necessary corporate action and do not and will not, whether with or without the giving of notice or passage of time or both, conflict with or constitute a breach of, or default or Repayment Event (as defined below) under, or result in the creation or imposition of any lien, charge or encumbrance upon any properties or assets of the Company or any of its subsidiaries pursuant to, the Agreements and Instruments (except for such conflicts, breaches, defaults or Repayment Events or liens, charges or encumbrances that would not reasonably be expected to, singly or in the aggregate, result in a Material Adverse Effect), nor will such action result in any violation of (i) the provisions of the charter, by-laws or similar organization or governing document of the Company or any of its subsidiaries or (ii) any law, statute, rule, regulation, judgment, order, writ or decree of any Governmental Entity, except with respect to clause (ii), such violations as would not reasonably be expected to, singly or in the aggregate, result in a Material Adverse Effect. As used herein, a “*Repayment Event*” means any event or condition which gives the holder of any note, debenture or other evidence of indebtedness (or any person acting on such holder’s behalf) the right to require the repurchase, redemption or repayment of all or a portion of such indebtedness by the Company or any of its subsidiaries.

(xx) Absence of Labor Dispute. No labor dispute with the employees of the Company or any of its subsidiaries exists or, to the knowledge of the Company, is threatened, and the Company has no knowledge of any existing or imminent labor dispute by the employees of any of its principal suppliers, manufacturers, customers or contractors.

(xxi) Absence of Proceedings. Except as disclosed in the Registration Statement, the General Disclosure Package and the Prospectus, there is no action, suit, proceeding, inquiry or investigation before or brought by any Governmental Entity now pending or, to the knowledge of the Company, threatened against the Company or any of its subsidiaries, which would reasonably be expected to, singly or in the aggregate, result in a Material Adverse Effect, or which would reasonably be expected to, singly or in the aggregate, materially and adversely affect the consummation of the transactions contemplated in this Agreement or the performance by the Company of its obligations hereunder.

(xxii) Accuracy of Exhibits. There are no contracts or documents which are required to be described in the Registration Statement, the General Disclosure Package or the Prospectus or to be filed as exhibits to the Registration Statement which have not been so described and filed as required.

(xxiii) Absence of Further Requirements. No filing with, or authorization, approval, consent, license, order, registration, qualification or decree of, any Governmental Entity is necessary or required for the performance by the Company of its obligations hereunder, in connection with the offering, issuance or sale of the Securities hereunder or the consummation of the transactions contemplated by this Agreement and as contemplated in the Registration Statement, the General Disclosure Package and the Prospectus, except such as have been already obtained or as may be required under the 1933 Act, the 1933 Act Regulations, the 1934 Act, the 1934 Act Regulations, the rules of the NYSE American (the “*Exchange*”) or state securities laws.

(xxiv) Possession of Licenses and Permits. The Company and each of its subsidiaries possesses such permits, licenses, certificates, approvals, clearances, consents and other authorizations (collectively, “**Governmental Licenses**”) issued by the appropriate Governmental Entities necessary to conduct the business now operated by them, except where the failure so to possess would not reasonably be expected to, singly or in the aggregate, result in a Material Adverse Effect. The Company and each of its subsidiaries is in compliance with the terms and conditions of all Governmental Licenses and, to the Company’s knowledge, no event has occurred which allows, or after notice or lapse of time would allow, revocation or termination thereof or result in any other material impairment of the rights of the holder of any Government License, except where the failure so to comply would not reasonably be expected to, singly or in the aggregate, result in a Material Adverse Effect. All of the Governmental Licenses are valid and in full force and effect. Neither the Company nor any of its subsidiaries (a) has received notice of any ongoing claim, action, suit, proceeding, hearing, enforcement, investigation, arbitration or other action from any U.S. or non-U.S. Governmental Entity or third party alleging that any product, operation or activity is in violation of any Governmental Licenses and has no knowledge that any such Governmental Entity or third party is considering any such claim, litigation, arbitration, action, suit, investigation or proceeding; (b) has received notice that any Governmental Entity has taken, is taking or intends to take regulatory action, and has no knowledge that any Governmental Entity is considering such action; and (c) is a party to any corporate integrity agreement, deferred prosecution agreement, monitoring agreement, consent decree, settlement order, or similar agreements, or has any reporting obligations pursuant to any such agreement, plan or correction or other remedial measure entered into with any Governmental Entity.

(xxv) Title to Property. The Company and each of its subsidiaries has good and marketable title to all real property owned by it and good title or valid leases to all personal property owned by it, in each case, free and clear of all mortgages, pledges, liens, security interests, claims, restrictions or encumbrances (except for customary easements and rights of way) of any kind except such as (A) are described in the Registration Statement, the General Disclosure Package and the Prospectus or (B) do not, singly or in the aggregate, materially affect the value of such property and do not materially interfere with the use made and proposed to be made of such property by the Company and its subsidiaries; and all of the leases and subleases material to the business of the Company and that of its subsidiaries and under which the Company or any of its subsidiaries holds properties described in the Registration Statement, the General Disclosure Package or the Prospectus, are in full force and effect, and neither the Company nor any of its subsidiaries has received any written notice of any material claim of any sort that has been asserted by anyone adverse to the rights of the Company or any of its subsidiaries under any of the leases or subleases mentioned above, or affecting or questioning the rights of the Company or any of its subsidiaries to the continued possession of the leased or subleased premises under any such lease or sublease.

(xxvi) Possession of Intellectual Property. Except as would not reasonably be expected to have a Material Adverse Effect, (i) the Company and each of its subsidiaries owns all right, title and interest in or otherwise have the right to use all patents, inventions, copyrights, know-how (including trade secrets and other unpatented and/or unpatentable proprietary or confidential information, systems or procedures), trademarks, service marks, trade names and other intellectual property rights (collectively, “**Intellectual Property**”) that is necessary for, used or held for use in, or otherwise exploited in connection with, the conduct of the business now operated by them and as proposed to be operated, and (ii) to the Company’s knowledge, neither the Company nor any of its subsidiaries is infringing, misappropriating, diluting or otherwise violating the Intellectual Property of any third party. Except as disclosed in the Registration Statement, the General Disclosure Package and the Prospectus or as would not reasonably be expected to have a Material Adverse Effect, (i) no action, suit, claim, or other proceeding is pending, or to the Company’s knowledge, is threatened, alleging that the Company or any of its subsidiaries is infringing, misappropriating, diluting, or otherwise violating the Intellectual Property of any third party in any respect, and (ii) no action, suit, claim, or other proceeding is pending, or to the Company’s knowledge, is threatened, challenging the validity, enforceability, scope, registration, ownership or use of any Intellectual Property of the Company or any of its subsidiaries that is, singly or in the aggregate, necessary to its business (with the exception of office actions in connection with applications for the registration or issuance of such Intellectual Property).

(xxvii) Environmental Laws. Except as described in the Registration Statement, the General Disclosure Package and the Prospectus or would not reasonably be expected to, singly or in the aggregate, result in a Material Adverse Effect, (A) neither the Company nor any of its subsidiaries is in violation of any federal, state, local or foreign statute, law, rule, regulation, ordinance, code, policy or rule of common law or any judicial or administrative interpretation thereof, including any judicial or administrative order, consent, decree or judgment, relating to pollution or protection of human health, the environment (including, without limitation, ambient air, surface water, groundwater, land surface or subsurface strata) or wildlife, including, without limitation, laws and regulations relating to the release or threatened release of chemicals, pollutants, contaminants, wastes, toxic substances, hazardous substances, petroleum or petroleum products, asbestos-containing materials or mold (collectively, “**Hazardous Materials**”) or to the manufacture, processing, distribution, use, treatment, storage, disposal, transport or handling of Hazardous Materials (collectively, “**Environmental Laws**”), (B) the Company and each of its subsidiaries has all permits, authorizations and approvals required under any applicable Environmental Laws and is in compliance with their requirements, (C) there are no pending or, to the knowledge of the Company, threatened administrative, regulatory or judicial actions, suits, demands, demand letters, claims, liens, notices of noncompliance or violation, investigation or proceedings relating to any Environmental Law against the Company or any of its subsidiaries and (D) to the knowledge of the Company, there are no existing events, conditions or facts that would reasonably be expected to form the basis of an order for clean-up or remediation, or an action, suit or proceeding by any private party or Governmental Entity, against or affecting the Company or any of its subsidiaries relating to Hazardous Materials or any Environmental Laws.

(xxviii) Disclosure Controls. Except as described in the Registration Statement, the General Disclosure Package and the Prospectus, the Company maintains an effective system of “disclosure controls and procedures” (as defined in Rule 13a-15(e) of the 1934 Act) that complies with the requirements of the 1934 Act and that has been designed to ensure that information required to be disclosed by the Company in reports that it files or submits under the 1934 Act is recorded, processed, summarized and reported within the time periods specified in the Commission’s rules and forms, including controls and procedures designed to ensure that such information is accumulated and communicated to the Company’s management as appropriate to allow timely decisions regarding required disclosure.

(xxix) Accounting Controls. Except as described in the Registration Statement, the General Disclosure Package and the Prospectus, the Company maintains effective internal control over financial reporting (as defined under Rule 13a-15 and 15d-15 of the 1934 Act Regulations) and a system of internal accounting controls sufficient to provide reasonable assurances that (A) transactions are executed in accordance with management's general or specific authorization; (B) transactions are recorded as necessary to permit preparation of financial statements in conformity with GAAP and to maintain accountability for assets; (C) access to assets is permitted only in accordance with management's general or specific authorization; (D) the recorded accountability for assets is compared with the existing assets at reasonable intervals and appropriate action is taken with respect to any differences and (E) the interactive data in eXtensible Business Reporting Language incorporated by reference in the Registration Statement, the General Disclosure Package and the Prospectus fairly presents the information called for in all material respects and is prepared in accordance with the Commission's rules and guidelines applicable thereto. Except as described in the Registration Statement, the General Disclosure Package and the Prospectus, since the end of the Company's most recent audited fiscal year, there has been (1) no material weakness in the Company's internal control over financial reporting (whether or not remediated) and (2) no change in the Company's internal control over financial reporting that has materially affected, or is reasonably likely to materially affect, the Company's internal control over financial reporting.

(xxx) Payment of Taxes. All United States federal income tax returns of the Company and each of its subsidiaries required by law to be filed have been filed and all taxes shown by such returns or otherwise assessed, which are due and payable, have been paid, except assessments against which appeals have been or will be promptly taken and as to which adequate reserves have been provided other than as would not reasonably be expected to, singly or in the aggregate, have a Material Adverse Effect. The Company and each of its subsidiaries has filed all other tax returns that are required to have been filed by them pursuant to applicable foreign, state, local or other law except insofar as the failure to file such returns would not result in a Material Adverse Effect, and have paid all taxes due pursuant to such returns or pursuant to any assessment received by the Company or any such subsidiary, except for such taxes, if any, as are being contested in good faith and as to which adequate reserves have been established by the Company or any such subsidiary, other than as would not reasonably be expected to, singly or in the aggregate, have a Material Adverse Effect. Except as disclosed in the Registration Statement, the General Disclosure Package and the Prospectus, the charges, accruals and reserves on the books of the Company in respect of any income and corporation tax liability for any years not finally determined are believed to be adequate to meet any assessments or re-assessments for additional income tax for any years not finally determined, except to the extent of any inadequacy that would not reasonably be expected to result in a Material Adverse Effect.

(xxxii) Insurance. The Company carries or is entitled to the benefits of insurance, with reputable insurers, in such amounts and covering such risks as is reasonably prudent and customary in the businesses in which it is engaged, and all such insurance is in full force and effect. The Company has no reason to believe that it will not be able (A) to renew its existing insurance coverage as and when such policies expire or (B) to obtain comparable coverage from similar institutions as may be necessary or appropriate to conduct its business as now conducted and at a cost that would not result in a Material Adverse Effect. The Company has not been denied the issuance of any material insurance policies which it has sought or for which it has applied in the prior three years, except for any applications still pending.

(xxxiii) Investment Company Act. The Company is not required, and upon the issuance and sale of the Securities as herein contemplated and the application of the net proceeds therefrom as described in the Registration Statement, the General Disclosure Package and the Prospectus will not be required, to register as an “investment company” under the Investment Company Act of 1940, as amended (the “*1940 Act*”).

(xxxiv) Absence of Manipulation. Neither the Company nor any affiliate of the Company has taken, nor will the Company or any affiliate take, directly or indirectly, any action which is designed, or would reasonably be expected, to cause or result in, or which constitutes, the stabilization or manipulation of the price of any security of the Company to facilitate the sale or resale of the Securities.

(xxxv) No Integration. The Company has not sold or issued any securities that would be integrated with the Offering pursuant to the 1933 Act, the 1933 Act Regulations or the interpretations thereof by the Commission.

(xxxvi) ERISA. Other than as would not, singly or in the aggregate, reasonably be expected to result in a Material Adverse Effect and except as disclosed in the Registration Statement, the General Disclosure Package and the Prospectus, (i) no “employee benefit plan” (as defined in Section 3(3) of ERISA), for which the Company would have any liability (whether absolute or contingent) (each a “*Plan*”) has experienced a failure to satisfy the “minimum funding standard” (as defined in Section 302 of the Employee Retirement Income Security Act of 1974, as amended, (“*ERISA*”) or Section 412 of the Internal Revenue Code of 1986, as amended (the “*Code*”)), or other event of the kind described in Section 4043(c) of ERISA (other than events with respect to which the 30-day notice requirement under Section 4043 of ERISA has been waived) or any similar minimum funding failure event with respect to any Plan (other than a Plan that under applicable law is required to be funded by a trust or funding vehicle maintained exclusively by a governmental authority) that is maintained outside of the United States primarily for the benefit of persons substantially all of whom are nonresident aliens (ii) each Plan is in compliance in all respects with applicable law, including, without limitation, ERISA and the Code; (iii) other than in the ordinary course, neither the Company nor any trade or business, whether or not incorporated, that, together with the Company, would be deemed to be a “single employer” within the meaning of Section 4001(b)(1) of ERISA or Section 414(b), 414(c), 414(m) or 414(o) of the Code has incurred or reasonably expects to incur any liability with respect to any Plan (A) under Title IV of ERISA or (B) in respect of any post-employment health, medical or life insurance benefits for former, current or future employees of the Company, except as required to avoid excise tax under Section 4980B of the Code and except, on a case by case basis, limited extensions of health insurance benefits (for a period of no more than 18 months post-employment) to former employees receiving severance payments from the Company; and (iv) each Plan that is intended to be qualified under Section 401(a) of the Code is so qualified and nothing has occurred, whether by action or by failure to act, which could cause the loss of such qualification. The Company is not, nor at any time during the last three years has the Company been, a party to any collective bargaining agreement or other labor agreement with respect to employees of the Company. There are no pending, or, to the Company’s knowledge, threatened, activities or proceedings by any labor union or similar entity to organize any employees of the Company. No labor dispute with, or labor strike, work stoppage or other material labor disturbance by, the employees of the Company exists or to the Company’s knowledge is imminent.

(xxxvi) Foreign Corrupt Practices Act. Neither the Company, any of its subsidiaries nor, to the knowledge of the Company, any director, officer, agent, employee, affiliate or other person acting on behalf of the Company has taken any action, directly or indirectly, that would result in a violation by such persons of the Foreign Corrupt Practices Act of 1977, as amended, and the rules and regulations thereunder (the “*FCPA*”), including, without limitation, making use of the mails or any means or instrumentality of interstate commerce corruptly in furtherance of an offer, payment, promise to pay or authorization of the payment of any money, or other property, gift, promise to give, or authorization of the giving of anything of value to any “foreign official” (as such term is defined in the FCPA) or any foreign political party or official thereof or any candidate for foreign political office, in contravention of the FCPA and the Company, its subsidiaries and, to the knowledge of the Company, its and their respective affiliates have conducted their businesses in compliance with the FCPA and have instituted and maintain policies and procedures designed to ensure, and which are reasonably expected to continue to ensure, continued compliance therewith.

(xxxvii) Money Laundering Laws. The operations of the Company and its subsidiaries are and have been conducted at all times in compliance with applicable financial recordkeeping and reporting requirements of the Currency and Foreign Transactions Reporting Act of 1970, as amended, the money laundering statutes of all applicable jurisdictions, the rules and regulations thereunder and any related or similar rules, regulations or guidelines, issued, administered or enforced by any Governmental Entity (collectively, the “*Money Laundering Laws*”); and no action, suit or proceeding by or before any Governmental Entity involving the Company or any of its subsidiaries with respect to the Money Laundering Laws is pending or, to the knowledge of the Company, threatened.

(xxxviii) OFAC. Neither the Company, any of its subsidiaries nor, to the knowledge of the Company, its or their respective directors, officers, agents, employees, affiliates or Placement Agents (each, a “**Person**” ) are currently the subject of sanctions administered or enforced by the United States Government, including, without limitation, the U.S. Department of the Treasury’s Office of Foreign Assets Control (“**OFAC**”), the United Nations Security Council, the European Union, Her Majesty’s Treasury, or other relevant sanctions authority applicable to the Company and its subsidiaries (collectively, “**Sanctions**”), nor is the Company or any of its subsidiaries located, organized or resident in a country or territory that is the subject of Sanctions; and the Company does not intend to, directly or indirectly, use the proceeds of the sale of the Securities, or lend, contribute or otherwise make available such proceeds to any subsidiaries, joint venture partners or other Person, to fund any activities of or business with any Person, or in any country or territory, that, at the time of such funding, is the subject of Sanctions or in any other manner that will result in a violation by any Person (including any Person participating in the transaction, whether as underwriter, advisor, purchaser or otherwise) of Sanctions.

(xxxix) Lending Relationship. Except as disclosed in the Registration Statement, the General Disclosure Package and the Prospectus, the Company (A) does not have any material lending or other relationship with any bank or lending affiliate of any underwriter and (B) does not intend to use any of the proceeds from the sale of the Securities to repay any outstanding debt owed to any affiliate of any underwriter.

(xl) Statistical and Market-Related Data. Any statistical and market-related data included in the Registration Statement, the General Disclosure Package or the Prospectus are based on or derived from sources that the Company believes, after reasonable inquiry, to be reliable and accurate in all material respects and, to the extent required, the Company has obtained the written consent to the use of such data from such sources.

(xli) Accuracy of Descriptions. The statements set forth in the Registration Statement, the General Disclosure Package and the Prospectus under the captions “Description of the Securities We Are Offering” and “Description of Capital Stock,” insofar as they purport to constitute a summary of the terms of the Series A Preferred Stock of the Company, the Series B Preferred Stock and the Common Stock (including the Conversion Shares, the Dividend Shares and the Warrant Shares) are accurate, complete and fair summaries in all material respects.

(xlii) Stock Exchange Listing. The Common Stock is registered pursuant to Section 12(b) or 12(g) of the 1934 Act and is listed on the Exchange; the Company has taken no action designed to, or likely to have the effect of, terminating the registration of the Common Stock under the 1934 Act or delisting the Common Stock from the Exchange; the Company has not received any notice that it is out of compliance with the listing or maintenance requirements of the Exchange and the Company is, and will continue to be, in material compliance with all such listing and maintenance requirements; and the Company has not received any notification that the Commission or the Exchange is contemplating terminating the registration of the Common Stock under the 1934 Act or delisting the Common Stock from the Exchange.

(xliii) Maintenance of Rating. The Company does not have any securities rated by any “nationally recognized statistical rating organization” (as defined for purposes of Rule 436(g) under the 1933 Act).

(xliv) Related Party Transactions. There are no business relationships or related-party transactions involving the Company, any of its subsidiaries or any other person required to be described in the Registration Statement, any preliminary prospectus, the Prospectus and the General Disclosure Package which have not been described as required. The General Disclosure Package contains in all material respects the same description of the matters set forth in the preceding sentence contained in the Prospectus.



(xlv) Board of Directors. At least one member of the Audit Committee of the Board of Directors of the Company qualifies as an “audit committee financial expert,” as such term is defined under Regulation S-K and the listing rules of the Exchange. In addition, at least a majority of the persons serving on the Board of Directors qualify as “independent,” as defined under the listing rules of the Exchange.

(xlvi) Brokers. Except for the Placement Agent commissions payable to the Placement Agent as described in the Registration Statement, the General Disclosure Package and the Prospectus, there is no broker, finder or other party that is entitled to receive from the Company any brokerage or finder’s fee or other fee or commission as a result of any transactions contemplated by this Agreement.

(xlvii) Margin Rules and Securities. The application of the proceeds received by the Company from the issuance, sale and delivery of the Securities as described in the Registration Statement, the General Disclosure Package and the Prospectus will not violate Regulation T, U or X of the Board of Governors of the Federal Reserve System or any other regulation of such Board of Governors. Further, the Company owns no “margin securities” as that term is defined in Regulation U of the Board of Governors, and none of the proceeds of Offering will be used, directly or indirectly, for the purpose of purchasing or carrying any margin security, for the purpose of reducing or retiring any indebtedness which was originally incurred to purchase or carry any margin security or for any other purpose which might cause any of the shares of Common Stock to be considered a “purpose credit” within the meanings of Regulation T, U or X of the Federal Reserve Board.

(xlviii) Forward-Looking Statements. No forward-looking statement (within the meaning of Section 27A of the 1933 Act) contained in the Registration Statement, the General Disclosure Package or the Prospectus has been made or reaffirmed by the Company without a reasonable basis or has been disclosed by the Company other than in good faith.

(xlix) Sarbanes-Oxley Act. There is and has been no failure on the part of the Company or, to the knowledge of the Company, any of the Company’s directors or officers, in their capacities as such, to comply with any applicable provision of the Sarbanes-Oxley Act and the rules and regulations promulgated in connection therewith, including Section 402 related to loans.

(l) Lock-Up Agreements. Schedule C hereto contains a complete and accurate list of the Company’s officers, directors and certain key stockholders (collectively, the “**Lock-Up Parties**”). The Company has caused each of the Lock-Up Parties to deliver to the Placement Agent an executed Lock-Up Agreement, in the form attached hereto as Exhibit B (the “**Lock-Up Agreement**”), prior to the execution of this Agreement.

(li) Transactions Affecting Disclosure to FINRA.

- a. FINRA Affiliation. Except as disclosed in the Registration Statement, the General Disclosure Package and the Prospectus, there are no affiliations or associations between any member of FINRA and any of the Company's officers, directors or 5% or greater securityholders ("*Insiders*").
- b. Finder's Fees. Except as described in the Registration Statement, the General Disclosure Package and the Prospectus, there are no claims, payments, arrangements, agreements or understandings relating to the payment of a finder's, consulting or origination fee by the Company or any Insider with respect to the sale of the Securities hereunder or any other arrangements, agreements or understandings of the Company or, to the Company's knowledge, any of its shareholders that may affect the Placement Agent's compensation, as determined by FINRA.
- c. Payments Within Twelve (12) Months. Except as described in the Registration Statement, the General Disclosure Package and the Prospectus, the Company has not made any direct or indirect payments (in cash, securities or otherwise) to: (i) any person, as a finder's fee, consulting fee or otherwise, in consideration of such person raising capital for the Company or introducing to the Company persons who raised or provided capital to the Company; (ii) any FINRA member; or (iii) any person or entity that has any direct or indirect affiliation or association with any FINRA member, within the twelve (12) months prior to the Closing Date, other than the payment to the Placement Agent as provided hereunder in connection with the Offering.
- d. Use of Proceeds. None of the net proceeds of the Offering will be paid by the Company to any participating FINRA member or its affiliates, except as specifically authorized herein.
- e. Information. All information provided by the Company in its FINRA questionnaire to Placement Agent Counsel, as such term is defined below, specifically for use by Placement Agent Counsel in connection with its Public Offering System filings (and related disclosure) with FINRA is true, correct and complete in all material respects.

(b) *Officer's Certificates.* Any certificate signed by any officer of the Company delivered to the Placement Agent or Placement Agent Counsel shall be deemed a representation and warranty by the Company (and not by such officer in his or her personal capacity) to the Placement Agent and the Purchasers as to the matters covered thereby.

SECTION 3. Covenants of the Company. The Company covenants with the Placement Agent and the Purchasers as follows:

(a) *Compliance with Securities Regulations and Commission Requests*. The Company, subject to Section 3(b) hereof, will comply with the requirements of Rule 430B, and will notify the Placement Agent promptly, and confirm the notice in writing, (i) when any post-effective amendment to the Registration Statement shall have been filed or been declared effective or any amendment or supplement to the Prospectus, shall have been filed or distributed, (ii) of the receipt of any comments from the Commission, (iii) of any request by the Commission for any amendment to the Registration Statement or any amendment or supplement to the Prospectus, including any document incorporated or deemed to be incorporated by reference therein, or for additional information, including, but not limited to, any request for information concerning any oral or written communication with potential purchasers and undertaken in reliance on Section 5(d) of the 1933 Act, (iv) of the issuance by the Commission of any stop order suspending the effectiveness of the Registration Statement or any post-effective amendment or of any order preventing or suspending the use of any preliminary prospectus, the Prospectus, or of the suspension of the qualification of the Securities for offering or sale in any jurisdiction, or of the initiation or threatening of any proceedings for any of such purposes or of any examination pursuant to Section 8(d) or 8(e) of the 1933 Act concerning the Registration Statement, (v) of the occurrence of any event or development at any time when a prospectus relating to the Securities is (or, but for the exception afforded by Rule 172 of the 1933 Act Regulations (“**Rule 172**”), would be) required by the 1933 Act to be delivered in connection with sales of the Securities (the “**Prospectus Delivery Period**”) as a result of which the Prospectus, the General Disclosure Package, as then amended or supplemented would include any untrue statement of a material fact or omit to state a material fact necessary in order to make the statements therein, in the light of the circumstances existing when the Prospectus, the General Disclosure Package, is delivered to a purchaser, not misleading; and (vi) if the Company becomes the subject of a proceeding under Section 8A of the 1933 Act in connection with the Offering. The Company will effect all filings required under Rule 424(b), in the manner and within the time period required by Rule 424(b) (without reliance on Rule 424(b)(8)), and will take such steps as it deems necessary to ascertain promptly whether the form of prospectus transmitted for filing under Rule 424(b) was received for filing by the Commission and, in the event that it was not, it will promptly file such prospectus. The Company will use commercially reasonable efforts to prevent the issuance of any such order suspending the effectiveness of the Registration Statement, preventing or suspending the use of any preliminary prospectus, the Prospectus or suspending any such qualification of the Securities and, if any such order is issued, will use commercially reasonable efforts to obtain as soon as possible the withdrawal thereof.

(b) *Continued Compliance with Securities Laws*. The Company will comply with the 1933 Act and the 1933 Act Regulations during the Prospectus Delivery Period so as to permit the completion of the distribution of the Securities as contemplated in this Agreement and in the Registration Statement, the General Disclosure Package and the Prospectus. If at any time during the Prospectus Delivery Period any event shall occur or condition shall exist as a result of which it is necessary, in the opinion of counsel for the Placement Agent or for the Company, to (i) amend the Registration Statement in order that the Registration Statement will not include an untrue statement of a material fact or omit to state a material fact required to be stated therein or necessary to make the statements therein not misleading, (ii) amend or supplement the General Disclosure Package or the Prospectus in order that the General Disclosure Package or the Prospectus, as the case may be, will not include any untrue statement of a material fact or omit to state a material fact necessary in order to make the statements therein not misleading in the light of the circumstances existing at the time it is delivered to a purchaser or (iii) amend the Registration Statement or amend or supplement the General Disclosure Package or the Prospectus, as the case may be, in order to comply with the requirements of the 1933 Act or the 1933 Act Regulations, the Company will promptly (A) give the Placement Agent notice of such event, (B) prepare any amendment or supplement as may be necessary to correct such statement or omission or to make the Registration Statement, the General Disclosure Package or the Prospectus comply with such requirements and, a reasonable amount of time prior to any proposed filing or use, furnish the Placement Agent with copies of any such amendment or supplement and (C) file with the Commission any such amendment or supplement; *provided* that the Company shall not file or use any such amendment or supplement to which the Placement Agent or counsel for the Placement Agent shall reasonably object unless the Company reasonably believes that the failure to file or use such amendment or supplement would constitute a violation of law or subject it to liability. The Company will furnish to the Placement Agent such number of copies of such amendment or supplement as the Placement Agent may reasonably request. The Company has given the Placement Agent notice of any filings made pursuant to the 1934 Act or 1934 Act Regulations within 48 hours prior to the Applicable Time; the Company will give the Placement Agent notice of its intention to make any such filing from the Applicable Time to the Closing Date and will furnish the Placement Agent with copies of any such documents a reasonable amount of time prior to such proposed filing, as the case may be, and will not file or use any such document to which the Placement Agent or counsel for the Placement Agent shall reasonably object unless the Company reasonably believes that the failure to file or use such amendment or supplement would constitute a violation of law or subject it to liability.

(c) The Company will not, and will cause its affiliated purchasers (as defined in Regulation M under the 1934 Act) not to, either alone or with one or more other persons, bid for or purchase, for any account in which it or any of its affiliated purchasers has a beneficial interest, any Shares, or attempt to induce any person to purchase any Shares; and not to, and to cause its affiliated purchasers not to, make bids or purchase for the purpose of creating actual, or apparent, active trading in or of raising the price of the Shares; provided, however, that this clause (c) shall not affect the ability of the Company's affiliated purchasers to purchase Shares in the Offering.

(d) *Delivery of Registration Statements.* The Company has furnished or will deliver to the Placement Agent and to counsel for the Placement Agent, without charge, signed copies of the Registration Statement as originally filed and each amendment thereto (including exhibits filed therewith) and signed copies of all consents and certificates of experts, and will also deliver to the Placement Agent, without charge, a conformed copy of the Registration Statement as originally filed and each amendment thereto (without exhibits). The copies of the Registration Statement and each amendment thereto furnished to the Placement Agent will be identical to the electronically transmitted copies thereof filed with the Commission pursuant to EDGAR, except to the extent permitted by Regulation S-T.

(e) *Delivery of Prospectuses.* The Company has delivered to the Placement Agent, without charge, as many copies of each preliminary prospectus as the Placement Agent may reasonably request, and the Company hereby consents to the use of such copies for purposes permitted by the 1933 Act. The Company will furnish to the Placement Agent, without charge, during the Prospectus Delivery Period, such number of copies of the Prospectus (as amended or supplemented) as the Placement Agent may reasonably request. The Prospectus and any amendments or supplements thereto furnished to the Placement Agent will be identical to the electronically transmitted copies thereof filed with the Commission pursuant to EDGAR, except to the extent permitted by Regulation S-T.

(f) *Blue Sky Qualifications*. The Company will use its commercially reasonable efforts, in cooperation with the Placement Agent, to qualify the Securities for offering and sale under the applicable securities laws of such states and other jurisdictions (domestic or foreign) as the Placement Agent may designate and to maintain such qualifications in effect so long as required to complete the distribution of the Securities; *provided, however*, that the Company shall not be obligated to file any general consent to service of process or to qualify as a foreign corporation or as a dealer in securities in any jurisdiction in which it is not so qualified or to subject itself to taxation in respect of doing business in any jurisdiction in which it is not otherwise so subject.

(g) *Rule 158*. The Company will timely file such reports pursuant to the 1934 Act as are necessary in order to make generally available to its securityholders as soon as practicable an earnings statement for the purposes of, and to provide to the Placement Agent the benefits contemplated by, the last paragraph of Section 11(a) of the 1933 Act.

(h) *Use of Proceeds*. The Company will use the net proceeds received by it from the sale of the Securities in the manner specified in the Registration Statement, the General Disclosure Package and the Prospectus under “Use of Proceeds.”

(i) *Effective Registration; Listing*. The Company will use its reasonable best efforts to cause the Conversion Shares and the Dividend Shares to continue to be registered under the 1933 Act for the periods set forth in the Certificate of Designation; provided however that the Company shall have no obligation to register such Conversion Shares or Dividend Shares to the extent an exemption from registration is available under Section 3(a)(9) of the Securities Act and such shares may be resold without restriction under the Securities Act or such shares may be issued without legend and resold without restriction under Rule 144 promulgated by the Commission pursuant to the Securities Act, as such Rule may be amended or interpreted from time to time, or any similar rule or regulation hereafter adopted by the Commission having substantially the same purpose and effect as such Rule (“**Rule 144**”). The Warrant Shares shall be included in any registration statements filed in connection with the preceding sentence provided however that the Company shall have no obligation to register such Warrant Shares to the extent an exemption from registration is available under Section 3(a)(9) of the Securities Act and such shares may be resold without restriction under the Securities Act or such shares may be issued without legend and resold without restriction under Rule 144. The Company will use its commercially reasonable efforts to cause the Conversion Shares, the Dividend Shares and the Warrant Shares to be included on the Exchange, subject to notice of issuance, and to maintain the listing of the Common Stock on the Exchange.

(j) *Company Lock-Up Agreements.*

(i) Restrictions on Sales of Capital Stock. The Company, on behalf of itself and any successor entity, agrees that, without the prior written consent of the Placement Agent, it will not, for a period of 90 days after the date of this Agreement (the “**Lock-Up Period**”), (1) offer, pledge, sell, contract to sell, sell any option or contract to purchase, purchase any option or contract to sell, grant any option, right or warrant to purchase, lend, or otherwise transfer or dispose of, directly or indirectly, any shares of capital stock of the Company or any securities convertible into or exercisable or exchangeable for shares of capital stock of the Company; (2) file or caused to be filed any registration statement with the Commission relating to the offering of any shares of capital stock of the Company or any securities convertible into or exercisable or exchangeable for shares of capital stock of the Company; (3) complete any offering of debt securities of the Company, other than entering into a line of credit with a traditional bank or (4) enter into any swap or other arrangement that transfers to another, in whole or in part, any of the economic consequences of ownership of capital stock of the Company, whether any such transaction described in clause (1), (2), (3) or (4) above is to be settled by delivery of shares of capital stock of the Company or such other securities, in cash or otherwise.

The restrictions contained in this Section 3(j)(i) shall not apply to (A) the Shares to be sold in the Offering, (B) the issuance by the Company of the Conversion Shares, the Dividend Shares or the Warrant Shares, (C) the issuance by the Company of shares of Common Stock upon the exercise of a stock option or warrant or the conversion of, or as payment of a dividend pursuant to the terms of, a security outstanding on the date hereof, of which the Placement Agent has been advised in writing or as have been disclosed in the Registration Statement, General Disclosure Package or Prospectus, (D) the issuance by the Company of stock options or shares of capital stock of the Company under any equity compensation plan of the Company, or (E) the issuance of shares of Common Stock or other securities in connection with any acquisition, strategic partnership, joint venture or collaboration..

(ii) Restriction on Continuous Offerings. The Company, on behalf of itself and any successor entity, agrees that, without the prior written consent of the Placement Agent, it will not, for a period of 30 days after the Closing Date, directly or indirectly in any “at-the-market” or continuous equity transaction, including, without limitation, the Controlled Equity Offering with Cantor Fitzgerald & Co. (“**Cantor**”) pursuant to the Sale Agreement, dated April 28, 2017, by and between the Company and Cantor, offer to sell, sell, contract to sell, grant any option to sell or otherwise dispose of shares of capital stock of the Company or any securities convertible into or exercisable or exchangeable for shares of capital stock of the Company.

(k) *Intentionally Omitted.*

(l) *Intentionally Omitted.*

(m) *Reservation of Common Stock.* The Company shall reserve and keep available at all times a sufficient number of shares of Common Stock for purpose of enabling the Company to issue the Conversion Shares, the Dividend Shares and Warrant Shares.

(n) *Rule 462(b) Registration Statement.* If the Company elects to rely upon Rule 462(b) under the 1933 Act, the Company will file a Rule 462(b) Registration Statement with the Commission in compliance with Rule 462(b) by 10:00 p.m., Washington, D.C. time, on the date of this Agreement, and at the time of filing either to pay to the Commission the filing fee for the Rule 462(b) Registration Statement or to give irrevocable instructions for the payment of such fee pursuant to Rule 111(b) under the 1933 Act.

(o) *Intentionally Omitted.*

(p) *Intentionally Omitted.*

(q) *Intentionally Omitted.*

(r) *No Fiduciary Duties.* The Company acknowledges and agrees that:

i. the Placement Agent's responsibility to the Company is solely contractual in nature and that neither the Placement Agent or its affiliates or any selling agent shall be deemed to be acting in a fiduciary capacity, or otherwise owes any fiduciary duty to the Company or any of its affiliates in connection with the Offering and the other transactions contemplated by this Agreement;

ii. the price of the Securities set forth in this Agreement was established by the Company following discussions and arms-length negotiations with the Placement Agent and the Purchasers, and the Company is capable of evaluating and understanding, and understands and accepts, the terms, risks and conditions of the transactions contemplated by this Agreement;

iii. it has been advised that the Placement Agent and its affiliates are engaged in a broad range of transactions which may involve interests that differ from those of the Company and that the Placement Agent has no obligation to disclose such interests and transactions to the Company by virtue of any fiduciary, advisory or agency relationship; and

iv. it waives, to the fullest extent permitted by law, any claims it may have against the Placement Agent for breach of fiduciary duty or alleged breach of fiduciary duty and agrees that the Placement Agent shall have no liability (whether direct or indirect) to the Company in respect of such a fiduciary duty claim or to any person asserting a fiduciary duty claim on behalf of or in right of the Company, including stockholders, employees or creditors of the Company.

(s) *Transfer Agent.* For a period of three (3) years after the date of this Agreement, the Company shall retain a Transfer Agent and registrar for the Series B Preferred and the common stock.

(t) *Intentionally Omitted.*

#### SECTION 4. Payment of Expenses.

(a) *General Expenses Related to the Offering.* The Company hereby agrees to pay, or reimburse if paid by the Placement Agent: all expenses incident to the performance of the obligations of the Company under this Agreement, including, but not limited to: (a) all filing fees and communication expenses relating to the registration of the shares of Series B Preferred Stock to be sold in the Offering with the Commission; (b) all Public Filing System filing fees associated with the review of the Offering by FINRA; (c) all fees and expenses relating to the inclusion of the Conversion Shares, the Dividend Shares and the Warrant Shares on the Exchange; (d) all fees, expenses and disbursements relating to background checks of the Company's officers and directors in an amount not to exceed \$5,000 in the aggregate; (e) (g) the costs of all mailing and printing of the placement documents (including, without limitation, the Placement Agency Agreement, any Blue Sky Surveys and, if appropriate, any Agreement Among Underwriters and Selected Dealers' Agreement), Registration Statements, Prospectuses and all amendments, supplements and exhibits thereto and as many preliminary and final Prospectuses as the Placement Agent may reasonably deem necessary; (h) the \$29,500 cost associated with the use of Ipreo's book building, prospectus tracking and compliance software for the Offering; (i) fees and expenses of the transfer agent for the Shares; (j) stock transfer and/or stamp taxes, if any, payable upon the transfer of securities from the Company to the Purchasers; (l) the fees and expenses of the Company's accountants; (m) the fees and expenses of the Company's legal counsel and other agents; (n) fees and expenses of Placement Agent Counsel not to exceed \$75,000; and (o) the costs incident to the authorization, issuance, sale, preparation and delivery of the Securities to the Purchasers, and any taxes payable in that connection.

(b) *Non-Accountable Expenses.* The Company further agrees that, in addition to the expenses payable pursuant to Section 4(a), on the Closing Date the Placement Agent shall deduct from the gross proceeds of the Offering contemplated herein, a non-accountable expense allowance equal to one percent (1%) of the gross proceeds received from the sale of the Shares, less the Advance (as such term is defined in Section 9(c) hereof), provided, however, that in the event that the Offering is terminated, the Company agrees to reimburse the Placement Agent pursuant to Section 9(c) hereof.

SECTION 5. Conditions of Placement Agent's Obligations. The obligations of the Placement Agent hereunder are subject to the accuracy of the representations and warranties of the Company contained herein or in certificates of any officer of the Company delivered pursuant to the provisions hereof, to the performance by the Company of the covenants and other obligations hereunder, and to the following further conditions:

(a) *Effectiveness of Registration Statement; Rule 430B Information.* The Registration Statement, including any Rule 462(b) Registration Statement, has been declared effective and, at the Closing Date, no stop order suspending the effectiveness of the Registration Statement or any post-effective amendment thereto has been issued under the 1933 Act, no order preventing or suspending the use of any preliminary prospectus or the Prospectus has been issued and no proceedings for any of those purposes have been instituted or are pending or, to the Company's knowledge, contemplated; and the Company has complied with each request (if any) from the Commission for additional information to the reasonable satisfaction of counsel to the Company and counsel to the Placement Agent. A prospectus containing the Rule 430B Information shall have been filed with the Commission in the manner and within the time frame required by Rule 424(b) without reliance on Rule 424(b)(8) or a post-effective amendment providing such information shall have been filed with, and declared effective by, the Commission in accordance with the requirements of Rule 430B.



(b) *No Untrue Statements.* The Placement Agent shall not have discovered and disclosed to the Company on or prior to the Closing Date that the Registration Statement or any amendment or supplement thereto contains an untrue statement of a fact which, in the opinion of Placement Agent Counsel, is material or omits to state any fact which, in the opinion of such counsel, is material and is required to be stated therein or is necessary to make the statements therein not misleading, or that the General Disclosure Package, any Issuer Free Writing Prospectus or the Prospectus or any amendment or supplement thereto contains an untrue statement of fact which, in the opinion of such counsel, is material or omits to state any fact which, in the opinion of such counsel, is material and is necessary in order to make the statements, in the light of the circumstances in which they were made, not misleading.

(c) *No Material Adverse Change.* Since the date of the latest audited financial statements included in the Registration Statement, the General Disclosure Package and the Prospectus or incorporated or deemed to be incorporated by reference therein as of the date hereof, (i) neither the Company nor any Subsidiary shall have sustained any loss or interference with its business from fire, explosion, flood or other calamity, whether or not covered by insurance, or from any labor dispute or court or governmental action, order or decree, otherwise than as set forth in the Registration Statement, the General Disclosure Package and the Prospectus, and (ii) there shall not have been any change in the capital stock or long-term debt of the Company or any Subsidiary, or any change, or any development involving a prospective change, in or affecting the business, management, financial position, stockholders' equity or results of operations of the Company, otherwise than as set forth in the Registration Statement, the General Disclosure Package and the Prospectus, the effect of which, in any such case described in clause (i) or (ii) of this paragraph (c) is, in the judgment of the Placement Agent, so material and adverse as to make it impracticable or inadvisable to proceed with the sale or delivery of the Securities on the terms and in the manner contemplated in the General Disclosure Package.

(d) *Adverse Governmental Actions.* No action shall have been taken and no law, statute, rule, regulation or order shall have been enacted, adopted or issued by any governmental agency or body which would prevent the issuance or sale of the Securities or materially and adversely affect or potentially materially and adversely affect the business or operations of the Company or any subsidiary; and no injunction, restraining order or order of any other nature by any federal or state court of competent jurisdiction shall have been issued which would prevent the issuance or sale of the Securities or materially and adversely affect or potentially materially and adversely affect the business or operations of the Company or any subsidiary.

(e) *Market Conditions.* Subsequent to the execution and delivery of this Agreement there shall not have occurred any of the following: (i) trading in securities generally on the New York Stock Exchange, the Exchange or the NASDAQ Stock Market or in the over-the-counter market, or trading in any securities of the Company on any exchange or in the over-the-counter market shall have been suspended or materially limited, or minimum or maximum prices or maximum range for prices shall have been established on any such exchange or such market by the Commission, by such exchange or market or by any other regulatory body or governmental authority having jurisdiction, (ii) a banking moratorium shall have been declared by Federal or state authorities or a material disruption has occurred in commercial banking or securities settlement or clearance services in the United States, (iii) the United States shall have become engaged in hostilities, or the subject of an act of terrorism, or there shall have been an outbreak of or escalation in hostilities involving the United States, or there shall have been a declaration of a national emergency or war by the United States or (iv) there shall have occurred such a material adverse change in general economic, political or financial conditions (or the effect of international conditions on the financial markets in the United States shall be such) as to make it, in the judgment of the Placement Agent, impracticable or inadvisable to proceed with the sale or delivery of the Securities on the terms and in the manner contemplated in the Registration Statement, the General Disclosure Package and the Prospectus.

(f) *Certificate of Designation.* The Certificate of Designation shall have been filed with the Secretary of State of the State of Delaware and become effective and the Company shall have delivered evidence of such filing and effectiveness to the Placement Agent in form and substance satisfactory to the Placement Agent.

(g) *Opinion of Counsel for Company.* At the Closing Date, the Placement Agent shall have received the favorable opinion and negative assurance statement, dated as of the Closing Date, of Lowenstein Sandler LLP, counsel for the Company, in form and substance reasonably satisfactory to the Placement Agent and its counsel.

(h) *Opinion of IP Counsel.* At the Closing Date, the Placement Agent shall have received the favorable opinion and negative assurance statement, dated as of the Closing Date, of MH2 Technology Law Group, LLP, as intellectual property counsel to the Company, in form and substance reasonably satisfactory to the Placement Agent and its counsel.

(i) *Reliance.* In rendering such opinions, such counsel may rely: (i) as to matters involving the application of laws other than the laws of the United States and jurisdictions in which they are admitted, to the extent such counsel deems proper and to the extent specified in such opinion, if at all, upon an opinion or opinions (in form and substance reasonably satisfactory to the Placement Agent) of other counsel reasonably acceptable to the Placement Agent, familiar with the applicable laws; and (ii) as to matters of fact, to the extent they deem proper, on certificates or other written statements of officers of the Company and officers of departments of various jurisdictions having custody of documents respecting the corporate existence or good standing of the Company, provided that copies of any such statements or certificates shall be delivered to Placement Agent Counsel if requested.

(j) *Officers' Certificate.* The Company shall have furnished to the Placement Agent a certificate, dated the Closing Date of its Chief Executive Officer, its President and its Chief Financial Officer stating that (i) such officers have carefully examined the Registration Statement, the General Disclosure Package, and the Prospectus and, in their opinion, the Registration Statement and each amendment thereto, as of the Applicable Time and as of the Closing Date did not include any untrue statement of a material fact and did not omit to state a material fact required to be stated therein or necessary to make the statements therein not misleading, and the General Disclosure Package, as of the Applicable Time and as of the Closing Date, the Prospectus and each amendment or supplement thereto, as of the respective date thereof and as of the Closing Date, did not include any untrue statement of a material fact and did not omit to state a material fact necessary in order to make the statements therein, in the light of the circumstances in which they were made, not misleading, (ii) since the effective date of the Registration Statement, no event has occurred which should have been set forth in a supplement or amendment to the Registration Statement, the General Disclosure Package or the Prospectus, (iii) to the best of their knowledge after reasonable investigation, as of the Closing Date, the representations and warranties of the Company in this Agreement are true and correct and the Company has complied with all agreements and satisfied all conditions on its part to be performed or satisfied hereunder at or prior to the Closing Date, and (iv) there has not been, subsequent to the date of the most recent audited financial statements included or incorporated or deemed to be incorporated by reference in the General Disclosure Package, any material adverse change in the financial position or results of operations of the Company, or any change or development that, singularly or in the aggregate, would involve a material adverse change or a prospective material adverse change, in or affecting the condition (financial or otherwise), results of operations, business, assets or prospects of the Company, except as set forth in the Prospectus.

(k) *Accountant's Comfort Letter*. At the time of the execution of this Agreement, the Placement Agent shall have received from EisnerAmper LLP a letter, dated such date, in form and substance satisfactory to the Placement Agent, containing statements and information of the type ordinarily included in accountants' "comfort letters" to underwriters with respect to the financial statements and certain financial information of the Company contained in the Registration Statement, the General Disclosure Package and the Prospectus.

(l) *Bring-down Comfort Letter*. At the Closing Date, the Placement Agent shall have received from EisnerAmper LLP a letter, dated as of the Closing Date, to the effect that they reaffirm the statements made in the letter furnished pursuant to subsection (k) of this Section 5, except that the specified date referred to shall be a date not more than three Business Days prior to the Closing Date.

(m) *Secretary's Certificate*. At the Closing Date, the Placement Agent shall have received a certificate of the Company signed by the Secretary of the Company, dated the Closing Date certifying: (i) that each of the Company's charter, bylaws and Certificate of Designation is true and complete, has not been modified and is in full force and effect; (ii) that the resolutions of the Company's Board of Directors relating to the Offering are in full force and effect and have not been modified; (iii) as to the accuracy and completeness of all correspondence between the Company or its counsel and the Commission; and (iv) as to the incumbency of the officers of the Company. The documents referred to in such certificate shall be attached to such certificate.

(n) *FINRA Clearance*. On or before the date of this Agreement, the Placement Agent shall have received clearance from FINRA as to the amount of compensation allowable or payable to the Placement Agent as described in the Registration Statement.

(o) *Lock-up Agreements*. At the date of this Agreement, the Placement Agent shall have the Lock-Up Agreements substantially in the form of Exhibit B hereto signed by each of the Lock-Up Parties.

(p) *Placement Agent's Warrant Agreement*. On the Closing Date, the Company shall have delivered to the Placement Agent executed copies of the Placement Agent's Warrant Agreement.

(q) *Additional Documents*. At the Closing Date, the Placement Agent and Placement Agent Counsel shall have been furnished with such documents and opinions as they may reasonably require for the purpose of enabling them to pass upon the issuance and sale of the Securities as herein contemplated, or in order to evidence the accuracy of any of the representations or warranties, or the fulfillment of any of the conditions, herein contained; and all proceedings taken by the Company in connection with the issuance and sale of the Securities as herein contemplated shall be reasonably satisfactory in form and substance to the Placement Agent and counsel for the Placement Agent.

(r) *Approval of Inclusion.* At the Closing Date, the Conversion Shares, the Dividend Shares and the Warrant Shares shall have been approved for inclusion on the Exchange.

SECTION 6. Indemnification.

(a) *Indemnification of Placement Agent.*

- (i) *General.* Subject to the conditions set forth below, the Company agrees to indemnify and hold harmless the Placement Agent, its affiliates and each of its and their respective directors, officers, members, employees, representatives, partners, shareholders, affiliates, counsel, agents, selected dealers and each person, if any, who controls any such Placement Agent and such selected dealers within the meaning of Section 15 of the 1933 Act or Section 20 of the 1934 Act (collectively the “**Placement Agent Indemnified Parties**,” and each an “**Placement Agent Indemnified Party**”), against any and all loss, liability, claim, damage and expense whatsoever (including but not limited to any and all legal or other expenses reasonably incurred in investigating, preparing or defending against any litigation, commenced or threatened, or any claim whatsoever, whether arising out of any action between any of the Placement Agent Indemnified Parties and the Company or between any of the Placement Agent Indemnified Parties and any third party, or otherwise) to which they or any of them may become subject under the 1933 Act, the 1934 Act or any other statute or at common law or otherwise or under the laws of foreign countries (a “**Claim**”), (i) arising out of or based upon any untrue statement or alleged untrue statement of a material fact contained in (A) the Registration Statement, the General Disclosure Package, any Preliminary Prospectus or the Prospectus (or in any amendment or supplement thereto or document incorporated or deemed to be incorporated by reference therein); (B) any materials or information provided to prospective purchasers by, or with the approval of, the Company in connection with the marketing of the Offering, including any “road show” or prospective purchaser presentations made to prospective purchasers by the Company (whether in person or electronically); or (C) any application or other document or written communication (in this Section 5, collectively called “application”) executed by the Company or based upon written information furnished by the Company in any jurisdiction in order to qualify the Securities under the securities laws thereof or filed with the Commission, any state securities commission or agency, the Exchange or any other national securities exchange; or the omission or alleged omission therefrom of a material fact required to be stated therein or necessary to make the statements therein, in the light of the circumstances under which they were made, not misleading, unless such statement or omission was made in reliance upon, and in conformity with, the Placement Agent’s Information or (ii) otherwise arising in connection with or allegedly in connection with the Offering.

- (ii) *Procedure.* If any action is brought against a Placement Agent Indemnified Party in respect of which indemnity may be sought against the Company pursuant to Section 6(a)(i), such Placement Agent Indemnified Party shall promptly notify the Company in writing of the institution of such action and the Company shall assume the defense of such action, including the employment and fees of counsel (subject to the approval of such Placement Agent Indemnified Party) and payment of actual expenses if a Placement Agent Indemnified Party requests that the Company do so. Such Placement Agent Indemnified Party shall have the right to employ its or their own counsel in any such case, but the fees and expenses of such counsel shall be at the expense of the such Placement Agent Indemnified Party unless (i) the employment of such counsel at the expense of the Company shall have been authorized in writing by the Company in connection with the defense of such action, or (ii) the Company shall not have employed counsel to have charge of the defense of such action, or (iii) such indemnified party or parties shall have reasonably concluded that there may be defenses available to it or them which are different from or additional to those available to the Company (in which case the Company shall not have the right to direct the defense of such action on behalf of the indemnified party or parties), in any of which events the reasonable fees and expenses of not more than one additional firm of attorneys selected by the Placement Agent Indemnified Party (in addition to local counsel) shall be borne by the Company, and shall be advanced by the Company. The Company shall not be liable for any settlement of any action effected without its consent (which shall not be unreasonably withheld). In addition, the Company shall not, without the prior written consent of the Placement Agent (which shall not be unreasonably withheld), settle, compromise or consent to the entry of any judgment in or otherwise seek to terminate any pending or threatened action in respect of which advancement, reimbursement, indemnification or contribution may be sought hereunder (whether or not such Placement Agent Indemnified Party is a party thereto) unless such settlement, compromise, consent or termination (i) includes an unconditional release of each Placement Agent Indemnified Party, acceptable to such Placement Agent Indemnified Party, from all liabilities, expenses and claims arising out of such action for which indemnification or contribution may be sought and (ii) does not include a statement as to or an admission of fault, culpability or a failure to act, by or on behalf of any Placement Agent Indemnified Party.
- (iii) *Indemnification of the Company.* The Placement Agent agrees to indemnify and hold harmless the Company, its directors, its officers who signed the Registration Statement and persons who control the Company within the meaning of Section 15 of the 1933 Act or Section 20 of the 1934 Act ((collectively the “**Company Indemnified Parties**,” and each a “**Company Indemnified Party**”) against any and all loss, liability, claim, damage and expense described in the foregoing indemnity from the Company to the Placement Agent, as incurred, but only with respect to untrue statements or omissions, or alleged untrue statements or omissions made in the Registration Statement, any Preliminary Prospectus, the General Disclosure Package or Prospectus or any amendment or supplement thereto or in any application, in reliance upon, and in strict conformity with, the Placement Agent’s Information. In case any action shall be brought against any Company Indemnified Party based on any Preliminary Prospectus, the Registration Statement, the General Disclosure Package or Prospectus or any amendment or supplement thereto or any application, and in respect of which indemnity may be sought against the Placement Agent, the Placement Agent shall have the rights and duties given to the Company, and the Company Indemnified Party shall have the rights and duties given to the Placement Agent by the provisions of Section 6(a)(ii). Each Company Indemnified Party shall promptly notify the Placement Agent of the commencement of any litigation or proceedings such Company Indemnified Party, in connection with the issuance and sale of the Securities or in connection with the Registration Statement, the General Disclosure Package, or the Prospectus.

## SECTION 7. Contribution.

(a) *Contribution Rights.* If the indemnification provided for in Section 6 shall for any reason be unavailable to or insufficient to hold harmless an indemnified party under Section 6(a) or 6(b) in respect of any loss, claim, damage or liability, or any action in respect thereof, referred to therein, then each indemnifying party shall, in lieu of indemnifying such indemnified party, contribute to the amount paid or payable by such indemnified party as a result of such loss, claim, damage or liability, or action in respect thereof, (i) in such proportion as shall be appropriate to reflect the relative benefits received by the Company, on the one hand, and the Placement Agent, on the other, from the Offering of the Securities, or (ii) if the allocation provided by clause (i) above is not permitted by applicable law, in such proportion as is appropriate to reflect not only the relative benefits referred to in clause (i) above but also the relative fault of the Company, on the one hand, and the Placement Agent, on the other, with respect to the statements or omissions that resulted in such loss, claim, damage or liability, or action in respect thereof, as well as any other relevant equitable considerations. The relative benefits received by the Company on the one hand and the Placement Agent on the other with respect to such Offering shall be deemed to be in the same proportion as the total net proceeds from the Offering of the Securities purchased under this Agreement (before deducting expenses) received by the Company as set forth in the table on the cover page of the Prospectus, on the one hand, and the total Placement Fee received by the Placement Agent in connection with the Offering as set forth in the table on the cover page of the Prospectus on the other hand. The relative fault shall be determined by reference to whether the untrue or alleged untrue statement of a material fact or omission or alleged omission to state a material fact relates to information supplied by the Company or the Placement Agent, the intent of the parties and their relative knowledge, access to information and opportunity to correct or prevent such statement or omission. The Company and the Placement Agent agree that it would not be just and equitable if contributions pursuant to this Section 7(a) were to be determined by pro rata allocation or by any other method of allocation that does not take into account the equitable considerations referred to herein. The amount paid or payable by an indemnified party as a result of the loss, claim, damage or liability, or action in respect thereof, referred to above in this Section 7(a) shall be deemed to include, for purposes of this Section 7(a), any legal or other expenses reasonably incurred by such indemnified party in connection with investigating or defending any such action or claim. Notwithstanding the provisions of this Section 7(a) in no event shall the Placement Agent be required to contribute any amount in excess of the total Placement Fee received by the Placement Agent less the amount of any damages which the Placement Agent has otherwise paid or become liable to pay by reason of any untrue or alleged untrue statement, omission or alleged omission, act or alleged act or failure to act or alleged failure to act. No person guilty of fraudulent misrepresentation (within the meaning of Section 11(f) of the 1933 Act) shall be entitled to contribution from any person who was not guilty of such fraudulent misrepresentation.

(b) *Contribution Procedure.* Within fifteen (15) days after receipt by any party to this Agreement (or its representative) of notice of the commencement of any action, suit or proceeding, such party will, if a claim for contribution in respect thereof is to be made against another party (“*contributing party*”), notify the contributing party of the commencement thereof, but the failure to so notify the contributing party will not relieve it from any liability which it may have to any other party other than for contribution hereunder. In case any such action, suit or proceeding is brought against any party, and such party notifies a contributing party or its representative of the commencement thereof within the aforesaid 15 days, the contributing party will be entitled to participate therein with the notifying party and any other contributing party similarly notified. Any such contributing party shall not be liable to any party seeking contribution on account of any settlement of any claim, action or proceeding affected by such party seeking contribution on account of any settlement of any claim, action or proceeding affected by such party seeking contribution without the written consent of such contributing party. The contribution provisions contained in this Section 7 are intended to supersede, to the extent permitted by law, any right to contribution under the 1933 Act, the 1934 Act or otherwise available

SECTION 8. Representations, Warranties and Agreements to Survive. The indemnities, covenants, agreements, representations, warranties and other statements of the Company, as set forth in this Agreement or made by the Company pursuant to this Agreement, shall remain in full force and effect, regardless of any investigation made by or on behalf of the Placement Agent, the Purchasers or any person controlling any of them and shall survive delivery of and payment for the Securities. Notwithstanding any termination of this Agreement, the indemnity and contribution agreements contained in Sections 6 and 7 and the covenants, representations, warranties set forth in this Agreement shall not terminate and shall remain in full force and effect at all times.

SECTION 9. Effective Date of Agreement and Termination Thereof.

(a) *Effective Date.* This Agreement shall become effective when both the Company and the Placement Agent have executed the same and delivered counterparts of such signatures to the other party.

(b) *Termination.* The Placement Agent shall have the right to terminate this Agreement at any time prior to any Closing Date, (i) if any domestic or international event or act or occurrence has materially disrupted, or in your opinion will in the immediate future materially disrupt, general securities markets in the United States; or (ii) if trading on the New York Stock Exchange, the Exchange or the Nasdaq Stock Market LLC shall have been suspended or materially limited, or minimum or maximum prices for trading shall have been fixed, or maximum ranges for prices for securities shall have been required by FINRA or by order of the Commission or any other government authority having jurisdiction; or (iii) if the United States shall have become involved in a new war or an increase in major hostilities; or (iv) if a banking moratorium has been declared by a New York State or federal authority; or (v) if a moratorium on foreign exchange trading has been declared which materially adversely impacts the United States securities markets; or (vi) if the Company shall have sustained a material loss by fire, flood, accident, hurricane, earthquake, theft, sabotage or other calamity or malicious act which, whether or not such loss shall have been insured, will, in your opinion, make it inadvisable to proceed with the delivery of the Shares; or (vii) if the Company is in material breach of any of its representations, warranties or covenants hereunder; or (viii) if the Placement Agent shall have become aware after the date hereof of such a material adverse change in the conditions or prospects of the Company, or such adverse material change in general market conditions as in the Placement Agent's judgment would make it impracticable to proceed with the offering, sale and/or delivery of the Shares. If this Agreement is terminated pursuant to this Section, such termination shall be without liability of any party to any other party except as provided in Section 8 above and Section 9(c) below.

(c) *Expenses.* Notwithstanding anything to the contrary in this Agreement, in the event that this Agreement shall not be carried out for any reason whatsoever, within the time specified herein or any extensions thereof pursuant to the terms herein, the Company shall be obligated to pay to the Placement Agent actual and accountable out-of-pocket expenses related to the transactions contemplated herein then due and payable (including the fees and disbursements of Placement Agent Counsel) up to \$37,500, inclusive of the \$25,000 advance for non-accountable expenses previously paid by the Company to the Placement Agent (the "*Advance*") and upon demand the Company shall pay the full amount thereof to the Placement Agent; provided, however, that such expense cap in no way limits or impairs the indemnification and contribution provisions of this Agreement. Notwithstanding the foregoing, any advance received by the Placement Agent will be reimbursed to the Company to the extent not actually incurred in compliance with FINRA Rule 5110(f)(2)(C).

#### SECTION 12. Miscellaneous.

(a) *Notices.* All communications hereunder, except as herein otherwise specifically provided, shall be in writing and shall be mailed (registered or certified mail, return receipt requested), personally delivered, sent by facsimile transmission or e-mail and confirmed and shall be deemed given when so delivered, faxed, or e-mailed and confirmed or if mailed, two (2) days after such mailing.



If to the Placement Agent:

ThinkEquity  
A Division of Fordham Financial Management, Inc.  
17 State Street, 22<sup>nd</sup> Floor  
New York, NY 10005  
Attn: Mr. Eric Lord, Head of Investment Banking  
Fax No.: 212-349-2550  
Email address: el@think-equity.com

with a copy (which shall not constitute notice) to:

Meister Seelig & Fein LLP  
125 Park Avenue, 7<sup>th</sup> Floor  
New York, New York 10017  
Attn: Kenneth S. Goodwin, Esq.  
Fax No.: 646-539-3663  
Email address: ksg@msf-law.com  
Louis Lombardo, Esq.  
Fax No.: 646-930-4710  
Email Address: ll@msf-law.com

If to the Company:

Matinas BioPharma Holdings, Inc.  
1545 Route 206 South, Suite 302  
Bedminster, NJ 07921  
Attn: Mr. Jerome Jabbour, Chief Executive Officer  
Fax No.:  
Email address: jjabbour@matinasbiopharma.com

with a copy (which shall not constitute notice) to:

Lowenstein Sandler LLP  
1251 Avenue of the Americas  
New York, NY 10020  
Attn: Steven M. Skolnick, Esq.  
Fax No.: 973-597-2477  
Email address: sskolnick@lowenstein.com

(b) *Headings*. The headings contained herein are for the sole purpose of convenience of reference, and shall not in any way limit or affect the meaning or interpretation of any of the terms or provisions of this Agreement.

(c) *Amendment*. This Agreement may only be amended by a written instrument executed by each of the parties hereto.

(d) *Entire Agreement.* This Agreement (together with the other agreements and documents being delivered pursuant to or in connection with this Agreement) constitutes the entire agreement of the parties hereto with respect to the subject matter hereof and thereof, and supersedes all prior agreements and understandings of the parties, oral and written, with respect to the subject matter hereof. Notwithstanding anything to the contrary set forth herein, it is understood and agreed by the parties hereto that all other terms and conditions of that certain engagement letter between the Company and ThinkEquity, a division of Fordham Financial Management, Inc., dated May 15, 2018, as amended, shall remain in full force and effect.

(e) *Successors; Persons Entitled to Benefit of Agreement.* This Agreement shall inure to the benefit of and be binding upon the Placement Agent, the Company, and their respective successors and assigns. This Agreement shall also inure to the benefit of the Purchasers, and each of their respective successors and assigns, which shall be third party beneficiaries hereof. Nothing expressed or mentioned in this Agreement is intended or shall be construed to give any person, other than the persons mentioned in the preceding sentences, any legal or equitable right, remedy or claim under or in respect of this Agreement, or any provisions herein contained, this Agreement and all conditions and provisions hereof being intended to be and being for the sole and exclusive benefit of such persons and for the benefit of no other person; except that the representations, warranties, covenants, agreements and indemnities of the Company contained in this Agreement shall also be for the benefit of the Placement Agent Indemnified Parties and the indemnities of the Placement Agent shall be for the benefit of the Company Indemnified Parties.

(f) *Governing Law; Consent to Jurisdiction; Trial by Jury.* This Agreement shall be governed by and construed and enforced in accordance with the laws of the State of New York, without giving effect to conflict of laws principles thereof. The Company hereby agrees that any action, proceeding or claim against it arising out of, or relating in any way to this Agreement shall be brought and enforced in the New York Supreme Court, County of New York, or in the United States District Court for the Southern District of New York, and irrevocably submits to such jurisdiction, which jurisdiction shall be exclusive. The Company hereby waives any objection to such exclusive jurisdiction and that such courts represent an inconvenient forum. Any such process or summons to be served upon the Company may be served by transmitting a copy thereof by registered or certified mail, return receipt requested, postage prepaid, addressed to it at the address set forth in Section 12(a) hereof. Such mailing shall be deemed personal service and shall be legal and binding upon the Company in any action, proceeding or claim. The Company agrees that the prevailing party(ies) in any such action shall be entitled to recover from the other party(ies) all of its reasonable attorneys' fees and expenses relating to such action or proceeding and/or incurred in connection with the preparation therefor. The Company (on its behalf and, to the extent permitted by applicable law, on behalf of its stockholders and affiliates) and the Placement Agent hereby irrevocably waives, to the fullest extent permitted by applicable law, any and all right to trial by jury in any legal proceeding arising out of or relating to this Agreement or the transactions contemplated hereby.

(g) *Execution in Counterparts.* This Agreement may be executed in one or more counterparts, and by the different parties hereto in separate counterparts, each of which shall be deemed to be an original, but all of which taken together shall constitute one and the same agreement, and shall become effective when one or more counterparts has been signed by each of the parties hereto and delivered to each of the other parties hereto. Delivery of a signed counterpart of this Agreement by facsimile or email/pdf transmission shall constitute valid and sufficient delivery thereof.

(h) *Waiver, etc.* The failure of any of the parties hereto to at any time enforce any of the provisions of this Agreement shall not be deemed or construed to be a waiver of any such provision, nor to in any way effect the validity of this Agreement or any provision hereof or the right of any of the parties hereto to thereafter enforce each and every provision of this Agreement. No waiver of any breach, non-compliance or non-fulfillment of any of the provisions of this Agreement shall be effective unless set forth in a written instrument executed by the party or parties against whom or which enforcement of such waiver is sought; and no waiver of any such breach, non-compliance or non-fulfillment shall be construed or deemed to be a waiver of any other or subsequent breach, non-compliance or non-fulfillment.

***[Remainder of the page intentionally left blank; signature page follows]***

If the foregoing is in accordance with your understanding of our agreement, please sign and return to the Company a counterpart hereof, whereupon this instrument, along with all counterparts, will become a binding agreement between the Placement Agent and the Company in accordance with its terms.

Very truly yours,

MATINAS BIOPHARMA HOLDINGS, INC.

By: /s/ Jerome D. Jabbour

Name: Jerome D. Jabbour

Title: Chief Executive Officer

Confirmed and Accepted:

THINKEQUITY

A Division of Fordham Financial Management, Inc.

By: /s/ Eric Lord

Name: Eric Lord

Title: Head of Investment Banking

**SCHEDULE A**

General Use Free Writing Prospectuses

None

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**SCHEDULE B**

Issuer Free Writing Prospectuses

None.

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**SCHEDULE C**

Lock-Up Parties

Herbert Conrad

Jerome D. Jabbour

Dominick M. DiPaolo

Raphael J. Mannino

Gary Gaglione

Eric Ende

James S. Scibetta

Adam K. Stern

Matthew Wikler

Roelof Rongen

---

**SCHEDULE D**

Subsidiaries

<u>Name</u>	<u>State of Incorporation</u>
Matinas BioPharma, Inc.	Delaware
Matinas BioPharma Nanotechnologies, Inc.	Delaware

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**EXHIBIT A**

**Form of Placement Agent's Warrant Agreement**

THE REGISTERED HOLDER OF THIS PURCHASE WARRANT BY ITS ACCEPTANCE HEREOF, AGREES THAT IT WILL NOT SELL, TRANSFER OR ASSIGN THIS PURCHASE WARRANT EXCEPT AS HEREIN PROVIDED AND THE REGISTERED HOLDER OF THIS PURCHASE WARRANT AGREES THAT IT WILL NOT SELL, TRANSFER, ASSIGN, PLEDGE OR HYPOTHECATE THIS PURCHASE WARRANT FOR A PERIOD OF ONE YEAR FOLLOWING THE CLOSING DATE (DEFINED BELOW) TO ANYONE OTHER THAN (I) THINKEQUITY, A DIVISION OF FORDHAM FINANCIAL MANAGEMENT, INC., OR AN UNDERWRITER OR A SELECTED DEALER IN CONNECTION WITH THE OFFERING, OR (II) A BONA FIDE OFFICER OR PARTNER OF THINKEQUITY, A DIVISION OF FORDHAM FINANCIAL MANAGEMENT, INC., OR OF ANY SUCH UNDERWRITER OR SELECTED DEALER.

THIS PURCHASE WARRANT IS NOT EXERCISABLE PRIOR TO JUNE 21, 2019. VOID AFTER 5:00 P.M., EASTERN TIME, JUNE 21, 2023.

**WARRANT TO PURCHASE COMMON STOCK**

**MATINAS BIOPHARMA HOLDINGS, INC.**

Warrant Shares: \_\_\_\_\_

Initial Exercise Date: June 21, 2019

THIS WARRANT TO PURCHASE COMMON STOCK (the "Warrant") certifies that, for value received, ThinkEquity, a Division of Fordham Financial Management, Inc. or its assigns (the "Holder") is entitled, upon the terms and subject to the limitations on exercise and the conditions hereinafter set forth, at any time on or after June 21, 2019 (the "Initial Exercise Date") and, in accordance with FINRA Rule 5110(f)(2)(G)(i), prior to at 5:00 p.m. (New York time) on the date that is five (5) years following the Closing Date (the "Termination Date") but not thereafter, to subscribe for and purchase from Matinas BioPharma Holdings, Inc., a Delaware corporation (the "Company"), up to \_\_\_\_\_ shares (the "Warrant Shares") of common stock, par value \$0.0001 per share, of the Company (the "Common Stock"), as subject to adjustment hereunder. The purchase price of one share of Common Stock under this Warrant shall be equal to the Exercise Price, as defined in Section 2(b).

This Warrant is issued in connection with an offering (the “Offering”) of Series B Convertible Preferred Stock, par value \$0.0001 per share, of the Company.

Section 1. Definitions. In addition to the terms defined elsewhere in this Agreement, the following terms have the meanings indicated in this Section 1:

“Affiliate” means any Person that, directly or indirectly through one or more intermediaries, controls or is controlled by or is under common control with a Person, as such terms are used in and construed under Rule 405 under the Securities Act.

“Business Day” means any day except any Saturday, any Sunday, any day which is a federal legal holiday in the United States or any day on which banking institutions in the State of New York are authorized or required by law or other governmental action to close.

“Closing Date” means the initial closing date of the Offering.

“Commission” means the United States Securities and Exchange Commission.

“Common Stock Equivalents” means any securities of the Company or the Subsidiaries which would entitle the holder thereof to acquire at any time Common Stock, including, without limitation, any debt, preferred stock, right, option, warrant or other instrument that is at any time convertible into or exercisable or exchangeable for, or otherwise entitles the holder thereof to receive, Common Stock

“Exchange Act” means the Securities Exchange Act of 1934, as amended, and the rules and regulations promulgated thereunder.

“Person” means an individual or corporation, partnership, trust, incorporated or unincorporated association, joint venture, limited liability company, joint stock company, government (or an agency or subdivision thereof) or other entity of any kind.

“Rule 144” means Rule 144 promulgated by the Commission pursuant to the Securities Act, as such Rule may be amended or interpreted from time to time, or any similar rule or regulation hereafter adopted by the Commission having substantially the same purpose and effect as such Rule.

“Securities Act” means the Securities Act of 1933, as amended, and the rules and regulations promulgated thereunder.

“Trading Day” means a day on which the NYSE American is open for trading.

“Trading Market” means any of the following markets or exchanges on which the Common Stock is listed or quoted for trading on the date in question: the NYSE American Market, the Nasdaq Capital Market, the Nasdaq Global Market, the Nasdaq Global Select Market, or the New York Stock Exchange (or any successors to any of the foregoing).

“Transfer Agent” means V Stock Transfer, LLC, the current transfer agent of the Company, with a mailing address of 18 Lafayette Place, Woodmere, New York 11598 and a facsimile number of (646) 536-3179, and any successor transfer agent of the Company.

“VWAP” means, for any date, the price determined by the first of the following clauses that applies: (a) if the Common Stock then listed or quoted on a Trading Market, the daily volume weighted average price of the Common Stock for such date (or the nearest preceding date) on the Trading Market on which the Common Stock is then listed or quoted as reported by Bloomberg L.P. (based on a Trading Day from 9:30 a.m. (New York City time) to 4:02 p.m. (New York City time)), (b) if OTCQB or OTCQX is not a Trading Market, the volume weighted average price of a share of Common Stock for such date (or the nearest preceding date) on the OTCQB or OTCQX as applicable, (c) if Common Stock is not then listed or quoted for trading on the OTCQB or OTCQX and if prices for Common Stock are then reported in the “Pink Sheets” published by OTC Markets Group, Inc. (or a similar organization or agency succeeding to its functions of reporting prices), the most recent bid price per share of Common Stock so reported, or (d) in all other cases, the fair market value of the Common Stock as determined by an independent appraiser selected in good faith by the Holder and reasonably acceptable to the Company, the fees and expenses of which shall be paid by the Company.

## Section 2. Exercise.

a) Exercise of the purchase rights represented by this Warrant may be made, in whole or in part, at any time or times on or after the Initial Exercise Date and on or before the Termination Date by delivery to the Company (or such other office or agency of the Company as it may designate by notice in writing to the registered Holder at the address of the Holder appearing on the books of the Company) of a duly executed facsimile copy (or e-mail attachment) of the Notice of Exercise Form annexed hereto. Within two (2) Trading Days following the date of exercise as aforesaid, the Holder shall deliver the aggregate Exercise Price for the shares specified in the applicable Notice of Exercise by wire transfer or cashier’s check drawn on a United States bank unless the cashless exercise procedure specified in Section 2(c) below is specified in the applicable Notice of Exercise. No ink-original Notice of Exercise shall be required, nor shall any medallion guarantee (or other type of guarantee or notarization) of any Notice of Exercise form be required. Notwithstanding anything herein to the contrary, the Holder shall not be required to physically surrender this Warrant to the Company until the Holder has purchased all of the Warrant Shares available hereunder and the Warrant has been exercised in full, in which case, the Holder shall surrender this Warrant to the Company for cancellation within five (5) Trading Days of the date the final Notice of Exercise is delivered to the Company. Partial exercises of this Warrant resulting in purchases of a portion of the total number of Warrant Shares available hereunder shall have the effect of lowering the outstanding number of Warrant Shares purchasable hereunder in an amount equal to the applicable number of Warrant Shares purchased. The Holder and the Company shall maintain records showing the number of Warrant Shares purchased and the date of such purchases. The Company shall deliver any objection to any Notice of Exercise Form within two (2) Business Days of receipt of such notice. **The Holder and any assignee, by acceptance of this Warrant, acknowledge and agree that, by reason of the provisions of this paragraph, following the purchase of a portion of the Warrant Shares hereunder, the number of Warrant Shares available for purchase hereunder at any given time may be less than the amount stated on the face hereof.**

b) Exercise Price. The exercise price per share of the Common Stock under this Warrant shall be \$0.75, subject to adjustment hereunder (the "Exercise Price").

c) Cashless Exercise. If at any time on or after the Initial Exercise Date, there is no effective registration statement registering, or the prospectus contained therein is not available for the issuance of the Warrant Shares to the Holder, then this Warrant may also be exercised, in whole or in part, at such time by means of a "cashless exercise" in which the Holder shall be entitled to receive the number of Warrant Shares equal to the quotient obtained by dividing [(A-B) (X)] by (A), where:

- (A) = the VWAP on the Trading Day immediately preceding the date on which Holder elects to exercise this Warrant by means of a "cashless exercise," as set forth in the applicable Notice of Exercise;
- (B) = the Exercise Price of this Warrant, as adjusted hereunder; and
- (C) = the number of Warrant Shares that would be issuable upon exercise of this Warrant in accordance with the terms of this Warrant if such exercise were by means of a cash exercise rather than a cashless exercise.

If Warrant Shares are issued in such a "cashless exercise," the parties acknowledge and agree that in accordance with Section 3(a)(9) of the Securities Act, the Warrant Shares shall take on the registered characteristics of the Warrants being exercised, and the holding period of the Warrants being exercised may be tacked on to the holding period of the Warrant Shares. The Company agrees not to take any position contrary to this Section 2(c).

Notwithstanding anything herein to the contrary, on the Termination Date, this Warrant shall be automatically exercised via cashless exercise pursuant to this Section 2(c).

d) Mechanics of Exercise.

i. Delivery of Warrant Shares Upon Exercise. The Company shall cause the Warrant Shares purchased hereunder to be transmitted by its Transfer Agent to the Holder by crediting the account of the Holder's or its designee's balance account with The Depository Trust Company through its Deposit or Withdrawal at Custodian system ("DWAC") if the Company is then a participant in such system and either (A) there is an effective registration statement permitting the issuance of the Warrant Shares to or resale of the Warrant Shares by Holder, or (B) the Warrant Shares are eligible for resale by the Holder without volume or manner-of-sale limitations pursuant to Rule 144 and, in either case, the Warrant Shares have been sold by the Holder prior to the Warrant Share Delivery Date (as defined below), and otherwise by physical delivery of a certificate, registered in the Company's share register in the name of the Holder or its designee, for the number of Warrant Shares to which the Holder is entitled pursuant to such exercise to the address specified by the Holder in the Notice of Exercise by the date that is two (2) Trading Days after the delivery to the Company of the Notice of Exercise (such date, the "Warrant Share Delivery Date"). If the Warrant Shares can be delivered via DWAC, the transfer agent shall have received from the Company, at the expense of the Company, any legal opinions or other documentation required by it to deliver such Warrant Shares without legend (subject to receipt by the Company of reasonable back up documentation from the Holder, including with respect to affiliate status) and, if applicable and requested by the Company prior to the Warrant Share Delivery Date, the transfer agent shall have received from the Holder a confirmation of sale of the Warrant Shares (provided the requirement of the Holder to provide a confirmation as to the sale of Warrant Shares shall not be applicable to the issuance of unlegended Warrant Shares upon a cashless exercise of this Warrant if the Warrant Shares are then eligible for resale pursuant to Rule 144(b)(1)). The Warrant Shares shall be deemed to have been issued, and Holder or any other person so designated to be named therein shall be deemed to have become a holder of record of such shares for all purposes, as of the date the Warrant has been exercised, with payment to the Company of the Exercise Price (or by cashless exercise, if permitted) and all taxes required to be paid by the Holder, if any, pursuant to Section 2(d)(vi) prior to the issuance of such shares, having been paid. If the Company fails for any reason to deliver to the Holder the Warrant Shares subject to a Notice of Exercise by the second Trading Day following the Warrant Share Delivery Date, the Company shall pay to the Holder, in cash, as liquidated damages and not as a penalty, for each \$1,000 of Warrant Shares subject to such exercise (based on the VWAP of the Common Stock on the date of the applicable Notice of Exercise), \$10 per Trading Day (increasing to \$20 per Trading Day on the fifth Trading Day after such liquidated damages begin to accrue) for each Trading Day after the second Trading Day following such Warrant Share Delivery Date until such Warrant Shares are delivered or Holder rescinds such exercise.

ii. Delivery of New Warrants Upon Exercise. If this Warrant shall have been exercised in part, the Company shall, at the request of a Holder and upon surrender of this Warrant certificate, at the time of delivery of the Warrant Shares, deliver to the Holder a new Warrant evidencing the rights of the Holder to purchase the unpurchased Warrant Shares called for by this Warrant, which new Warrant shall in all other respects be identical with this Warrant.

iii. Rescission Rights. If the Company fails to cause its Transfer Agent to deliver to the Holder the Warrant Shares pursuant to Section 2(d)(i) by the Warrant Share Delivery Date, then the Holder will have the right to rescind such exercise; provided, however, that the Holder shall be required to return any Warrant Shares or Common Stock subject to any such rescinded exercise notice concurrently with the return to Holder of the aggregate Exercise Price paid to the Company for such Warrant Shares and the restoration of Holder's right to acquire such Warrant Shares pursuant to this Warrant (including, issuance of a replacement warrant certificate evidencing such restored right).

iv. Compensation for Buy-In on Failure to Timely Deliver Warrant Shares Upon Exercise. In addition to any other rights available to the Holder, if the Company fails to cause its Transfer Agent to transmit to the Holder the Warrant Shares pursuant to an exercise on or before the Warrant Share Delivery Date, and if after such date the Holder is required by its broker to purchase (in an open market transaction or otherwise) or the Holder's brokerage firm otherwise purchases, shares of Common Stock to deliver in satisfaction of a sale by the Holder of the Warrant Shares which the Holder anticipated receiving upon such exercise (a "Buy-In"), then the Company shall (A) pay in cash to the Holder the amount, if any, by which (x) the Holder's total purchase price (including brokerage commissions, if any) for the shares of Common Stock so purchased exceeds (y) the amount obtained by multiplying (1) the number of Warrant Shares that the Company was required to deliver to the Holder in connection with the exercise at issue times (2) the price at which the sell order giving rise to such purchase obligation was executed, and (B) at the option of the Holder, either reinstate the portion of the Warrant and equivalent number of Warrant Shares for which such exercise was not honored (in which case such exercise shall be deemed rescinded) or deliver to the Holder the number of shares of Common Stock that would have been issued had the Company timely complied with its exercise and delivery obligations hereunder. For example, if the Holder purchases Common Stock having a total purchase price of \$11,000 to cover a Buy-In with respect to an attempted exercise of shares of Common Stock with an aggregate sale price giving rise to such purchase obligation of \$10,000, under clause (A) of the immediately preceding sentence the Company shall be required to pay the Holder \$1,000. The Holder shall provide the Company written notice indicating the amounts payable to the Holder in respect of the Buy-In and, upon request of the Company, evidence of the amount of such loss. Nothing herein shall limit a Holder's right to pursue any other remedies available to it hereunder, at law or in equity including, without limitation, a decree of specific performance and/or injunctive relief with respect to the Company's failure to timely deliver shares of Common Stock upon exercise of the Warrant as required pursuant to the terms hereof.

v. No Fractional Shares or Scrip. No fractional shares or scrip representing fractional shares shall be issued upon the exercise of this Warrant. As to any fraction of a share which the Holder would otherwise be entitled to purchase upon such exercise, the Company shall, at its election, either pay a cash adjustment in respect of such final fraction in an amount equal to such fraction multiplied by the Exercise Price or round up to the next whole share.

vi. Charges, Taxes and Expenses. Issuance of Warrant Shares shall be made without charge to the Holder for any issue or transfer tax or other incidental expense in respect of the issuance of such Warrant Shares, all of which taxes and expenses shall be paid by the Company, and such Warrant Shares shall be issued in the name of the Holder or in such name or names as may be directed by the Holder; provided, however, that in the event that Warrant Shares are to be issued in a name other than the name of the Holder, this Warrant when surrendered for exercise shall be accompanied by the Assignment Form attached hereto duly executed by the Holder and the Company may require, as a condition thereto, the payment of a sum sufficient to reimburse it for any transfer tax incidental thereto. The Company shall pay all transfer agent fees required for same-day processing of any Notice of Exercise and all fees to the Depository Trust Company (or another established clearing corporation performing similar functions) required for same-day electronic delivery of the Warrant Shares.

vii. Closing of Books. The Company will not close its stockholder books or records in any manner which prevents the timely exercise of this Warrant, pursuant to the terms hereof.

viii. Signature. This Section 2 and the exercise form attached hereto set forth the totality of the procedures required of the Holder in order to exercise this Warrant. Without limiting the preceding sentences, no ink-original exercise form shall be required, nor shall any medallion guarantee (or other type of guarantee or notarization) of any exercise form be required in order to exercise this Warrant. No additional legal opinion, other information or instructions shall be required of the Holder to exercise this Warrant. The Company shall honor exercises of this Warrant and shall deliver Shares underlying this Purchase Warrant in accordance with the terms, conditions and time periods set forth herein.

e) Holder's Exercise Limitations. The Company shall not effect any exercise of this Warrant, and a Holder shall not have the right to exercise any portion of this Warrant, pursuant to Section 2 or otherwise, to the extent that after giving effect to such issuance after exercise as set forth on the applicable Notice of Exercise, the Holder (together with the Holder's Affiliates, and any other Persons acting as a group together with the Holder or any of the Holder's Affiliates), would beneficially own in excess of the Beneficial Ownership Limitation (as defined below). For purposes of the foregoing sentence, the number of shares of Common Stock beneficially owned by the Holder and its Affiliates shall include the number of shares of Common Stock issuable upon exercise of this Warrant with respect to which such determination is being made, but shall exclude the number of shares of Common Stock which would be issuable upon (i) exercise of the remaining, nonexercised portion of this Warrant beneficially owned by the Holder or any of its Affiliates and (ii) exercise or conversion of the unexercised or nonconverted portion of any other securities of the Company (including, without limitation, any other Common Stock Equivalents) subject to a limitation on conversion or exercise analogous to the limitation contained herein beneficially owned by the Holder or any of its Affiliates. Except as set forth in the preceding sentence, for purposes of this Section 2(e), beneficial ownership shall be calculated in accordance with Section 13(d) of the Exchange Act and the rules and regulations promulgated thereunder, it being acknowledged by the Holder that the Company is not representing to the Holder that such calculation is in compliance with Section 13(d) of the Exchange Act and the Holder is solely responsible for any schedules required to be filed in accordance therewith. To the extent that the limitation contained in this Section 2(e) applies, the determination of whether this Warrant is exercisable (in relation to other securities owned by the Holder together with any Affiliates) and of which portion of this Warrant is exercisable shall be in the sole discretion of the Holder, and the submission of a Notice of Exercise shall be deemed to be the Holder's determination of whether this Warrant is exercisable (in relation to other securities owned by the Holder together with any Affiliates) and of which portion of this Warrant is exercisable, in each case subject to the Beneficial Ownership Limitation, and the Company shall have no obligation to verify or confirm the accuracy of such determination. In addition, a determination as to any group status as contemplated above shall be determined in accordance with Section 13(d) of the Exchange Act and the rules and regulations promulgated thereunder. For purposes of this Section 2(e), in determining the number of outstanding shares of Common Stock, a Holder may rely on the number of outstanding shares of Common Stock as reflected in (A) the Company's most recent periodic or annual report filed with the Commission, as the case may be, (B) a more recent public announcement by the Company or (C) a more recent written notice by the Company or the Company's Transfer Agent setting forth the number of shares of Common Stock outstanding. Upon the written or oral request of a Holder, the Company shall within two Trading Days confirm orally and in writing to the Holder the number of shares of Common Stock then outstanding. In any case, the number of outstanding shares of Common Stock shall be determined after giving effect to the conversion or exercise of securities of the Company, including this Warrant, by the Holder or its Affiliates since the date as of which such number of outstanding shares of Common Stock was reported. The "Beneficial Ownership Limitation" shall be 9.99% of the number of shares of the Common Stock outstanding immediately after giving effect to the issuance of shares of Common Stock issuable upon exercise of this Warrant. The Holder, upon notice to the Company, may increase or decrease the Beneficial Ownership Limitation provisions of this Section 2(e), provided that the Beneficial Ownership Limitation in no event exceeds 9.99% of the number of shares of the Common Stock outstanding immediately after giving effect to the issuance of shares of Common Stock upon exercise of this Warrant held by the Holder and the provisions of this Section 2(e) shall continue to apply. Any increase in the Beneficial Ownership Limitation will not be effective until the 61<sup>st</sup> day after such notice is delivered to the Company. The provisions of this paragraph shall be construed and implemented in a manner otherwise than in strict conformity with the terms of this Section 2(e) to correct this paragraph (or any portion hereof) which may be defective or inconsistent with the intended Beneficial Ownership Limitation herein contained or to make changes or supplements necessary or desirable to properly give effect to such limitation. The limitations contained in this paragraph shall apply to a successor holder of this Warrant.

### Section 3. Certain Adjustments.

a) Stock Dividends and Splits. If the Company, at any time while this Warrant is outstanding: (i) pays a stock dividend or otherwise makes a distribution or distributions on shares of its Common Stock or any other equity or equity equivalent securities payable in shares of Common Stock (which, for avoidance of doubt, shall not include any shares of Common Stock issued by the Company upon exercise of this Warrant), (ii) subdivides outstanding shares of Common Stock into a larger number of shares, (iii) combines (including by way of reverse stock split) outstanding shares of Common Stock into a smaller number of shares, or (iv) issues by reclassification of shares of the Common Stock any shares of capital stock of the Company, then in each case the Exercise Price shall be multiplied by a fraction of which the numerator shall be the number of shares of Common Stock (excluding treasury shares, if any) outstanding immediately before such event and of which the denominator shall be the number of shares of Common Stock outstanding immediately after such event, and the number of shares issuable upon exercise of this Warrant shall be proportionately adjusted such that the aggregate Exercise Price of this Warrant shall remain unchanged. Any adjustment made pursuant to this Section 3(a) shall become effective immediately after the record date for the determination of stockholders entitled to receive such dividend or distribution and shall become effective immediately after the effective date in the case of a subdivision, combination or re-classification. For the purposes of clarification, the Exercise Price of this Warrant will not be adjusted in the event that the Company or any Subsidiary thereof, as applicable, sells or grants any option to purchase, or sells or grants any right to reprice, or otherwise disposes of or issues (or announces any offer, sale, grant or any option to purchase or other disposition) any Common Stock or Common Stock Equivalents, at an effective price per share less than the Exercise Price then in effect.



b) Subsequent Rights Offerings. In addition to any adjustments pursuant to Section 3(a) above, if at any time the Company grants, issues or sells any Common Stock Equivalents or rights to purchase stock, warrants, securities or other property pro rata to the record holders of any class of shares of Common Stock (the "Purchase Rights"), then the Holder will be entitled to acquire, upon the terms applicable to such Purchase Rights, the aggregate Purchase Rights which the Holder could have acquired if the Holder had held the number of shares of Common Stock acquirable upon complete exercise of this Warrant (without regard to any limitations on exercise hereof, including without limitation, the Beneficial Ownership Limitation) immediately before the date on which a record is taken for the grant, issuance or sale of such Purchase Rights, or, if no such record is taken, the date as of which the record holders of shares of Common Stock are to be determined for the grant, issue or sale of such Purchase Rights (provided, however, to the extent that the Holder's right to participate in any such Purchase Right would result in the Holder exceeding the Beneficial Ownership Limitation, then the Holder shall not be entitled to participate in such Purchase Right to such extent (or beneficial ownership of such shares of Common Stock as a result of such Purchase Right to such extent) and such Purchase Right to such extent shall be held in abeyance for the Holder until such time, if ever, as its right thereto would not result in the Holder exceeding the Beneficial Ownership Limitation).

c) During such time as this Warrant is outstanding, if the Company shall declare or make any dividend (other than cash dividends) or other distribution of its assets (or rights to acquire its assets) to holders of shares of Common Stock, by way of return of capital or otherwise (including, without limitation, any distribution of shares or other securities, property or options by way of a dividend, spin off, reclassification, corporate rearrangement, scheme of arrangement or other similar transaction) (a "Distribution"), at any time after the issuance of this Warrant, then, in each such case, the Holder shall be entitled to participate in such Distribution to the same extent that the Holder would have participated therein if the Holder had held the number of shares of Common Stock acquirable upon complete exercise of this Warrant (without regard to any limitations on exercise hereof, including without limitation, the Beneficial Ownership Limitation) immediately before the date of which a record is taken for such Distribution, or, if no such record is taken, the date as of which the record holders of shares of Common Stock are to be determined for the participation in such Distribution (provided, however, to the extent that the Holder's right to participate in any such Distribution would result in the Holder exceeding the Beneficial Ownership Limitation, then the Holder shall not be entitled to participate in such Distribution to such extent (or in the beneficial ownership of any shares of Common Stock as a result of such Distribution to such extent) and the portion of such Distribution shall be held in abeyance for the benefit of the Holder until such time, if ever, as its right thereto would not result in the Holder exceeding the Beneficial Ownership Limitation). To the extent that this Warrant has not been partially or completely exercised at the time of such Distribution, such portion of the Distribution shall be held in abeyance for the benefit of the Holder until the Holder has exercised this Warrant.

d) Fundamental Transaction. If, at any time while this Warrant is outstanding, (i) the Company, directly or indirectly, in one or more related transactions effects any merger or consolidation of the Company with or into another Person, (ii) the Company, directly or indirectly, effects any sale, lease, license, assignment, transfer, conveyance or other disposition of all or substantially all of its assets in one or a series of related transactions, (iii) any, direct or indirect, purchase offer, tender offer or exchange offer (whether by the Company or another Person) is completed pursuant to which holders of Common Stock are permitted to sell, tender or exchange their shares for other securities, cash or property and has been accepted by the holders of 50% or more of the outstanding Common Stock, (iv) the Company, directly or indirectly, in one or more related transactions effects any reclassification, reorganization or recapitalization of the Common Stock or any compulsory share exchange pursuant to which the Common Stock is effectively converted into or exchanged for other securities, cash or property, or (v) the Company, directly or indirectly, in one or more related transactions consummates a stock or share purchase agreement or other business combination (including, without limitation, a reorganization, recapitalization, spin-off or scheme of arrangement) with another Person or group of Persons whereby such other Person or group acquires more than 50% of the outstanding shares of Common Stock (not including any shares of Common Stock held by the other Person or other Persons making or party to, or associated or affiliated with the other Persons making or party to, such stock or share purchase agreement or other business combination) (each a “Fundamental Transaction”), then, upon any subsequent exercise of this Warrant, the Holder shall have the right to receive, for each Warrant Share that would have been issuable upon such exercise immediately prior to the occurrence of such Fundamental Transaction, at the option of the Holder (without regard to any limitation in Section 2(e) on the exercise of this Warrant), the number of shares of Common Stock of the successor or acquiring corporation or of the Company, if it is the surviving corporation, and any additional consideration (the “Alternate Consideration”) receivable by holders of Common Stock as a result of such Fundamental Transaction for each share of Common Stock for which this Warrant is exercisable immediately prior to such Fundamental Transaction (without regard to any limitation in Section 2(e) on the exercise of this Warrant). For purposes of any such exercise, the determination of the Exercise Price shall be appropriately adjusted to apply to such Alternate Consideration based on the amount of Alternate Consideration issuable in respect of one share of Common Stock in such Fundamental Transaction, and the Company shall apportion the Exercise Price among the Alternate Consideration in a reasonable manner reflecting the relative value of any different components of the Alternate Consideration. If holders of Common Stock are given any choice as to the securities, cash or property to be received in a Fundamental Transaction, then the Holder shall be given the same choice as to the Alternate Consideration it receives upon any exercise of this Warrant following such Fundamental Transaction. The Company shall cause any successor entity in a Fundamental Transaction in which the Company is not the survivor (the “Successor Entity”) to assume in writing all of the obligations of the Company under this Warrant in accordance with the provisions of this Section 3(d) pursuant to written agreements in form and substance reasonably satisfactory to the Holder and approved by the Holder (without unreasonable delay) prior to such Fundamental Transaction and shall, at the option of the Holder, deliver to the Holder in exchange for this Warrant a security of the Successor Entity evidenced by a written instrument substantially similar in form and substance to this Warrant which is exercisable for a corresponding number of shares of capital stock of such Successor Entity (or its parent entity) equivalent to the shares of Common Stock acquirable and receivable upon exercise of this Warrant (without regard to any limitations on the exercise of this Warrant) prior to such Fundamental Transaction, and with an exercise price which applies the exercise price hereunder to such shares of capital stock (but taking into account the relative value of the shares of Common Stock pursuant to such Fundamental Transaction and the value of such shares of capital stock, such number of shares of capital stock and such exercise price being for the purpose of protecting the economic value of this Warrant immediately prior to the consummation of such Fundamental Transaction), and which is reasonably satisfactory in form and substance to the Holder. Upon the occurrence of any such Fundamental Transaction, the Successor Entity shall succeed to, and be substituted for (so that from and after the date of such Fundamental Transaction, the provisions of this Warrant referring to the “Company” shall refer instead to the Successor Entity), and may exercise every right and power of the Company and shall assume all of the obligations of the Company under this Warrant with the same effect as if such Successor Entity had been named as the Company herein.

e) Calculations. All calculations under this Section 3 shall be made to the nearest cent or the nearest 1/100th of a share, as the case may be. For purposes of this Section 3, the number of shares of Common Stock deemed to be issued and outstanding as of a given date shall be the sum of the number of shares of Common Stock (excluding treasury shares, if any) issued and outstanding.

f) Notice to Holder.

i. Adjustment to Exercise Price. Whenever the Exercise Price is adjusted pursuant to any provision of this Section 3, the Company shall promptly mail to the Holder a notice setting forth the Exercise Price after such adjustment and any resulting adjustment to the number of Warrant Shares and setting forth a brief statement of the facts requiring such adjustment.

ii. Notice to Allow Exercise by Holder. If (A) the Company shall declare a dividend (or any other distribution in whatever form) on the Common Stock, (B) the Company shall declare a special nonrecurring cash dividend on or a redemption of the Common Stock, (C) the Company shall authorize the granting to all holders of the Common Stock rights or warrants to subscribe for or purchase any shares of capital stock of any class or of any rights, (D) the approval of any stockholders of the Company shall be required in connection with any reclassification of the Common Stock, any consolidation or merger to which the Company is a party, any sale or transfer of all or substantially all of the assets of the Company, or any compulsory share exchange whereby the Common Stock is converted into other securities, cash or property, or (E) the Company shall authorize the voluntary or involuntary dissolution, liquidation or winding up of the affairs of the Company, then, in each case, the Company shall cause to be mailed a notice to the Holder at its last address as it shall appear upon the Warrant Register (as defined below) of the Company, at least 20 calendar days prior to the applicable record or effective date hereinafter specified, stating (x) the date on which a record is to be taken for the purpose of such dividend, distribution, redemption, rights or warrants, or if a record is not to be taken, the date as of which the holders of the Common Stock of record to be entitled to such dividend, distributions, redemption, rights or warrants are to be determined or (y) the date on which such reclassification, consolidation, merger, sale, transfer or share exchange is expected to become effective or close, and the date as of which it is expected that holders of the Common Stock of record shall be entitled to exchange their shares of the Common Stock for securities, cash or other property deliverable upon such reclassification, consolidation, merger, sale, transfer or share exchange; provided that the failure to provide such notice or any defect therein shall not affect the validity of the corporate action required to be specified in such notice. To the extent that any notice provided hereunder constitutes, or contains, material, non-public information regarding the Company or any of the Subsidiaries, the Company shall simultaneously file such notice with the Commission pursuant to a Current Report on Form 8-K. The Holder shall remain entitled to exercise this Warrant during the period commencing on the date of such notice to the effective date of the event triggering such notice except as may otherwise be expressly set forth herein.

Section 4. Transfer of Warrant.

a) Transferability. Pursuant to FINRA Rule 5110(g)(1), neither this Warrant nor any Warrant Shares issued upon exercise of this Warrant shall be sold, transferred, assigned, pledged, or hypothecated, or be the subject of any hedging, short sale, derivative, put, or call transaction that would result in the effective economic disposition of the securities by any person for a period of 180 days immediately following the date of effectiveness or commencement of sales of the offering pursuant to which this Warrant is being issued, except the transfer of any security:

i. by operation of law or by reason of reorganization of the Company;

ii. to any FINRA member firm participating in the offering and the officers or partners thereof, if all securities so transferred remain subject to the lock-up restriction in this Section 4(a) for the remainder of the time period;

iii. if the aggregate amount of securities of the Company held by the Holder or related person do not exceed 1% of the securities being offered;

iv. that is beneficially owned on a pro-rata basis by all equity owners of an investment fund, provided that no participating member manages or otherwise directs investments by the fund, and participating members in the aggregate do not own more than 10% of the equity in the fund; or

v. the exercise or conversion of any security, if all securities received remain subject to the lock-up restriction in this Section 4(a) for the remainder of the time period.

Subject to the foregoing restriction, any applicable securities laws and the conditions set forth in Section 4(d), this Warrant and all rights hereunder (including, without limitation, any registration rights) are transferable, in whole or in part, upon surrender of this Warrant at the principal office of the Company or its designated agent, together with a written assignment of this Warrant substantially in the form attached hereto duly executed by the Holder or its agent or attorney and funds sufficient to pay any transfer taxes payable upon the making of such transfer. Upon such surrender and, if required, such payment, the Company shall execute and deliver a new Warrant or Warrants in the name of the assignee or assignees, as applicable, and in the denomination or denominations specified in such instrument of assignment, and shall issue to the assignor a new Warrant evidencing the portion of this Warrant not so assigned, and this Warrant shall promptly be cancelled. Notwithstanding anything herein to the contrary, the Holder shall not be required to physically surrender this Warrant to the Company unless the Holder has assigned this Warrant in full, in which case, the Holder shall surrender this Warrant to the Company within three Trading Days of the date the Holder delivers an assignment form to the Company assigning this Warrant full. The Warrant, if properly assigned in accordance herewith, may be exercised by a new holder for the purchase of Warrant Shares without having a new Warrant issued.

b) New Warrants. This Warrant may be divided or combined with other Warrants upon presentation hereof at the aforesaid office of the Company, together with a written notice specifying the names and denominations in which new Warrants are to be issued, signed by the Holder or its agent or attorney. Subject to compliance with Section 4(a), as to any transfer which may be involved in such division or combination, the Company shall execute and deliver a new Warrant or Warrants in exchange for the Warrant or Warrants to be divided or combined in accordance with such notice. All Warrants issued on transfers or exchanges shall be dated the initial issuance date of this Warrant and shall be identical with this Warrant except as to the number of Warrant Shares issuable pursuant thereto.

c) Warrant Register. The Company shall register this Warrant, upon records to be maintained by the Company for that purpose (the "Warrant Register"), in the name of the record Holder hereof from time to time. The Company may deem and treat the registered Holder of this Warrant as the absolute owner hereof for the purpose of any exercise hereof or any distribution to the Holder, and for all other purposes, absent actual notice to the contrary.

d) Representation by the Holder. The Holder, by the acceptance hereof, represents and warrants that it is acquiring this Warrant and, upon any exercise hereof, will acquire the Warrant Shares issuable upon such exercise, for its own account and not with a view to or for distributing or reselling such Warrant Shares or any part thereof in violation of the Securities Act or any applicable state securities law, except pursuant to sales registered or exempted under the Securities Act.

#### Section 5. Miscellaneous.

a) No Rights as Stockholder Until Exercise. This Warrant does not entitle the Holder to any voting rights, dividends or other rights as a stockholder of the Company prior to the exercise hereof as set forth in Section 2(d)(i).

b) Loss, Theft, Destruction or Mutilation of Warrant. The Company covenants that upon receipt by the Company of evidence reasonably satisfactory to it of the loss, theft, destruction or mutilation of this Warrant or any certificate relating to the Warrant Shares, and in case of loss, theft or destruction, of indemnity or security reasonably satisfactory to it (which, in the case of the Warrant, shall not include the posting of any bond), and upon surrender and cancellation of such Warrant or stock certificate, if mutilated, the Company will make and deliver a new Warrant or stock certificate of like tenor and dated as of such cancellation, in lieu of such Warrant or stock certificate.

c) Saturdays, Sundays, Holidays, etc. If the last or appointed day for the taking of any action or the expiration of any right required or granted herein shall not be a Trading Day, then, such action may be taken or such right may be exercised on the next succeeding Trading Day.

d) Authorized Shares.

The Company covenants that, during the period the Warrant is outstanding, it will reserve from its authorized and unissued Common Stock a sufficient number of shares to provide for the issuance of the Warrant Shares upon the exercise of any purchase rights under this Warrant. The Company will take all such reasonable action as may be necessary to assure that such Warrant Shares may be issued as provided herein without violation of any applicable law or regulation, or of any requirements of the Trading Market upon which the Common Stock may be listed. The Company covenants that all Warrant Shares which may be issued upon the exercise of the purchase rights represented by this Warrant will, upon exercise of the purchase rights represented by this Warrant and payment for such Warrant Shares in accordance herewith, be duly authorized, validly issued, fully paid and nonassessable and free from all taxes, liens and charges created by the Company in respect of the issue thereof (other than taxes in respect of any transfer occurring contemporaneously with such issue).

Except and to the extent as waived or consented to by the Holder, the Company shall not by any action, including, without limitation, amending its certificate of incorporation or through any reorganization, transfer of assets, consolidation, merger, dissolution, issue or sale of securities or any other voluntary action, avoid or seek to avoid the observance or performance of any of the terms of this Warrant, but will at all times in good faith assist in the carrying out of all such terms and in the taking of all such actions as may be necessary or appropriate to protect the rights of Holder as set forth in this Warrant against impairment. Without limiting the generality of the foregoing, the Company will (i) not increase the par value of any Warrant Shares above the amount payable therefor upon such exercise immediately prior to such increase in par value, (ii) take all such action as may be necessary or appropriate in order that the Company may validly and legally issue fully paid and nonassessable Warrant Shares upon the exercise of this Warrant, and (iii) shall, so long as any of the Warrants are outstanding, take all action necessary to reserve and keep available out of its authorized and unissued shares of Common Stock, solely for the purpose of effecting the exercise of the Warrants, the number of shares of Common Stock as shall from time to time be necessary to effect the exercise of the Warrants then outstanding (without regard to any limitations on exercise).

e) Governing Law. This Warrant shall be governed by and construed and enforced in accordance with, and all questions concerning the construction, validity, interpretation and performance of this Warrant shall be governed by, the internal laws of the State of New York, without giving effect to any choice of law or conflict of law provision or rule (whether of the State of New York or any other jurisdictions) that would cause the application of the laws of any jurisdictions other than the State of New York.

f) Restrictions. The Holder acknowledges that the Warrant Shares acquired upon the exercise of this Warrant, if not registered, and the Holder does not utilize cashless exercise, will have restrictions upon resale imposed by state and federal securities laws.

g) Nonwaiver and Expenses. No course of dealing or any delay or failure to exercise any right hereunder on the part of Holder shall operate as a waiver of such right or otherwise prejudice the Holder's rights, powers or remedies. Without limiting any other provision of this Warrant or the Placement Agency Agreement, if the Company willfully and knowingly fails to comply with any provision of this Warrant, which results in any material damages to the Holder, the Company shall pay to the Holder such amounts as shall be sufficient to cover any costs and expenses including, but not limited to, reasonable attorneys' fees, including those of appellate proceedings, incurred by the Holder in collecting any amounts due pursuant hereto or in otherwise enforcing any of its rights, powers or remedies hereunder.

h) Notices. Any notice, request or other document required or permitted to be given or delivered to the Holder by the Company shall be delivered in accordance with the notice provisions of the Placement Agency Agreement.

i) Limitation of Liability. No provision hereof, in the absence of any affirmative action by the Holder to exercise this Warrant to purchase Warrant Shares, and no enumeration herein of the rights or privileges of the Holder, shall give rise to any liability of the Holder for the purchase price of any Common Stock or as a stockholder of the Company, whether such liability is asserted by the Company or by creditors of the Company.

j) Remedies. The Holder, in addition to being entitled to exercise all rights granted by law, including recovery of damages, will be entitled to specific performance of its rights under this Warrant. The Company agrees that monetary damages would not be adequate compensation for any loss incurred by reason of a breach by it of the provisions of this Warrant and hereby agrees to waive and not to assert the defense in any action for specific performance that a remedy at law would be adequate. Notwithstanding the foregoing or anything else herein to the contrary, if the Company is for any reason unable to issue and deliver Warrant Shares upon exercise of this Warrant as required pursuant to the terms hereof, the Company shall have no obligation to "net cash settle" this Warrant.

k) Successors and Assigns. Subject to applicable securities laws, this Warrant and the rights and obligations evidenced hereby shall inure to the benefit of and be binding upon the successors and permitted assigns of the Company and the successors and permitted assigns of Holder. The provisions of this Warrant are intended to be for the benefit of any Holder from time to time of this Warrant and shall be enforceable by the Holder or holder of Warrant Shares.

1) Amendment. This Warrant may be modified or amended or the provisions hereof waived with the written consent of the Company and the Holder.

m) Severability. Wherever possible, each provision of this Warrant shall be interpreted in such manner as to be effective and valid under applicable law, but if any provision of this Warrant shall be prohibited by or invalid under applicable law, such provision shall be ineffective to the extent of such prohibition or invalidity, without invalidating the remainder of such provisions or the remaining provisions of this Warrant.

n) Headings. The headings used in this Warrant are for the convenience of reference only and shall not, for any purpose, be deemed a part of this Warrant.

*(Signature Page Follows)*

IN WITNESS WHEREOF, the Company has caused this Warrant to be executed by its officer thereunto duly authorized as of the date first above indicated.

**MATINAS BIOPHARMA HOLDINGS, INC.**

By: \_\_\_\_\_

Name: Jerome D. Jabbour

Title: Chief Executive Officer



**NOTICE OF EXERCISE**

**TO: MATINAS BIOPHARMA HOLDINGS, INC.**

(1) The undersigned hereby elects to purchase \_\_\_\_\_ Warrant Shares of the Company pursuant to the terms of the attached Warrant (only if exercised in full), and tenders herewith payment of the exercise price in full, together with all applicable transfer taxes, if any.

(2) Payment shall take the form of (check applicable box):

- in lawful money of the United States; or
- if permitted the cancellation of such number of Warrant Shares as is necessary, in accordance with the formula set forth in subsection 2(c), to exercise this Warrant with respect to the maximum number of Warrant Shares purchasable pursuant to the cashless exercise procedure set forth in subsection 2(c).

(3) Please register and issue said Warrant Shares in the name of the undersigned or in such other name as is specified below:

\_\_\_\_\_

The Warrant Shares shall be delivered to the following DWAC Account Number or by physical delivery of a certificate to:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

[SIGNATURE OF HOLDER]

Name of Investing Entity: \_\_\_\_\_

*Signature of Authorized Signatory of Investing Entity:* \_\_\_\_\_

Name of Authorized Signatory: \_\_\_\_\_

Title of Authorized Signatory: \_\_\_\_\_

Date: \_\_\_\_\_

**ASSIGNMENT FORM**

(To assign the foregoing warrant, execute this form and supply required information. Do not use this form to exercise the warrant.)

FOR VALUE RECEIVED, [\_\_\_\_] all of or [\_\_\_\_\_] Warrant Shares of the foregoing Warrant and all rights evidenced thereby are hereby assigned to

\_\_\_\_\_ whose address is  
\_\_\_\_\_  
\_\_\_\_\_.

Dated: \_\_\_\_\_, \_\_\_\_\_

Holder's Signature: \_\_\_\_\_

Holder's Address: \_\_\_\_\_

NOTE: The signature to this Assignment Form must correspond with the name as it appears on the face of the Warrant, without alteration or enlargement or any change whatsoever. Officers of corporations and those acting in a fiduciary or other representative capacity should file proper evidence of authority to assign the foregoing Warrant.

**EXHIBIT B**

Form of Lock-Up Agreement

LOCK-UP LETTER AGREEMENT

ThinkEquity  
A Division of Fordham Financial Management, Inc.  
17 State St., 22<sup>nd</sup> Fl  
New York, NY 10004

As Placement Agent

Ladies and Gentlemen:

The undersigned understands that you (the "**Placement Agent**") propose to enter into a Placement Agency Agreement (the "**Agreement**") pursuant to which the Placement Agent will offer, as agent, the shares (the "**Stock**") of Series B Convertible Preferred Stock, par value \$0.0001 per share (the "**Series B Preferred Stock**"), of Matinas BioPharma Holdings, Inc., a Delaware corporation (the "**Company**"), to the public (the "**Offering**").

In consideration of the execution of the Agreement by the Placement Agent, and for other good and valuable consideration, the undersigned hereby irrevocably agrees that, without the prior written consent of the Placement Agent, the undersigned will not, directly or indirectly, (1) offer for sale, sell, pledge, or otherwise transfer or dispose of (or enter into any transaction or device that is designed to, or could be expected to, result in the transfer or disposition by any person at any time in the future of) any shares of capital stock of the Company (including, without limitation, shares of common stock, par value \$0.0001 per share, of the Company ("**Common Stock**") that may be deemed to be beneficially owned by the undersigned in accordance with the rules and regulations of the Securities and Exchange Commission and shares of Common Stock that may be issued upon exercise of any options or warrants) or securities convertible into or exercisable or exchangeable for Common Stock, (2) enter into any swap or other derivatives transaction that transfers to another, in whole or in part, any of the economic benefits or risks of ownership of shares of capital stock of the Company, whether any such transaction described in clause (1) or (2) above is to be settled by delivery of capital stock of the Company or other securities, in cash or otherwise, (3) except as provided for below, make any demand for or exercise any right or cause to be filed a registration statement, including any amendments thereto, with respect to the registration of any shares of Common Stock or securities convertible into or exercisable or exchangeable for Common Stock or any other securities of the Company, or (4) publicly disclose the intention to do any of the foregoing for a period commencing on the date hereof and ending on the 90th day after the date of the Prospectus relating to the Offering (such 90-day period, the "**Lock-Up Period**").

The foregoing paragraph shall not apply to (a) transactions relating to shares of Common Stock or other securities acquired in the open market after the completion of the Offering, *provided* that no filing under Section 16(a) of the Securities Exchange Act of 1934, as amended (the “*Exchange Act*”), shall be required or shall be voluntarily made in connection with such transfers; (b) bona fide gifts of shares of any class of the Company’s capital stock or any security convertible into Common Stock, in each case that are made exclusively between and among the undersigned or members of the undersigned’s family, or affiliates of the undersigned, including its partners (if a partnership) or members (if a limited liability company); (c) any transfer of shares of Common Stock or any security convertible into Common Stock by will or intestate succession upon the death of the undersigned; (d) transfer of shares of Common Stock or any security convertible into Common Stock to an immediate family member (for purposes of this Lock-Up Letter Agreement, “immediate family” shall mean any relationship by blood, marriage or adoption, not more remote than first cousin) or any trust, limited partnership, limited liability company or other entity for the direct or indirect benefit of the undersigned or any immediate family member of the undersigned; *provided* that, in the case of clauses (b)- (d) above, it shall be a condition to any such transfer that (i) the transferee/donee agrees to be bound by the terms of this Lock-Up Letter Agreement (including, without limitation, the restrictions set forth in the preceding sentence) to the same extent as if the transferee/donee were a party hereto, (ii) each party (donor, donee, transferor or transferee) shall not be required by law (including without limitation the disclosure requirements of the Securities Act of 1933, as amended, (the “*Securities Act*”) and the Exchange Act) to make, and shall agree to not voluntarily make, any filing or public announcement of the transfer or disposition prior to the expiration of the 90-day period referred to above, and (iii) the undersigned notifies the Placement Agent at least two business days prior to the proposed transfer or disposition; (e) the transfer of shares to the Company to satisfy withholding obligations for any equity award granted pursuant to the terms of the Company’s stock option/incentive plans, such as upon exercise, vesting, lapse of substantial risk of forfeiture, or other similar taxable event, in each case on a “cashless” or “net exercise” basis (which, for the avoidance of doubt shall not include “cashless” exercise programs involving a broker or other third party), *provided* that as a condition of any transfer pursuant to this clause (e), that if the undersigned is required to file a report under Section 16(a) of the Exchange Act, reporting a reduction in beneficial ownership of shares of Common Stock or any securities convertible into or exercisable or exchangeable for Common Stock during the Lock-Up Period, the undersigned shall include a statement in such report, and if applicable an appropriate disposition transaction code, to the effect that such transfer is being made as a share delivery or forfeiture in connection with a net value exercise, or as a forfeiture or sale of shares solely to cover required tax withholding, as the case may be; (f) transfers of shares of Common Stock or any security convertible into or exercisable or exchangeable for Common Stock pursuant to a bona fide third party tender offer made to all holders of the Common Stock, merger, consolidation or other similar transaction involving a change of control (as defined below) of the Company, including voting in favor of any such transaction or taking any other action in connection with such transaction, *provided* that in the event that such merger, tender offer or other transaction is not completed, the Common Stock and any security convertible into or exercisable or exchangeable for Common Stock shall remain subject to the restrictions set forth herein; (g) the exercise of warrants or the exercise of stock options granted pursuant to the Company’s stock option/incentive plans or otherwise outstanding on the date hereof; *provided*, that the restrictions shall apply to shares of Common Stock issued upon such exercise or conversion; (h) the establishment of any contract, instruction or plan that satisfies all of the requirements of Rule 10b5-1 (a “*Rule 10b5-1 Plan*”) under the Exchange Act; *provided, however*, that no sales of Common Stock or securities convertible into, or exchangeable or exercisable for, Common Stock, shall be made pursuant to a Rule 10b5-1 Plan prior to the expiration of the Lock-Up Period; *provided further*, that the Company is not required to report the establishment of such Rule 10b5-1 Plan in any public report or filing with the Commission under the Exchange Act during the lock-up period and does not otherwise voluntarily effect any such public filing or report regarding such Rule 10b5-1 Plan; and (i) any demands or requests for, exercise any right with respect to, or take any action in preparation of, the registration by the Company under the Act of the undersigned’s shares of Common Stock, *provided* that no transfer of the undersigned’s shares of Common Stock registered pursuant to the exercise of any such right and no registration statement shall be filed under the Act with respect to any of the undersigned’s shares of Common Stock during the Lock-Up Period. For purposes of clause (f) above, “change of control” shall mean the consummation of any bona fide third party tender offer, merger, purchase, consolidation or other similar transaction the result of which is that any “person” (as defined in Section 13(d)(3) of the Exchange Act), or group of persons, becomes the beneficial owner (as defined in Rules 13d-3 and 13d-5 of the Exchange Act) of a majority of total voting power of the voting stock of the Company.

The undersigned also agrees and consents to the entry of stop transfer instructions with the Company's transfer agent and registrar against the transfer of the undersigned's securities subject to this Lock-Up Letter Agreement except in compliance with this Lock-Up Letter Agreement.

It is understood that, if the Company notifies the Placement Agent that it does not intend to proceed with the Offering, if the Agreement does not become effective, or if the Agreement (other than the provisions thereof which survive termination) shall terminate or be terminated prior to the Offering, the undersigned will be released from its obligations under this Lock-Up Letter Agreement.

The undersigned understands that the Company and the Placement Agent will proceed with the Offering in reliance on this Lock-Up Letter Agreement.

Whether or not the Offering actually occurs depends on a number of factors, including market conditions. Any Offering will only be made pursuant to a Placement Agency Agreement, the terms of which are subject to negotiation between the Company and the Placement Agent.

This Lock-Up Letter Agreement shall automatically terminate upon the earliest to occur, if any, of (1) the termination of the Agreement before the Offering or (2) [DATE], in the event that the Agreement has not been executed by that date.

*[Signature page follows]*

The undersigned hereby represents and warrants that the undersigned has full power and authority to enter into this Lock-Up Letter Agreement and that, upon request, the undersigned will execute any additional documents necessary in connection with the enforcement hereof. Any obligations of the undersigned shall be binding upon the heirs, personal representative, successors and assigns of the undersigned.

Very truly yours,

By: \_\_\_\_\_

Name:

Title:

Dated: \_\_\_\_\_

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## Computation of Ratio of Earnings to Combined Fixed Charges

	Three Months Ended March 31,	Year Ended December 31,				
	2018	2017	2016	2015	2014	2013
(In Thousands)						
<b>Earnings:</b>						
Loss from Operations before income taxes	\$ (4,121.0)	\$ (16,502.0)	\$ (8,257.0)	\$ (9,911.0)	\$ (10,465.0)	\$ (3,717.0)
<b>Add:</b>						
Interest portion of rental expense (1)	\$ 16.7	\$ 45.4	\$ 22.0	\$ 20.2	\$ 10.9	\$ 0.2
Interest expensed and capitalized	4.0	10.0	3.0	2.0	2.6	-
Amortized premiums related to indebtedness	-	-	-	-	-	-
Amortization of capitalized interest	-	-	-	-	-	-
<b>Less:</b>						
Interest Capitalized	-	-	-	-	-	-
Total Earnings	\$ (4,141.7)	\$ (16,557.4)	\$ (8,282.0)	\$ (9,933.2)	\$ (10,478.5)	\$ (3,717.2)
<b>Fixed Charges and Preference Dividends:</b>						
Interest portion of rental expense (1)	\$ 16.7	\$ 45.4	\$ 22.0	\$ 20.2	\$ 10.9	\$ 0.2
Interest expensed and capitalized	4.0	10.0	3.0	2.0	2.6	-
Amortized premiums related to indebtedness	-	-	-	-	-	-
Total Fixed Charges	\$ 20.7	\$ 55.4	\$ 25.0	\$ 22.2	\$ 13.5	\$ 0.2
Accumulated dividends to preferred shareholders	147.3	608.3	-	-	-	-
Ratio of earnings to fixed charges and preference dividends	(2)	(2)	(2)	(2)	(2)	(2)
Coverage deficiency (3)	\$ (4,121.0)	\$ (16,502.0)	\$ (8,257.0)	\$ (9,911.0)	\$ (10,465.0)	\$ (3,717.0)

(1) Computation of interest factor of rent expense

Operating rental expense	\$ 186.0	\$ 504.0	\$ 244.0	224.0	\$ 121.0	\$ 2.0
Interest factor (*)	9.0%	9.0%	9.0%	9.0%	9.0%	9.0%
Total	\$ 16.7	\$ 45.4	\$ 22.0	\$ 20.2	\$ 10.9	\$ 0.2

\* Calculated as 9.0% of rent expense, which management believes is a reasonable approximation of the interest factor.

(2) Due to our losses from continuing operations for the three months ended March 31, 2018 and for the years ended December 31, 2017, 2016, 2015, 2014 and 2013 earnings were insufficient to cover fixed charges by \$4.1 million, \$16.6 million, \$8.3 million, \$9.9 million, \$10.5 million, and \$3.7 million, respectively. For this reason, no ratios are provided.

(3) In each of the years presented, we incurred losses from operations and as a result our earnings were insufficient to cover over fixed charges.

The amount shown represents the amount of the coverage deficiency in each such period.







### **Matinas BioPharma Announces Pricing of \$8.0 Million Public Offering**

**Bedminster, NJ (June 19, 2018)** – Matinas BioPharma Holdings, Inc. (NYSE AMER: MTNB), a clinical-stage biopharmaceutical company focused on enabling the delivery of life-changing medicines using its proprietary lipid nano-crystal (LNC) platform technology, today announced the pricing of a public offering of up to 8,000 shares of its newly designated Series B Convertible Preferred Stock, or the Series B Preferred, with a stated value of \$1,000 per share and convertible into an aggregate of 16,000,000 shares of its common stock at a conversion price of \$0.50 per share. Holders of the Series B Preferred will be entitled to receive dividends payable in shares of common stock equal to (i) 10% of the shares of common stock underlying the Series B Preferred then held by such holder on the 12-month anniversary of the offering, (ii) 15% of the shares of common stock underlying the Series B Preferred then held by such holder on the 24-month anniversary of the offering and (iii) 20% of the shares of common stock underlying the Series B Preferred then held by such holder on the 36-month anniversary of the offering.

The offering is expected to close on or about June 21, 2018, subject to satisfaction of customary closing conditions.

The net proceeds to Matinas BioPharma is expected to be \$7.1 million after deducting placement agent fees and expenses and other estimated offering expenses. Matinas intends to use the net proceeds from this offering primarily for the ongoing development activities for its product candidates and LNC platform delivery technology, and for working capital and other general corporate purposes.

ThinkEquity, a division of Fordham Financial Management, Inc., is acting as the placement agent for the offering.

The shares of Series B Preferred, the underlying shares of common stock and the dividend shares are being offered pursuant to an effective shelf registration statement on Form S-3 (File No. 333-217106), that was previously filed with the Securities and Exchange Commission (the "SEC") and declared effective on April 12, 2017. A preliminary prospectus supplement was filed with the SEC and a final prospectus supplement and related prospectus relating to and describing the terms of the offering will be filed with the SEC and will be available on the SEC's website at [www.sec.gov](http://www.sec.gov). The offering is being made by means of a prospectus and related prospectus supplement, copies of which may be obtained, when available, by contacting ThinkEquity, 17 State Street, 22nd Floor, New York, NY 10004, telephone (646) 968-9355, email: [prospectus@think-equity.com](mailto:prospectus@think-equity.com).

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

#### **About Matinas BioPharma**

Matinas BioPharma is a clinical-stage biopharmaceutical company focused on enabling the delivery of life-changing medicines using its LNC platform technology. The Company's proprietary, disruptive technology utilizes lipid nano-crystals which can encapsulate small molecule drugs, oligonucleotides, vaccines, peptides, proteins and other medicines potentially making them safer, more tolerable, less toxic and orally bioavailable.

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The Company's lead anti-fungal product candidate, MAT2203, utilizes its proprietary lipid nano-crystal formulation technology for the safe and effective delivery of the broad-spectrum fungicidal agent, amphotericin B. Based on the positive patient clinical data reported in 2017, Matinas is preparing for a potential Phase 2 pivotal trial of MAT2203 for prevention of invasive fungal infections in patients with acute lymphoblastic leukemia.

**Forward Looking Statements:** *This release contains "forward-looking statements" within the meaning of the Private Securities Litigation Reform Act of 1995, including those relating to the offering and the Company's anticipated capital and liquidity needs, strategic focus and the future development of its product candidates, including MAT2203, the anticipated timing of regulatory submissions, the anticipated timing of clinical studies, the anticipated timing of regulatory interactions, the Company's ability to identify and pursue development and partnership opportunities for its products or platform delivery technology on favorable terms, if at all, and the ability to obtain required regulatory approval and other statements that are predictive in nature, that depend upon or refer to future events or conditions. All statements other than statements of historical fact are statements that could be forward-looking statements. Forward-looking statements include words such as "expects," "anticipates," "intends," "plans," "could," "believes," "estimates" and similar expressions. These statements involve known and unknown risks, uncertainties and other factors which may cause actual results to be materially different from any future results expressed or implied by the forward-looking statements. Forward-looking statements are subject to a number of risks and uncertainties, including, but not limited to, our ability to obtain additional capital to meet our liquidity needs on acceptable terms, or at all, including the additional capital which will be necessary to complete the clinical trials of our product candidates; our ability to successfully complete research and further development and commercialization of our product candidates; the uncertainties inherent in clinical testing; the timing, cost and uncertainty of obtaining regulatory approvals; our ability to maintain and derive benefit from the Qualified Infectious Disease Product (QIDP), Orphan and/or Fast Track designations for MAT2203, which does not change the standards for regulatory approval or guarantee regulatory approval on an expedited basis, or at all; our ability to protect the Company's intellectual property; the loss of any executive officers or key personnel or consultants; competition; changes in the regulatory landscape or the imposition of regulations that affect the Company's products; and the other factors listed under "Risk Factors" in our filings with the SEC, including Forms 10-K, 10-Q and 8-K. Investors are cautioned not to place undue reliance on such forward-looking statements, which speak only as of the date of this release. Except as may be required by law, the Company does not undertake any obligation to release publicly any revisions to such forward-looking statements to reflect events or circumstances after the date hereof or to reflect the occurrence of unanticipated events. Matinas BioPharma's product candidates are all in a development stage and are not available for sale or use.*

**Investor Contact**

Jenene Thomas  
Jenene Thomas Communications, LLC  
Phone: +1 (833) 475-8247  
Email: [mtnb@jtcr.com](mailto:mtnb@jtcr.com)

**Media Contact**

Eliza Schleifstein  
Scient Public Relations  
Phone: + 1 (917) 763-8106  
Email: [eliza@scientpr.com](mailto:eliza@scientpr.com)

Source: Matinas BioPharma Holdings, Inc.

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