

SECURITIES & EXCHANGE COMMISSION EDGAR FILING

ENDRA Life Sciences Inc.

Form: S-1/A

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Corporate Issuer CIK: 1681682

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

AMENDMENT NO. 6
TO
FORM S-1
REGISTRATION STATEMENT UNDER THE SECURITIES ACT OF 1933

ENDRA LIFE SCIENCES INC.

(Exact name of registrant as specified in its charter)

Delaware
(State or other jurisdiction of
incorporation or organization)

3845
(Primary Standard Industrial
Classification Code Number)

26-0579295
(I.R.S. Employer
Identification No.)

ENDRA Life Sciences Inc.
3600 Green Court, Suite 350
Ann Arbor, MI 48105
(734) 335-0468

(Address, including zip code, and telephone number, including area code, of registrant's principal executive offices)

Francois Michelin
Chief Executive Officer
ENDRA Life Sciences Inc.
3600 Green Court, Suite 350
Ann Arbor, MI 48105
(734) 335-0468

(Name, address, including zip code, and telephone number, including area code, of agent for service)

Copies to:

Mark R. Busch
K&L Gates LLP
214 North Tryon St., 47th Floor
Charlotte, North Carolina 28202
Telephone: (704) 331-7440

Jonathan R. Zimmerman
Ben A. Stacke
Faegre Baker Daniels LLP
2200 Wells Fargo Center
90 South Seventh Street
Minneapolis, MN 55402-3901
Telephone: (612) 766-7000

As soon as practicable after the effective date of this Registration Statement.

(Approximate date of commencement of proposed sale to the public)

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

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

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

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

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

Large accelerated filer

Non-accelerated filer

(Do not check if a smaller reporting company)

Accelerated filer

Smaller reporting company

CALCULATION OF REGISTRATION FEE

	Amount to be Registered	Proposed Maximum Aggregate Offering Price Per Share	Proposed Maximum Aggregate Offering Price ⁽¹⁾	Amount of Registration Fee
Units, each consisting of one share of common stock, par value \$0.0001 per share, and a warrant to purchase one share of common stock ⁽²⁾	2,300,000	\$ 5.50	\$ 12,650,000	\$ 1,466.14
Common Stock included in the units ⁽³⁾	--	--	\$ --	\$ --
Warrants to purchase Common Stock included in the units ⁽³⁾	--	--	\$ --	\$ --
Common Stock underlying Warrants included in the units ⁽²⁾	2,300,000	\$ 6.60	\$ 15,180,000	\$ 1,759.36
Underwriters' warrants ⁽³⁾⁽⁴⁾	--	--	\$ --	\$ --
Shares of Common Stock underlying Underwriters' Warrants ⁽⁴⁾	184,000	\$ 6.60	\$ 1,214,000	\$ 140.75
Total Registration Fee⁽⁵⁾			\$ 29,044,000	\$ 3,366.25

- (1) Estimated solely for the purpose of calculating the amount of the registration fee pursuant to Rule 457(o) under the Securities Act of 1933, as amended. Includes the offering price of the shares and warrants that the underwriters have the option to purchase to cover over-allotments, if any.
- (2) Pursuant to Rule 416 under the Securities Act of 1933, as amended, there is also being registered hereby such indeterminate number of additional shares of common stock of the registrant as may be issued or issuable because of stock splits, stock dividends, stock distributions, and similar transactions.
- (3) No separate registration fee required pursuant to Rule 457(g) under the Securities Act of 1933, as amended.
- (4) Represents warrants granted to the underwriters to purchase shares of common stock in an amount up to 8% of the number of shares sold to the public in this offering. See "Underwriting" contained within this Registration Statement for information on underwriting arrangements relating to this offering.
- (5) Previously paid.

The registrant hereby amends this Registration Statement on such date or dates as may be necessary to delay its effective date until the registrant shall file a further amendment, which specifically states that this Registration Statement shall thereafter become effective in accordance with Section 8(a) of the Securities Act of 1933, as amended, or until this Registration Statement shall become effective on such date as the Commission, acting pursuant to said Section 8(a), may determine.

EXPLANATORY NOTE

ENDRA Life Sciences Inc. is filing this pre-effective amendment No. 6 (this "Amendment") to the Registration Statement on Form S-1 (Registration No. 333-214724) (the "Registration Statement") to file Exhibits 1.1, 4.2, 4.10, 5.1 and 23.2 to the Registration Statement. Accordingly, this Amendment consists only of the facing page, this explanatory note, Part II of the Registration Statement, and the signature page to the Registration Statement. The prospectus is unchanged and has been omitted.

PART II

INFORMATION NOT REQUIRED IN PROSPECTUS

ITEM 13. OTHER EXPENSES OF ISSUANCE AND DISTRIBUTION

The following table sets forth the costs and expenses, other than the underwriting discount, payable by us in connection with the sale and distribution of the securities being registered. All amounts are estimated except the SEC registration fee, the FINRA filing fee and the initial listing fee for The Nasdaq Capital Market.

SEC Filing Fee	\$	3,366
FINRA Fee	\$	4,857
Underwriters' Legal Fees and Expenses	\$	150,000
Nasdaq Fee	\$	50,000
Printing Expenses	\$	35,000
Accounting Fees and Expenses	\$	50,000
Legal Fees and Expenses	\$	250,000
Transfer Agent and Registrar Expenses	\$	10,000
Miscellaneous	\$	46,777
Total	\$	600,000

ITEM 14. INDEMNIFICATION OF DIRECTORS AND OFFICERS

The following summary is qualified in its entirety by reference to the complete text of any statutes referred to below and the Fourth Amended and Restated Certificate of Incorporation of ENDRA Life Sciences Inc., a Delaware corporation.

Section 145 of the General Corporation Law of the State of Delaware (the "DGCL") permits a Delaware corporation to indemnify any person who was or is a party or is threatened to be made a party to any threatened, pending or completed action, suit or proceeding, whether civil, criminal, administrative or investigative (other than an action by or in the right of the corporation) by reason of the fact that the person is or was a director, officer, employee or agent of the corporation, or is or was serving at the request of the corporation as a director, officer, employee or agent of another corporation, partnership, joint venture, trust or other enterprise, against expenses (including attorneys' fees), judgments, fines and amounts paid in settlement actually and reasonably incurred by the person in connection with such action, suit or proceeding if the person acted in good faith and in a manner the person reasonably believed to be in or not opposed to the best interests of the corporation, and, with respect to any criminal action or proceeding, had no reasonable cause to believe the person's conduct was unlawful.

In the case of an action by or in the right of the corporation, Section 145 of the DGCL permits a Delaware corporation to indemnify any person who was or is a party or is threatened to be made a party to any threatened, pending or completed action or suit by reason of the fact that the person is or was a director, officer, employee or agent of the corporation, or is or was serving at the request of the corporation as a director, officer, employee or agent of another corporation, partnership, joint venture, trust or other enterprise, against expenses (including attorneys' fees) actually and reasonably incurred by the person in connection with such action, suit or proceeding if the person acted in good faith and in a manner the person reasonably believed to be in or not opposed to the best interests of the corporation and except that no indemnification shall be made in respect of any claim, issue or matter as to which such person shall have been adjudged to be liable to the corporation unless and only to the extent that the Court of Chancery or the court in which such action or suit was brought shall determine upon application that, despite the adjudication of liability but in view of all the circumstances of the case, such person is fairly and reasonably entitled to indemnity for such expenses that the Court of Chancery or such other court shall deem proper.

Section 145 of the DGCL also permits a Delaware corporation to purchase and maintain insurance on behalf of any person who is or was a director, officer, employee or agent of the corporation, or is or was serving at the request of the corporation as a director, officer, employee or agent of another corporation, partnership, joint venture, trust or other enterprise against any liability asserted against such person and incurred by such person in any such capacity, or arising out of such person's status as such, whether or not the corporation would have the power to indemnify such person against such liability under Section 145 of the DGCL.

Article NINTH of our Fourth Amended and Restated Certificate of Incorporation states that our directors shall not be personally liable to us or to our stockholders for monetary damages for any breach of fiduciary duty as a director, notwithstanding any provision of law imposing such liability. Under Section 102(b)(7) of the DGCL, the personal liability of a director to the corporation or its stockholders for monetary damages for breach of fiduciary duty can be limited or eliminated except (i) for any breach of the director's duty of loyalty to the corporation or its stockholders; (ii) for acts or omissions not in good faith or which involve intentional misconduct or a knowing violation of law; (iii) under Section 174 of the DGCL (relating to unlawful payment of dividend or unlawful stock purchase or redemption); or (iv) for any transaction from which the director derived an improper personal benefit.

Article EIGHTH of our Fourth Amended and Restated Certificate of Incorporation provides that we shall indemnify (and advance expenses to) our officers and directors to the full extent permitted by the DGCL.

Effective upon the closing of this offering, we will have directors' and officers' liability insurance insuring our directors and officers against liability for acts or omissions in their capacities as directors or officers, subject to certain exclusions. Such insurance also insures us against losses which we may incur in indemnifying our officers and directors.

As permitted by the DGCL, prior to the closing of the offering we plan to enter into indemnification agreements with each of our directors and executive officers that require us to indemnify such persons against various actions including, but not limited to, third-party actions where such director or executive officer, by reason of his or her corporate status, is a party or is threatened to be made a party to an action, or by reason of anything done or not done by such director in any such capacity. We intend to indemnify directors and executive officers against all costs, judgments, penalties, fines, liabilities, amounts paid in settlement by or on behalf of such directors or executive officers and for any expenses actually and reasonably incurred by such directors or executive officers in connection with such action, if such directors or executive officers acted in good faith and in a manner they reasonably believed to be in or not opposed to our best interests, and with respect to any criminal proceeding, had no reasonable cause to believe their conduct was unlawful. We also intend to advance to our directors and executive officers expenses (including attorney's fees) incurred by or on behalf of such directors and executive officers in advance of the final disposition of any action after our receipt of a statement or statements from directors or executive officers requesting such payment or payments from time to time, provided that such statement or statements are preceded or accompanied by a written undertaking, by or on behalf of such directors or executive officers, to repay such amount if it shall ultimately be determined that they are not entitled to be indemnified against such expenses by us.

The indemnification agreements will also set forth certain procedures that will apply in the event of a claim for indemnification or advancement of expenses, including, among others, provisions about submitting a written request to us that includes such documentation and information as is reasonably available to the director or executive officer and is reasonably necessary to determine entitlement to indemnification and provisions. Prior to the closing of this offering we plan to enter into an underwriting agreement, which will provide that the underwriters are obligated, under some circumstances, to indemnify our directors, officers and controlling persons against specified liabilities.

ITEM 15. RECENT SALES OF UNREGISTERED SECURITIES

During the past three years, we issued the following securities without registration under the Securities Act of 1933, as amended (the "Securities Act").

Stock, Warrants and Convertible Notes

From July 2013 through April 2014, we issued 384,625 shares of our common stock at a price of \$7.15 per share, for gross proceeds of \$2,750,015. The shares were sold to 64 investors.

From July 2013 through April 2014, we issued warrants to purchase 34,968 shares of common stock at an exercise price of \$14.30 and warrants to purchase 305,951 shares of common stock at an exercise price of \$3.58 per share.

In September 2014, we issued to certain accredited investors an aggregate of 108,714 shares of our common stock at a price of \$7.15 per share in exchange for the cancellation of outstanding principal and accrued interest on senior promissory notes issued in July 2013 and for the cancellation of certain ten-year warrants issued to these same investors. In addition, as consideration for its consulting services, we issued to DALA LLC (i) 27,273 shares of our common stock and (ii) a warrant to purchase 27,273 shares of common stock at an exercise price of \$7.15 per share, exercisable upon consummation of a change-in-control transaction or an initial public offering of our common stock.

In January 2015, we issued 34,966 shares of our common stock at a price of \$7.15 per share, for gross proceeds of \$250,000, to 3 accredited investors. Additionally, we issued warrants to purchase 8,742 shares of common stock at an exercise price of \$7.15 per share.

From May 2015 through January 2016, pursuant to a warrant exercise program, we issued 166,217 shares of our common stock at a price of \$3.58 per share, for aggregate gross proceeds of \$594,224 in connection with the exercise of outstanding warrants held by 41 accredited investors. As an inducement to exercise their warrants, we issued to the investors exercising their warrants new warrants to purchase 166,217 shares of common stock at an exercise price of \$14.30 per share in connection with a warrant exercise program.

On June 23, 2015, we issued an aggregate of 10,606 shares of common stock to two Company employees to satisfy accrued, but unpaid salary obligations to the two employees.

In January 2016, we issued promissory notes in the aggregate principal amount of \$50,000 to three accredited investors.

In April and May 2016, we issued convertible promissory notes in the aggregate principal amount of \$1,199,448 to 62 accredited investors.

In July 2016 we issued convertible promissory notes in the aggregate principal amount of \$186,389 to three accredited investors.

The offers, sales and issuances of the securities described above were deemed to be exempt from registration under the Securities Act in reliance on the exemption provided by Section 4(a)(2) of the Securities Act. Each of the recipients of securities in these transactions was an accredited investor and there was no form of general solicitation or general advertising relating to the offer.

Stock Options

In November 2013, we granted options to purchase an aggregate of 92,808 shares of our common stock under our Amended and Restated 2013 Stock Incentive Plan at an exercise price of \$7.15 per share, to our executive officers, employees, certain advisors and members of our Board of Directors. 78,932 options have a term of five years and vests immediately or over 3 years in 3 equal installments, remaining options were fully vested on the date of issuance.

In May 2014, we granted to each member of our Board of Directors, as consideration for their agreement to serve on the Board of Directors, stock options to purchase an aggregate of 27,658 shares of our common stock at an exercise price of \$7.15 per share. The options have a term of five years and were fully vested on the date of issuance.

In May 2015, we granted stock options to purchase an aggregate of 1,364 shares of our common stock under our Second Amended and Restated 2013 Stock Incentive Plan at an exercise price of \$7.15 per share, to two employees. Each option has a term of five years and vests over three years in three equal installments.

In July 2015, we granted stock options to purchase 49,699 shares of our common stock under our Second Amended and Restated 2013 Stock Incentive Plan at an exercise price of \$7.15 per share, to a Company employee. The options have a term of five years and vest over three years in three equal installments. We also granted stock options to purchase 5,000 shares of our common stock under our Second Amended and Restated 2013 Stock Incentive Plan, which options have an exercise price of \$7.15 per share to a new member of our Board of Directors.

In July 2015, we granted stock options to purchase 23,076 shares of common stock under our Second Amended and Restated 2013 Stock Incentive Plan at an exercise price of \$7.15 per share, to each existing independent member of our Board of Directors. Each option has a term of five years and was fully vested on the date of issuance.

In January 2016, we granted stock options to purchase 13,847 shares of common stock under our Second Amended and Restated 2013 Stock Incentive Plan at an exercise price of \$7.15 per share, to each existing independent member of our Board of Directors and to each member of our Scientific Advisory Board. Each option has a term of five years and was fully vested on the date of issuance.

All of the stock options described above were granted in reliance upon an available exemption from the registration requirements of the Securities Act, including those contained in Rule 701 promulgated under Section 3(b) of the Securities Act. Among other things, we relied on the fact that, under Rule 701, companies that are not subject to the reporting requirements of Section 13 or Section 15(d) of the Exchange Act are exempt from registration under the Securities Act with respect to certain offers and sales of securities pursuant to "compensatory benefit plans" as defined under that rule. We believe that all of the options described above were issued pursuant qualifying "compensatory benefit plans".

Exhibit No.	Description of Document
1.1	Form of Underwriting Agreement
3.1	Third Amended and Restated Certificate of Incorporation of the Registrant, as currently in effect*
3.2	Bylaws of the Registrant, as currently in effect*
3.3	Form of Fourth Amended and Restated Certificate of Incorporation of the Registrant, to be in effect upon completion of this offering*
3.4	Form of Amended and Restated Bylaws of the Registrant, to be in effect upon completion of this offering*
3.5	Certificate of Amendment to Certificate of Incorporation of the Registrant, as currently in effect*
3.6	Form of Certificate of Amendment to Certificate of Incorporation of the Registrant, to be in effect upon completion of this offering*
4.1	Specimen Certificate representing shares of common stock of the Registrant*
4.2	Form of Warrant Agreement and Warrant
4.3	Form of Underwriters' Warrants*
4.4	Form of Warrant to Purchase Common Stock issued to the placement agent in the Registrant's 2014 private placement offering*
4.5	Form of Warrant to Purchase Common Stock issued pursuant to 2013-2014 Bridge Financing*
4.6	Form of Warrant to Purchase Common Stock issued pursuant to 2015 Warrant Exercise Program*
4.7	Form of Senior Promissory Note issued pursuant to Securities Purchase Agreement dated July 10, 2013*
4.8	Form of Convertible Promissory Note*
4.9	Form of Promissory Note issued by the Registrant to certain members of the Board of Directors*
4.10	Form of Unit Certificate
5.1	Form of Opinion of K&L Gates LLP
10.1	ENDRA Life Sciences Inc. Second Amended and Restated 2013 Stock Incentive Plan*†
10.2	Form of Non-Qualified Stock Option Award under Second Amended and Restated 2013 Stock Incentive Plan*†
10.3	Form of Incentive Stock Option Agreement under Second Amended and Restated 2013 Stock Incentive Plan*†
10.4	Form of ENDRA Life Sciences Inc. 2016 Omnibus Incentive Plan, to be in effect upon completion of this offering*†
10.5	Form of Stock Option Award under 2016 Omnibus Incentive Plan*†
10.6	Form of Restricted Stock Unit Award under 2016 Omnibus Incentive Plan*†
10.7	Non-Employee Director Compensation Policy, to be in effect upon completion of this offering*†
10.8	Form of Indemnification Agreement by and between the Registrant and each of its directors and executive officers*
10.9	Form of Amended and Restated Employment Agreement, by and between the Registrant and Francois Michelin, to be in effect upon completion of this offering*†
10.10	Form of Amended and Restated Employment Agreement, by and between the Registrant and Michael Thornton, to be in effect upon completion of this offering*†
10.11	Consulting Agreement, dated July 23, 2014, by and between the Registrant and StoryCorp Consulting*†
10.12	Form of Securities Purchase Agreement, dated July 10, 2013, by and between the Registrant and the purchasers named therein*
10.13	Form of Securities Purchase Agreement, dated July 10, 2013, by and between the Registrant and the purchasers named therein*
10.14	Form of Exchange Agreement, dated September 26, 2014, between the Registrant and certain security holders*
10.15	Form of Subscription Agreement between the Registrant and investors in the Registrant's 2013 private placement offering*
10.16	Form of Subscription Agreement between the Registrant and investors in the Registrant's 2014 private placement offering*
10.17	Collaborative Research Agreement, dated April 22, 2016, by and between the Registrant and General Electric Company*
10.18	Gross Lease, dated January 1, 2015, between the Registrant and Green Court LLC*
10.19	Sublicense Agreement, dated August 2, 2007, by and between the Registrant and Optosonics, Inc.*
10.20	Amendment to Sublicense Agreement, dated January 18, 2011, by and between the Registrant and Optosonics, Inc.*
14.1	Code of Ethics, to be in effect upon completion of this offering*
23.1	Consent of RBSM LLP, Independent Registered Public Accounting Firm*
23.2	Consent of K&L Gates LLP (included in Exhibit 5.1)
24.1	Power of Attorney*

*Previously filed.

†Indicates management compensatory plan, contract or arrangement.

ITEM 17. UNDERTAKINGS

The undersigned registrant hereby undertakes:

(1) To file, during any period in which offers or sales are being made, a post-effective amendment to this registration statement:

(i) o include any prospectus required by section 10(a)(3) of the Securities Act of 1933;

(ii) To reflect in the prospectus any facts or events arising after the effective date of the registration statement (or the most recent post-effective amendment thereof) which, individually or in the aggregate, represent a fundamental change in the information set forth in the registration statement. Notwithstanding the foregoing, any increase or decrease in volume of securities offered (if the total dollar value of securities offered would not exceed that which was registered) and any deviation from the low or high end of the estimated maximum offering range may be reflected in the form of prospectus filed with the Commission pursuant to Rule 424(b) if, in the aggregate, the changes in volume and price represent no more than a 20% change in the maximum aggregate offering price set forth in the "Calculation of Registration Fee" table in the effective registration statement;

(iii) To include any material information with respect to the plan of distribution not previously disclosed in the registration statement or any material change to such information in the registration statement.

(2) That, for the purpose of determining any liability under the Securities Act of 1933, each such post-effective amendment shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

(3) To remove from registration by means of a post-effective amendment any of the securities being registered that remain unsold at the termination of the offering.

(4) That, for the purpose of determining liability of the registrant under the Securities Act to any purchaser in the initial distribution of the securities: The undersigned registrant undertakes that in a primary offering of securities of the undersigned registrant pursuant to this registration statement, regardless of the underwriting method used to sell the securities to the purchaser, if the securities are offered or sold to such purchaser by means of any of the following communications, the undersigned registrant will be a seller to the purchaser and will be considered to offer or sell such securities to such purchaser: (i) any preliminary prospectus or prospectus of the undersigned registrant relating to the offering required to be filed pursuant to Rule 424; (ii) any free writing prospectus relating to the offering prepared by or on behalf of the undersigned registrant or used or referred to by the undersigned registrant; (iii) the portion of any other free writing prospectus relating to the offering containing material information about the undersigned registrant or its securities provided by or on behalf of the undersigned registrant; and (iv) any other communication that is an offer in the offering made by the undersigned registrant to the purchaser.

(5) To provide to the underwriter at the closing specified in the underwriting agreements certificates in such denominations and registered in such names as required by the underwriter to permit prompt delivery to each purchaser.

(6) For purposes of determining any liability under the Securities Act of 1933, the information omitted from the form of prospectus as filed as part of this registration statement in reliance upon Rule 430A and contained in a form of prospectus filed by the registrant pursuant to Rule 424(b)(1) or (4) or 497(h) under the Securities Act shall be deemed to be part of this registration statement as of the time it was declared effective.

(7) For the purpose of determining any liability under the Securities Act of 1933, each post-effective amendment that contains a form of prospectus shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

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

[●] Units¹

ENDRA LIFE SCIENCES INC.

UNDERWRITING AGREEMENT

[●], 2017

DOUGHERTY & COMPANY LLC
As Representative of the several Underwriters
Named in Schedule I hereto

c/o Dougherty & Company LLC
90 South Seventh Street, Suite 4300
Minneapolis, Minnesota 55402

Ladies and Gentlemen:

ENDRA Life Sciences Inc., a Delaware corporation (the "**Company**"), proposes to sell to the several Underwriters named in Schedule I hereto (the "**Underwriters**") an aggregate of [●] units (the "**Firm Units**"), with each Firm Unit consisting of (i) one (1) authorized but unissued share (each, a "**Firm Share**") of Common Stock, par value \$0.0001 per share (the "**Common Stock**"), of the Company and (ii) one (1) warrant of the Company, to be issued pursuant to a warrant agreement to be entered into by and between the Company and Corporate Stock Transfer, Inc., as warrant agent, in the form set forth in Exhibit A hereto (the "**Warrant Agreement**"), to purchase one (1) share of Common Stock at an exercise price of \$[●] per share (each, a "**Firm Warrant**"). The Company also has granted to the several Underwriters an option to purchase up to [●] additional units (the "**Option Units**" and, together with the Firm Units, the "**Units**"), with each Option Unit consisting of (i) one (1) authorized but unissued share of Common Stock (each, an "**Option Share**" and, together with the Firm Shares, the "**Shares**"), and (ii) one (1) warrant of the Company, to be issued pursuant to the Warrant Agreement, to purchase one (1) share of Common Stock at an exercise price of \$[●] per share (each, an "**Option Warrant**" and, together with the Firm Warrants, the "**Warrants**"), in each case on the terms and for the purposes set forth in Section 3 hereof. The Units, the Shares, the Warrants and the shares of Common Stock issuable upon exercise of the Warrants purchased pursuant to this Underwriting Agreement (the "**Agreement**") are herein collectively called the "**Securities**." The Securities numbers set forth in this Agreement reflect a one for 2.50 reverse stock split (the "**Reverse Stock Split**") to be effected by the Company following the effectiveness of the Registration Statement (as defined below) and prior to the First Closing Date (as defined below). Failure to complete the Reverse Stock Split will be grounds for termination of this Agreement by the Representative.

The Company hereby confirms its agreement with respect to the sale of the Securities to the several Underwriters, for whom Dougherty & Company LLC is acting as representative (the "**Representative**" or "**you**").

Plus an option to purchase additional securities to cover over-allotments, if any, as set forth herein.

1. **Registration Statement and Prospectus.** A registration statement on Form S-1 (File No. 333-214724) with respect to the Securities, including a preliminary form of prospectus, has been prepared by the Company in conformity with the requirements of the Securities Act of 1933, as amended (the “**Act**”), and the rules and regulations (“**Rules and Regulations**”) of the Securities and Exchange Commission (the “**Commission**”) thereunder and has been filed with the Commission. Such registration statement, including the amendments, exhibits and schedules thereto, as of the time it became effective, including the Rule 430A Information (as defined below), is referred to herein as the “**Registration Statement**.” The Company will prepare and file a prospectus pursuant to Rule 424(b) of the Rules and Regulations that discloses the information previously omitted from the prospectus in the Registration Statement in reliance upon Rule 430A of the Rules and Regulations, which information will be deemed retroactively to be a part of the Registration Statement in accordance with Rule 430A of the Rules and Regulations (“**Rule 430A Information**”). If the Company has elected to rely upon Rule 462(b) of the Rules and Regulations to increase the size of the offering registered under the Act, the Company will prepare and file with the Commission a registration statement with respect to such increase pursuant to Rule 462(b) of the Rules and Regulations (such registration statement, including the contents of the Registration Statement incorporated by reference therein is the “**Rule 462(b) Registration Statement**”). References herein to the “**Registration Statement**” will be deemed to include the Rule 462(b) Registration Statement at and after the time of filing of the Rule 462(b) Registration Statement. “**Preliminary Prospectus**” means any prospectus included in the Registration Statement prior to the effective time of the Registration Statement, any prospectus filed with the Commission pursuant to Rule 424(a) under the Rules and Regulations and each prospectus that omits Rule 430A Information used after the effective time of the Registration Statement. “**Prospectus**” means the prospectus that discloses the public offering price and other final terms of the Securities and the offering and otherwise satisfies Section 10(a) of the Act. All references in this Agreement to the Registration Statement, any Preliminary Prospectus, the Prospectus or any amendment or supplement to any of the foregoing, is deemed to include the copy filed with the Commission pursuant to its Electronic Data Gathering, Analysis and Retrieval System or any successor system thereto (“**EDGAR**”).

All references herein to the Registration Statement, any Preliminary Prospectus or a Prospectus shall be deemed as of any time to include the documents and information incorporated therein by reference in accordance with the Rules and Regulations.

2. **Representations and Warranties of the Company.**

(a) Representations and Warranties of the Company. The Company represents and warrants to, and agrees with, the several Underwriters as follows:

(i) Registration Statement and Prospectuses. The Registration Statement and any post-effective amendment thereto has become effective under the Act. No stop order suspending the effectiveness of the Registration Statement or any post-effective amendment thereto has been issued, and no proceeding for that purpose has been initiated or, to the Company’s knowledge, threatened by the Commission. No order preventing or suspending the use of any Preliminary Prospectus or the Prospectus (or any supplement thereto) has been issued by the Commission and no proceeding for that purpose has been initiated or, to the Company’s knowledge, threatened by the Commission. As of the time each part of the Registration Statement (or any post-effective amendment thereto) became or becomes effective, such Registration Statement (or any post-effective amendment thereto) conformed or will conform in all material respects to the requirements of the Act and the Rules and Regulations. Upon the filing or first use within the meaning of the Rules and Regulations, each Preliminary Prospectus and the Prospectus (or any supplement to either) conformed or will conform in all material respects to the requirements of the Act and the Rules and Regulations.

(ii) Accurate Disclosure. Each Preliminary Prospectus, at the time of filing thereof or the time of first use within the meaning of the Rules and Regulations, did not contain 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, in light of the circumstances under which they were made, not misleading. Neither the Registration Statement nor any amendment thereto, at the effective time of each part thereof, at the First Closing Date (as defined below) or at the Second Closing Date (as defined below), 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 Time of Sale (as defined below), neither (A) the Time of Sale Disclosure Package (as defined below) nor (B) any issuer free writing prospectus (as defined below), when considered together with the Time of Sale 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 light of the circumstances under which they were made, not misleading. Neither the Prospectus nor any supplement thereto, as of its issue date, at the time of any filing with the Commission pursuant to Rule 424(b) of the Rules and Regulations, at the First Closing Date or at the Second 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 light of the circumstances under which they were made, not misleading. The representations and warranties in this Section 2(a)(ii) shall not apply to statements in or omissions from any Preliminary Prospectus, the Registration Statement (or any amendment thereto), the Time of Sale Disclosure Package or the Prospectus (or any supplement thereto) made in reliance upon, and in conformity with, written information furnished to the Company by you, or by any Underwriter through you, specifically for use in the preparation of such document, it being understood and agreed that the only such information furnished by any Underwriter consists of the information described as such in Section 6(e).

“Time of Sale Disclosure Package” means the Preliminary Prospectus dated [●], 2017 and the information on Schedule III, all considered together.

Each reference to a **“free writing prospectus”** herein means a free writing prospectus as defined in Rule 405 of the Rules and Regulations.

“Time of Sale” means [●] [a/p]m (Eastern time) on the date of this Agreement.

(iii) No Other Offering Materials. The Company has not distributed and will not distribute any prospectus or other offering material in connection with the offering and sale of the Securities other than any Preliminary Prospectus, the Time of Sale Disclosure Package or the Prospectus or other materials permitted by the Act to be distributed by the Company ; provided, further, that the Company has not made and will not make any offer relating to the Securities that would constitute a free writing prospectus.

(iv) Financial Statements. The financial statements of the Company, together with the related notes, set forth in the Registration Statement, the Time of Sale Disclosure Package and Prospectus comply in all material respects with the requirements of the Act and the Rules and Regulations and fairly present the financial condition of the Company as of the dates indicated and the results of operations, cash flows and changes in stockholders' equity for the periods therein specified. The financial statements of the Company, together with the related notes, set forth in the Registration Statement, the Time of Sale Disclosure Package and Prospectus are in accordance with generally accepted accounting principles in the United States ("**GAAP**") consistently applied throughout the periods involved, except in the case of unaudited interim financial statements, which are subject to normal year-end adjustments and do not contain certain footnotes as permitted by the applicable rules of the Commission. The supporting schedules, if any, of the Company included in the Registration Statement present fairly the information required to be stated therein. All non-GAAP financial information included in the Registration Statement, the Time of Sale Disclosure Package and the Prospectus complies with the requirements of Regulation G and Item 10 of Regulation S-K under the Act. Except as disclosed in the Registration Statement, the Time of Sale Disclosure Package and the Prospectus, there are no material off-balance sheet arrangements (as defined in Regulation S-K under the Act, Item 303(a)(4)(ii)) or any other relationships with unconsolidated entities or other persons, that may have a material current or, to the Company's knowledge, material future effect on the Company's financial condition, results of operations, liquidity, capital expenditures, capital resources or significant components of revenue or expenses. No other financial statements or schedules, if any, are required to be included in the Registration Statement, the Time of Sale Disclosure Package or the Prospectus. RBSM LLP, which has expressed its opinion with respect to the financial statements of the Company and related schedules filed as a part of the Registration Statement and included in the Registration Statement, the Time of Sale Disclosure Package and the Prospectus, is (x) an independent registered public accounting firm within the meaning of the Act and the Rules and Regulations, (y) a registered public accounting firm (as defined in Section 2(a)(12) of the Sarbanes-Oxley Act of 2002 (the "**Sarbanes-Oxley Act**") and (z) not in violation of the auditor independence requirements of the Sarbanes-Oxley Act.

(v) Organization and Good Standing. The Company has been duly organized and is validly existing as a corporation in good standing under the laws of its jurisdiction of incorporation. The Company has full corporate power and authority to own its properties and conduct its business as currently being carried on and as described in the Registration Statement, the Time of Sale Disclosure Package and Prospectus, and is duly qualified to do business as a foreign corporation in good standing in each jurisdiction in which the ownership or lease of real property or the conduct of its business requires such qualification and in which the failure to so qualify would have a material adverse effect upon the business, prospects, management, properties, operations, condition (financial or otherwise) or results of operations of the Company, taken as a whole ("**Material Adverse Effect**").

(vi) Absence of Certain Events. Except as contemplated in the Registration Statement, the Time of Sale Disclosure Package and in the Prospectus, subsequent to the date of the most recent financial statements of the Company included in the Time of Sale Disclosure Package, the Company has not incurred any material liabilities or obligations, direct or contingent, or entered into any material transactions, or declared or paid any dividends or made any distribution of any kind with respect to its capital stock; and there has not been any change in the capital stock (other than a change in the number of outstanding shares of Common Stock due to the issuance of shares upon the exercise of outstanding options or warrants or conversion of convertible securities), or any material change in the short-term or long-term debt (other than as a result of the conversion of convertible securities), or any issuance of options, warrants, convertible securities or other rights to purchase the capital stock, of the Company, or any material adverse change in the business, prospects, management, properties, operations, condition (financial or otherwise) or results of operations of the Company, taken as a whole ("**Material Adverse Change**"), or any development which would reasonably be expected to result in any Material Adverse Change.

(vii) Absence of Proceedings. Except as set forth in the Time of Sale Disclosure Package and in the Prospectus, there is not pending or, to the knowledge of the Company, threatened or contemplated, any action, suit or proceeding (a) to which the Company is a party or (b) which has as the subject thereof any officer or director of the Company, any employee benefit plan sponsored by the Company or any property or assets owned or leased by the Company before or by any court or Governmental Authority (as defined below), or any arbitrator, which, individually or in the aggregate, would reasonably be expected to result in any Material Adverse Change, or would materially and adversely affect the ability of the Company to perform its obligations under this Agreement or the Underwriters' Warrants (as defined below) or which are otherwise material in the context of the sale of the Securities. There are no current or, to the knowledge of the Company, pending, legal, governmental or regulatory actions, suits or proceedings (x) to which the Company is subject or (y) which has as the subject thereof any officer or director of the Company, any employee plan sponsored by the Company or any property or assets owned or leased by the Company, that are required to be described in the Registration Statement, Time of Sale Disclosure Package and Prospectus by the Act or by the Rules and Regulations and that have not been so described.

(viii) Authorization; No Conflicts; Authority. This Agreement has been duly authorized, executed and delivered by the Company. The Underwriters' Warrants have been duly authorized and, at the First Closing Date and, if applicable, the Second Closing Date, will be duly executed and delivered by the Company. This Agreement constitutes, and the Underwriters' Warrants will constitute at the First Closing Date and, if applicable, the Second Closing Date, a valid, legal and binding obligation of the Company, enforceable in accordance with its terms, except as rights to indemnity hereunder may be limited by federal or state securities laws and except as such enforceability may be limited by bankruptcy, insolvency, reorganization or similar laws affecting the rights of creditors generally and subject to general principles of equity. The execution, delivery and performance of this Agreement and the Underwriters' Warrants and the consummation of the transactions herein contemplated will not (A) conflict with or result in a breach or violation of any of the terms or provisions of, or constitute a default under, or result in the creation or imposition of any lien, charge or encumbrance upon any property or assets of the Company pursuant to any indenture, mortgage, deed of trust, loan agreement or other agreement or instrument to which the Company is a party or by which the Company is bound or to which any of the property or assets of the Company is subject, (B) result in any violation of the provisions of the Company's charter or by-laws or (C) result in the violation of any law or statute or any judgment, order, rule, regulation or decree of any court or arbitrator or federal, state, local or foreign governmental agency or regulatory authority having jurisdiction over the Company or any of its properties or assets (each, a "**Governmental Authority**"), except in the case of clauses (A) and (C) as would not, individually or in the aggregate, reasonably be likely to result in a Material Adverse Effect. No consent, approval, authorization or order of, or registration or filing with any Governmental Authority is required for the execution, delivery and performance of this Agreement or the Underwriters' Warrants or for the consummation of the transactions contemplated hereby, including the issuance or sale of the Securities by the Company or the issuance of shares of Common Stock upon the exercise of the Underwriters' Warrants, except such as may be required under the Act, the rules of the Financial Industry Regulatory Authority, Inc. ("**FINRA**"), The NASDAQ Stock Market Rules or state securities or blue sky laws; and the Company has full corporate power and authority to enter into this Agreement and the Underwriters' Warrants and to consummate the transactions contemplated hereby, including the authorization, issuance and sale of the Securities as contemplated by this Agreement and the issuance of shares of Common Stock upon the exercise of the Underwriters' Warrants.

(ix) *Capitalization; the Securities; Registration Rights*. All of the issued and outstanding shares of capital stock of the Company, including the outstanding shares of Common Stock, are duly authorized and validly issued, fully paid and nonassessable, have been issued in compliance with all federal and state securities laws, and were not issued in violation of or subject to any preemptive rights or other similar rights to subscribe for or purchase securities that have not been waived in writing (a copy of which has been delivered to counsel to the Representative), and the holders thereof are not subject to personal liability by reason of being such holders. The Securities which may be sold hereunder by the Company (other than the Units, the shares of Common Stock which may be sold pursuant to the Warrants and Underwriters' Warrants) have been duly authorized and, when issued, delivered and paid for in accordance with the terms of this Agreement, will have been validly issued and will be fully paid and nonassessable, and the holders thereof will not be subject to personal liability by reason of being such holders. The Units which may be sold hereunder have been authorized and, when issued, delivered and paid for in accordance with this Agreement, will constitute valid and binding obligations of the Company, enforceable against the Company in accordance with their terms, to deliver the shares of Common Stock and Warrants underlying the Units upon the terms and conditions of this Agreement. The shares of Common Stock which may be sold pursuant to the Warrants and Underwriters' Warrants, which have been duly authorized, when issued in accordance with the terms of this Agreement, the Warrant Agreement, the Warrants and the Underwriters' Warrants (including, without limitation, payment of the exercise price therefor), will have been validly issued and will be fully paid and nonassessable, and the holders thereof will not be subject to personal liability by reason of being such holders. The capital stock of the Company, including the Common Stock, conforms to the description thereof in the Registration Statement, in the Time of Sale Disclosure Package and in the Prospectus. Except as otherwise stated in the Registration Statement, in the Time of Sale Disclosure Package and in the Prospectus, (A) there are no preemptive rights or other rights to subscribe for or to purchase, or any restriction upon the voting or transfer of, any shares of Common Stock pursuant to the Company's charter, by-laws or any agreement or other instrument to which the Company is a party or by which the Company is bound, (B) none of the filing of the Registration Statement, the offering, the sale of the Securities or the Underwriters' Warrants as contemplated by this Agreement, or the issuance of shares of Common Stock upon exercise of the Underwriters' Warrants, give rise to any rights (other than rights in favor of the holders of the Underwriters' Warrants) for or relating to the registration of any shares of Common Stock or other securities of the Company (collectively "**Registration Rights**") and (C) any person to whom the Company has granted Registration Rights has agreed not to exercise such rights until after expiration of the Lock-Up Period (as defined below). The Company has an authorized and outstanding capitalization as set forth in the Registration Statement, in the Time of Sale Disclosure Package and in the Prospectus under the caption "Description of Securities We Are Offering." The Securities (including the Units, Shares and Warrants) conform in all material respects to the descriptions thereof contained in the Time of Sale Disclosure Package and the Prospectus.

(x) *Stock Options*. Except as described in the Registration Statement, in the Time of Sale Disclosure Package and in the Prospectus, there are no options, warrants, agreements, contracts or other rights in existence to purchase or acquire from the Company any shares of the capital stock of the Company. The description of the Company's stock option, stock bonus and other stock plans or arrangements (the "**Company Stock Plans**"), and the options (the "**Options**") or other rights granted thereunder, set forth in the Time of Sale Disclosure Package and the Prospectus, accurately and fairly presents in all material respects the information required to be shown with respect to such plans, arrangements, options and rights. Each grant of an Option (A) was duly authorized 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 and (B) was made in accordance with the terms of the applicable Company Stock Plan, and all applicable laws and regulatory rules or requirements, including all applicable federal securities laws.

(xi) *Compliance with Laws*. Except as would not, individually or in the aggregate, reasonably be likely to have a Material Adverse Effect, the Company holds, and is operating in compliance with, all franchises, grants, authorizations, licenses, permits, easements, consents, certificates and orders of any Governmental Authority or self-regulatory body required for the conduct of its business and all such franchises, grants, authorizations, licenses, permits, easements, consents, certifications and orders are valid and in full force and effect; and except as would, individually or in the aggregate, reasonably be likely to have a Material Adverse Effect, the Company has not received notice of any revocation or modification of any such franchise, grant, authorization, license, permit, easement, consent, certification or order or has reason to believe that any such franchise, grant, authorization, license, permit, easement, consent, certification or order will not be renewed in the ordinary course; and except as would not, individually or in the aggregate, reasonably be likely to have a Material Adverse Effect, the Company is in compliance with all applicable federal, state, local and foreign laws, regulations, orders and decrees.

(xii) Ownership of Assets. The Company has good and marketable title to all property (whether real or personal) described in the Registration Statement, in the Time of Sale Disclosure Package and in the Prospectus as being owned by it, in each case free and clear of all liens, claims, security interests, other encumbrances or defects except such as are described in the Registration Statement, in the Time of Sale Disclosure Package and in the Prospectus. The property held under lease by the Company is held by it under valid, subsisting and enforceable leases with only such exceptions with respect to any particular lease as do not interfere in any material respect with the conduct of the business of the Company.

(xiii) Intellectual Property. The Company owns, possesses, or to the knowledge of the Company can acquire on reasonable terms, all material Intellectual Property necessary for the conduct of the Company's business as now conducted or as described in the Registration Statement, the Time of Sale Disclosure Package and the Prospectus to be conducted. Furthermore, (A) to the knowledge of the Company, there is no infringement, misappropriation or violation by third parties of any such Intellectual Property owned or licensed by the Company; (B) there is no pending or, to the knowledge of the Company, threatened, action, suit, proceeding or claim by others challenging the Company's rights in or to any such Intellectual Property owned or licensed by the Company, and to the knowledge of the Company, there are no facts that would form a reasonable basis for any such claim; (C) the Intellectual Property owned by the Company, and to the knowledge of the Company, the Intellectual Property licensed to the Company, has not been adjudged invalid or unenforceable, in whole or in part, and there is no pending or, to the knowledge of the Company, threatened action, suit, proceeding or claim by others challenging the validity or scope of any such Intellectual Property, and to the knowledge of the Company, there are no material facts that would form a reasonable basis for any such claim; (D) there is no pending or, to the knowledge of the Company, threatened action, suit, proceeding or claim by others that the Company infringes, misappropriates or otherwise violates any Intellectual Property or other proprietary rights of others, the Company has not received any written notice of such claim and to the knowledge of the Company, there are no material facts that would form a reasonable basis for any such claim; and (E) to the Company's knowledge, no employee of the Company is in or has ever been in violation of any term of any employment contract, patent disclosure agreement, invention assignment agreement, non-competition agreement, non-solicitation agreement, nondisclosure agreement or any restrictive covenant to or with a former employer where the basis of such violation relates to such employee's employment with the Company or actions undertaken by the employee while employed with the Company, except as such violation would not result in a Material Adverse Effect. "**Intellectual Property**" shall mean all patents, patent applications, trade and service marks, trade and service mark registrations, trade names, copyrights, licenses, inventions, trade secrets, domain names, technology and other intellectual property.

(xiv) No Violations or Defaults. The Company is not in violation of its charter, by-laws or other organizational documents or in breach of or otherwise in default under any bond, debt, note, indenture, loan agreement or any other contract, lease or other instrument to which it is subject or by which it may be bound, or to which any of the property or assets of the Company is subject, except for any such violation, breach or default that has been waived by the other party. No event has occurred which, with notice or lapse of time or both, would constitute such a default in the performance of any obligation, agreement or condition contained in any bond, debenture, note, indenture, loan agreement or any other contract, lease or other instrument to which it is subject or by which any of them may be bound, or to which any of the property or assets of the Company is subject, except for such breach or default as is not, individually or in the aggregate, reasonably likely to have a Material Adverse Effect.

(xv) Taxes. The Company has timely filed all federal, state, local and foreign income and franchise tax returns required to be filed (taking into account valid extensions of time to file) and is not in default in the payment of any taxes which were payable pursuant to said returns or any assessments with respect thereto, other than any which the Company is contesting in good faith. There is no pending dispute with any taxing authority relating to any of such returns, and the Company has no knowledge of any proposed liability for any tax to be imposed upon the properties or assets of the Company for which there is not an adequate reserve reflected in the Company's financial statements included in the Registration Statement, the Time of Sale Disclosure Package and the Prospectus.

(xvi) Exchange Listing and Exchange Act Registration. The Securities have been approved for listing on The NASDAQ Capital Market upon official notice of issuance and, on the date the Registration Statement became effective, the Company's Registration Statement on Form 8-A or other applicable form under the Securities Exchange Act of 1934, as amended (the "**Exchange Act**"), became effective. Except as previously disclosed to counsel for the Underwriters or as set forth in the Time of Sale Disclosure Package and the Prospectus, there are no affiliations with members of FINRA among the Company's officers or directors or, to the knowledge of the Company, any five percent or greater stockholders of the Company or any beneficial owner of the Company's unregistered equity securities that were acquired during the 180-day period immediately preceding the initial filing date of the Registration Statement. The Company's board of directors has, subject to the exceptions, cure periods and the phase-in periods specified in the applicable stock exchange rules (the "**Exchange Rules**"), validly appointed an audit committee to oversee internal accounting controls whose composition satisfies the applicable requirements of the Exchange Rules and the Company's board of directors and/or the audit committee has adopted a charter that satisfies the requirements of the Exchange Rules.

(xvii) Ownership of Other Entities. The Company, directly or indirectly, owns no capital stock or other equity or ownership or proprietary interest in any corporation, partnership, association, trust or other entity.

(xviii) Internal Controls. The Company maintains a system of internal accounting controls sufficient to provide reasonable assurances that (i) transactions are executed in accordance with management's general or specific authorization; (ii) transactions are recorded as necessary to permit preparation of financial statements in conformity with GAAP and to maintain accountability for assets; (iii) access to assets is permitted only in accordance with management's general or specific authorization; and (iv) the recorded accountability for assets is compared with existing assets at reasonable intervals and appropriate action is taken with respect to any differences. Except as disclosed in the Registration Statement, in the Time of Sale Disclosure Package and in the Prospectus, the Company's internal control over financial reporting is effective and none of the Company, its board of directors and audit committee is aware of any "significant deficiencies" or "material weaknesses" (each as defined by the Public Company Accounting Oversight Board) in its internal control over financial reporting, or any fraud, whether or not material, that involves management or other employees of the Company who have a significant role in the Company's internal controls; and since the end of the latest audited fiscal year, there has been no change in the Company's internal control over financial reporting (whether or not remediated) that has materially affected, or is reasonably likely to materially affect, the Company's internal control over financial reporting. The Company's board of directors has, subject to the exceptions, cure periods and the phase-in periods specified in the applicable stock exchange rules ("**Exchange Rules**"), validly appointed an audit committee to oversee internal accounting controls whose composition satisfies the applicable requirements of the Exchange Rules and the Company's board of directors and/or the audit committee has adopted a charter that satisfies the requirements of the Exchange Rules.

(xix) No Brokers or Finders. Other than as contemplated by this Agreement, the Company has not incurred and will not incur any liability for any finder's or broker's fee or agent's commission in connection with the execution and delivery of this Agreement or the consummation of the transactions contemplated hereby.

(xx) Insurance. The Company carries, or is covered by, insurance from reputable insurers in such amounts and covering such risks as is adequate for the conduct of its business and the value of its properties and as is customary for companies engaged in similar businesses in similar industries; all policies of insurance and any fidelity or surety bonds insuring the Company or its business, assets, employees, officers and directors are in full force and effect; the Company is in compliance with the terms of such policies and instruments in all material respects; there are no claims by the Company under any such policy or instrument as to which any insurance company is denying liability or defending under a reservation of rights clause; the Company has not been refused any insurance coverage sought or applied for; and the Company has no reason to believe that it will not be able to renew its existing insurance coverage as and when such coverage expires or to obtain similar coverage from similar insurers as may be necessary to continue its business at a cost that would not, individually or in the aggregate, have a Material Adverse Effect.

(xxi) Investment Company Act. The Company is not and, after giving effect to the offering and sale of the Securities, will not be an "investment company," as such term is defined in the Investment Company Act of 1940, as amended.

(xxii) Sarbanes-Oxley Act. The Company is in compliance with all applicable provisions of the Sarbanes-Oxley Act and the rules and regulations of the Commission thereunder.

(xxiii) Disclosure Controls. The Company has established and maintains disclosure controls and procedures (as defined in Rules 13a-14 and 15d-14 under the Exchange Act) and such controls and procedures are effective in ensuring that material information relating to the Company is made known to the principal executive officer and the principal financial officer. The Company has utilized such controls and procedures in preparing and evaluating the disclosures in the Registration Statement, in the Time of Sale Disclosure Package and in the Prospectus.

(xxiv) Anti-Bribery and Anti-Money Laundering Laws. Each of the Company, its officers, directors, supervisors, managers and employees, and to the knowledge of the Company, its affiliates or agents and any of their respective officers, directors, supervisors, managers, agents and employees, has not violated, its participation in the offering will not violate, and the Company has instituted and maintains policies and procedures designed to ensure continued compliance with, each of the following laws: (A) anti-bribery laws, including but not limited to, any applicable law, rule, or regulation of any locality, including but not limited to any law, rule, or regulation promulgated to implement the OECD Convention on Combating Bribery of Foreign Public Officials in International Business Transactions, signed December 17, 1997, including the U.S. Foreign Corrupt Practices Act of 1977, as amended, the U.K. Bribery Act 2010, or any other law, rule or regulation of similar purposes and scope or (B) anti-money laundering laws, including but not limited to, applicable federal, state, international, foreign or other laws, regulations or government guidance regarding anti-money laundering, including, without limitation, Title 18 US. Code section 1956 and 1957, the Patriot Act, the Bank Secrecy Act, and international anti-money laundering principles or procedures by an intergovernmental group or organization, such as the Financial Action Task Force on Money Laundering, of which the United States is a member and with which designation the United States representative to the group or organization continues to concur, all as amended, and any executive order, directive, or regulation pursuant to the authority of any of the foregoing, or any orders or licenses issued thereunder. The Company has instituted, maintains and enforces policies and procedures designed to ensure compliance with anti-bribery laws.

(xxv) OFAC.

(A) Neither the Company nor any of its directors or officers, nor, to the Company's knowledge, any employee, agent, affiliate or representative of the Company, is an individual or entity that is, or is owned or controlled by an individual or entity that is:

(1) the subject of any sanctions administered or enforced by the U.S. Department of Treasury's Office of Foreign Assets Control, the United Nations Security Council, the European Union, Her Majesty's Treasury, or other relevant sanctions authority (collectively, "**Sanctions**"), nor

(2) located, organized or resident in a country or territory that is the subject of Sanctions (including, without limitation, the Crimea Region of the Ukraine, Cuba, Iran, North Korea, Sudan and Syria).

(B) The Company will not, directly or indirectly, use the proceeds of the offering, or lend, contribute or otherwise make available such proceeds to any subsidiary, joint venture partner or other individual or entity:

(1) to fund or facilitate any activities or business of or with any individual or entity or in any country or territory that, at the time of such funding or facilitation, is the subject of Sanctions; or

(2) in any other manner that will result in a violation of Sanctions by any individual or entity (including any individual or entity participating in the offering, whether as underwriter, advisor, investor or otherwise).

(C) For the past five years, neither the Company nor any of its subsidiaries, whether or not currently existing, has knowingly engaged in, and is not now knowingly engaged in, any dealings or transactions with any individual or entity, or in any country or territory, that at the time of the dealing or transaction is or was the subject of Sanctions.

(xxvi) Compliance with Environmental Laws. Except as disclosed in the Registration Statement, the Time of Disclosure Package and the Prospectus, the Company is not in violation of any statute, any rule, regulation, decision or order of any Governmental Authority or any court, domestic or foreign, relating to the use, disposal or release of hazardous or toxic substances or relating to the protection or restoration of the environment or human exposure to hazardous or toxic substances (collectively, "**Environmental Laws**"), owns or operates any real property contaminated with any substance that is subject to any Environmental Laws, is liable for any off-site disposal or contamination pursuant to any Environmental Laws, or is subject to any claim relating to any Environmental Laws, which violation, contamination, liability or claim would individually or in the aggregate, have a Material Adverse Effect; and the Company is not aware of any pending investigation which would reasonably be expected to lead to such a claim. The Company does not anticipate incurring any material capital expenditures relating to compliance with Environmental Laws.

(xxvii) Compliance with Occupational Laws. The Company (A) is in compliance with any and all applicable foreign, federal, state and local laws, rules, regulations, treaties, statutes and codes promulgated by any and all Governmental Authorities (including pursuant to the Occupational Health and Safety Act) relating to the protection of human health and safety in the workplace (“**Occupational Laws**”); (B) has received all permits, licenses or other approvals required of it under applicable Occupational Laws to conduct its business as currently conducted; and (C) is in compliance with all terms and conditions of such permits, licenses or approvals, except in the case of each of clauses (A), (B) and (C) above where such noncompliance with Occupational Laws, failure to receive required permits, licenses or other approvals or failure to comply with the terms and conditions of such permits, licenses or other approvals would not have a Material Adverse Effect. No action, proceeding, revocation proceeding, writ, injunction or claim is pending or, to the Company’s knowledge, threatened against the Company relating to Occupational Laws, and the Company does not have knowledge of any facts, circumstances or developments relating to its operations or cost accounting practices that would reasonably be expected to form the basis for or give rise to such actions, suits, investigations or proceedings.

(xxviii) ERISA and Employee Benefits Matters. (A) To the knowledge of the Company, no “prohibited transaction” as defined under Section 406 of ERISA or Section 4975 of the Code and not exempt under ERISA Section 408 or the regulations or published interpretations thereunder has occurred with respect to any Employee Benefit Plan. At no time has the Company or any ERISA Affiliate maintained, sponsored, participated in, contributed to or has or had any liability or obligation in respect of any Employee Benefit Plan subject to Part 3 of Subtitle B of Title I of ERISA, Title IV of ERISA, or Section 412 of the Code or any “multiemployer plan” as defined in Section 3(37) of ERISA or any multiple employer plan for which the Company or any ERISA Affiliate has incurred or could incur liability under Section 4063 or 4064 of ERISA. No Employee Benefit Plan provides or promises, or at any time provided or promised, retiree health, retiree life insurance, or other retiree welfare benefits except as may be required by the Consolidated Omnibus Budget Reconciliation Act of 1985, as amended, or similar state law. Each Employee Benefit Plan is and has been operated in material compliance with its terms and all applicable laws, including but not limited to ERISA and the Code and, to the knowledge of the Company, no event has occurred (including a “reportable event” as such term is defined in Section 4043 of ERISA) and no condition exists that would subject the Company or any ERISA Affiliate to any material tax, fine, lien, penalty or liability imposed by ERISA, the Code or other applicable law. Each Employee Benefit Plan intended to be qualified under Code Section 401(a) is so qualified and has a favorable determination or opinion letter from the IRS upon which it can rely, and any such determination or opinion letter remains in effect and has not been revoked; to the knowledge of the Company, nothing has occurred since the date of any such determination or opinion letter that is reasonably likely to adversely affect such qualification; (B) with respect to each Foreign Benefit Plan (if any), such Foreign Benefit Plan (1) if intended to qualify for special tax treatment, meets, in all material respects, the requirements for such treatment, and (2) if required to be funded, is funded to the extent required by applicable law, and with respect to all other Foreign Benefit Plans, adequate reserves therefor have been established on the accounting statements of the Company; and (C) the Company does not have any obligations under any collective bargaining agreement with any union and, to the knowledge of the Company, no organization efforts are underway with respect to Company employees. As used in this Agreement, “**Code**” means the Internal Revenue Code of 1986, as amended; “**Employee Benefit Plan**” means any “employee benefit plan” within the meaning of Section 3(3) of ERISA, including, without limitation, all stock purchase, stock option, stock-based severance, employment, change-in-control, medical, disability, fringe benefit, bonus, incentive, deferred compensation, employee loan and all other employee benefit plans, agreements, programs, policies or other arrangements, whether or not subject to ERISA, under which (x) any current or former employee, director or independent contractor of the Company has any present or future right to benefits and which are contributed to, sponsored by or maintained by the Company and (y) the Company has had or has any present or future obligation or liability; “**ERISA**” means the Employee Retirement Income Security Act of 1974, as amended; “**ERISA Affiliate**” means any member of the company’s controlled group as defined in Code Section 414(b), (c), (m) or (o); and “**Foreign Benefit Plan**” means any Employee Benefit Plan established, maintained or contributed to outside of, and subject to applicable laws other than those of, the United States of America or any state thereof, or which covers any employee working or residing outside of the United States who is subject to applicable laws other than those of the United States or any state thereof with respect to such Employee Benefit Plan.

(xxix) Business Arrangements. Except as disclosed in the Registration Statement, the Time of Sale Disclosure Package and the Prospectus, the Company has not granted any rights to develop, manufacture, produce, assemble, distribute, license, market or sell its products to any other person and is not bound by any agreement that affects the exclusive right of the Company to develop, manufacture, produce, assemble, distribute, license, market or sell its products.

(xxx) Labor Matters. No labor problem or dispute with the employees of the Company exists or is threatened or imminent, and the Company is not aware of any existing or imminent labor disturbance by the employees of any of its principal suppliers, contractors or customers, that would, individually or in the aggregate, reasonably be expected to result in a Material Adverse Effect.

(xxxi) Disclosure of Legal Matters. There are no statutes, regulations, legal or governmental proceedings or contracts or other documents required to be described in the Time of Sale Disclosure Package or in the Prospectus or included as exhibits to the Registration Statement that are not described or included as required.

(xxxii) Statistical Information. Any third-party statistical and market-related data included in the Registration Statement, the Time of Sale Disclosure Package and the Prospectus are based on or derived from sources that the Company believes to be reliable and accurate in all material respects.

(xxxiii) Forward-looking Statements. No forward-looking statement (within the meaning of Section 27A of the Act and Section 21E of the Exchange Act) contained in the Registration Statement, the Time of Sale Disclosure Package or the Prospectus has been made or reaffirmed without a reasonable basis or has been disclosed other than in good faith.

(xxxvi) Emerging Growth Company. From the time of the initial confidential submission of the Registration Statement to the Commission through the date hereof, the Company has been and is an “emerging growth company,” as such term is defined in Section 2(a) of the Act (an “**Emerging Growth Company**”).

(xxxvii) Related Party Transactions. To the Company’s knowledge, no transaction has occurred between or among the Company, on the one hand, and any of the Company’s officers, directors or five percent or greater stockholders or any affiliate or affiliates of any such officer, director or five percent or greater stockholders that is required to be described that is not so described in the Registration Statement, the Time of Sale Disclosure Package and the Prospectus. The Company has not, directly or indirectly, extended or maintained credit, or arranged for the extension of credit, or renewed an extension of credit, in the form of a personal loan to or for any of its directors or executive officers in violation of applicable laws, including Section 402 of the Sarbanes-Oxley Act.

(xxxviii) Qualified Small Business Stock. As of and immediately following the First Closing Date and the Second Closing Date, as applicable: (i) the Company will be an eligible corporation as defined in Section 1202(e)(4) of the Code, (ii) the Company will not have made purchases of its own stock described in Code Section 1202(c)(3)(B) during the one year period preceding the First Closing Date and the Second Closing Date, as applicable, except for purchases that are disregarded for such purposes under Treasury Regulation Section 1.1202-2, and (iii) the Company’s aggregate gross assets, as defined by Code Section 1202(d)(2), at no time between its incorporation and through the First Closing Date and the Second Closing Date, as applicable, have exceeded \$50 million, taking into account the assets of any corporations required to be aggregated with the Company in accordance with Code Section 1202(d)(3).

(b) Effect of Certificates. Any certificate signed by any officer of the Company and delivered to you or to counsel for the Underwriters shall be deemed a representation and warranty by the Company to each Underwriter as to the matters covered thereby.

3. *Purchase, Sale and Delivery of Securities* .

(a) *Firm Units*. On the basis of the representations, warranties and agreements herein contained, but subject to the terms and conditions herein set forth, the Company agrees to issue and sell the Firm Units to the several Underwriters, and each Underwriter agrees, severally and not jointly, to purchase from the Company the number of Firm Units set forth opposite the name of such Underwriter in Schedule I hereto. The purchase price for each Firm Unit shall be \$[●] per Unit. The Shares and Warrants included in the Firm Units shall be separable as of the first trading day following the 60th day of the date of the Prospectus. In making this Agreement, each Underwriter is contracting severally and not jointly; except as provided in paragraph (d) of this Section 3, the agreement of each Underwriter is to purchase only the respective number of Firm Units specified in Schedule I.

(b) *Option Units*. On the basis of the representations, warranties and agreements herein contained, but subject to the terms and conditions herein set forth, the Company hereby grants to the several Underwriters an option to purchase all or any portion of the Option Units at the same purchase price as the Firm Units, for use solely in covering any over-allotments made by the Underwriters in the sale and distribution of the Firm Units. The option granted hereunder may be exercised in whole or in part at any time within 30 days after the effective date of this Agreement upon notice (confirmed in writing) by the Representative to the Company setting forth the aggregate number of Option Units as to which the several Underwriters are exercising the option and the date and time, as determined by you, when the Option Units are to be delivered, but in no event earlier than the First Closing Date (as defined below) nor earlier than the second business day or later than the tenth business day after the date on which the option shall have been exercised. The number of Option Units to be purchased by each Underwriter shall be the same percentage of the total number of Option Units to be purchased by the several Underwriters as the number of Firm Units to be purchased by such Underwriter is of the total number of Firm Units to be purchased by the several Underwriters, as adjusted by the Representative in such manner as the Representative deems advisable to avoid fractional shares. No Option Units shall be sold and delivered unless the Firm Units previously have been, or simultaneously are, sold and delivered. In no event may the option granted pursuant to this Section 3(b) be exercised after separation of the Firm Units occurs.

(c) *Payment and Delivery*.

(i) The Securities to be purchased by each Underwriter hereunder, in book-entry form in such authorized denominations and registered in such names as you may request upon at least forty-eight hours' prior notice to the Company, shall be delivered by or on behalf of the Company to you, through the facilities of the Depository Trust Company ("**DTC**"), for the account of such Underwriter, with any transfer taxes payable in connection with the transfer of the Securities to the Underwriters duly paid, against payment by or on behalf of such Underwriter of the purchase price therefor by wire transfer of Federal (same-day) funds to the account specified by the Company to you at least forty-eight hours in advance. The time and date of such delivery and payment shall be, with respect to the Firm Units, 9:30 a.m., New York City time, on [●], 2017, or such other time and date as you and the Company may agree upon in writing, and, with respect to the Option Units, 9:30 a.m., New York City time, on the date specified by you in each written notice given by you of the election to purchase such Option Units, or such other time and date as you and the Company may agree upon in writing. Such time and date for delivery of the Firm Units is herein called the "**First Closing Date**," each such time and date for delivery of the Option Units, if not the First Closing Date, is herein called a "**Second Closing Date**," and each such time and date for delivery is herein called a "**Closing**."

(ii) The documents to be delivered at each Closing by or on behalf of the parties hereto pursuant to Section 5 hereof, including the cross receipt for the Securities and any additional documents requested by the Underwriters pursuant to Section 5(l) hereof, will be delivered at the offices of the Company, and the Securities will be delivered to you, through the facilities of the DTC, for the account of such Underwriter, all at such Closing.

(d) Purchase by Representative on Behalf of the Underwriters. It is understood that you, individually and not as Representative of the several Underwriters, may (but shall not be obligated to) make payment to the Company on behalf of any Underwriter for the Securities to be purchased by such Underwriter. Any such payment by you shall not relieve any such Underwriter of any of its obligations hereunder. Nothing herein contained shall constitute any of the Underwriters an unincorporated association or partner with the Company.

4. **Covenants.** The Company covenants and agrees with the several Underwriters as follows:

(a) Required Filings. The Company will prepare and file a Prospectus with the Commission containing the Rule 430A Information omitted from the Preliminary Prospectus within the time period required by, and otherwise in accordance with the provisions of, Rules 424(b) and 430A of the Rules and Regulations. If the Company has elected to rely upon Rule 462(b) of the Rules and Regulations to increase the size of the offering registered under the Act and the Rule 462(b) Registration Statement has not yet been filed and become effective, the Company will prepare and file the Rule 462(b) Registration Statement with the Commission within the time period required by, and otherwise in accordance with the provisions of, Rule 462(b) of the Rules and Regulations and the Act. The Company will prepare and file with the Commission, promptly upon your request, any amendments or supplements to the Registration Statement or Prospectus that, in your opinion, may be necessary or advisable in connection with the distribution of the Securities by the Underwriters; and the Company will furnish you and counsel for the Underwriters a copy of any proposed amendment or supplement to the Registration Statement or Prospectus and will not file any amendment or supplement to the Registration Statement or Prospectus to which you shall reasonably object by notice to the Company after having been furnished a copy a reasonable time prior to the filing.

(b) Notification of Certain Commission Actions. The Company will advise you, promptly after it shall receive notice or obtain knowledge thereof, of the issuance by the Commission of any stop order suspending the effectiveness of the Registration Statement, or any post-effective amendment thereto or preventing or suspending the use of any Preliminary Prospectus, the Time of Sale Disclosure Package, the Prospectus or any issuer free writing prospectus, of the suspension of the qualification of the Securities for offering or sale in any jurisdiction, or of the initiation or threatening of any proceeding for any such purpose; and the Company will promptly use its best efforts to prevent the issuance of any stop order or to obtain its withdrawal if such a stop order should be issued.

(c) Continued Compliance with Securities Laws. Within the time during which a prospectus (assuming the absence of Rule 172) relating to the Securities is required to be delivered under the Act by any Underwriter or any dealer, the Company will comply with all requirements imposed upon it by the Act, as now and hereafter amended, and by the Rules and Regulations, as from time to time in force, so far as necessary to permit the continuance of sales of or dealings in the Securities as contemplated by the provisions hereof, the Time of Sale Disclosure Package and the Prospectus. The Company shall use its commercially reasonable efforts to keep the Registration Statement continuously effective under the Act, and to file on a timely basis with the Commission such periodic and special reports as required by the Rules and Regulations, until the earliest of (i) such time as all of the Securities (including the Firm Warrants and the Option Warrants) covered by such Registration Statement have been sold by the holders of such Securities; and (ii) the fifth anniversary of the Closing; provided, however, that, the foregoing requirements shall automatically terminate in connection with the consummation of a Fundamental Transaction. "**Fundamental Transaction**" means for purposes of this Section 4(c) that the Company shall, directly or indirectly, in one or more related transactions, sell, transfer, convey or otherwise dispose of all or substantially all of its respective properties and assets to any other person that is not an affiliate of the Company. If during such period any event occurs as a result of which the Registration Statement or the Prospectus (or if the Prospectus is not yet available to prospective purchasers, the Time of Sale Disclosure Package) would include an untrue statement of a material fact or omit to state a material fact necessary to make the statements therein, in the light of the circumstances then existing, not misleading, or if during such period it is necessary to amend the Registration Statement or supplement the Prospectus (or if the Prospectus is not yet available to prospective investors, the Time of Sale Disclosure Package) to comply with the Act, the Company promptly will (x) notify you of such untrue statement or omission, (y) amend the Registration Statement or supplement the Prospectus (or, if the Prospectus is not yet available to prospective purchasers, the Time of Sale Disclosure Package) (at the expense of the Company) so as to correct such statement or omission or effect such compliance and (z) notify you when any amendment to the Registration Statement is filed or becomes effective or when any supplement to the Prospectus (or, if the Prospectus is not yet available to prospective purchasers, the Time of Sale Disclosure Package) is filed.

(d) Blue Sky Qualifications. The Company shall take or cause to be taken all necessary action to qualify the Securities for sale under the securities laws of such domestic United States or foreign jurisdictions as you reasonably designate and to continue such qualifications in effect so long as required for the distribution of the Securities, except that the Company shall not be required in connection therewith to qualify as a foreign corporation or to execute a general consent to service of process in any state.

(e) Provision of Documents. The Company will furnish, at its own expense, to the Underwriters and counsel for the Underwriters copies of the Registration Statement, and to the Underwriters and any dealer each Preliminary Prospectus, the Time of Sale Disclosure Package, the Prospectus, and all amendments and supplements to such documents, in each case as soon as practicable once available and in such quantities as you may from time to time reasonably request.

(f) Rule 158. The Company will make generally available to its security holders as soon as practicable, but in no event later than 15 months after the end of the Company's current fiscal quarter, an earnings statement (which need not be audited) covering a 12-month period beginning after the effective date of the Registration Statement (which, for purposes of this paragraph, will be deemed to be the effective date of the Rule 462(b) Registration Statement, if applicable) that shall satisfy the provisions of Section 11(a) of the Act and Rule 158 of the Rules and Regulations.

(g) Payment and Reimbursement of Expenses. The Company, whether or not the transactions contemplated hereunder are consummated or this Agreement is terminated, will pay or cause to be paid (A) all expenses (including transfer taxes allocated to the respective transferees) incurred in connection with the delivery to the Underwriters of the Securities, (B) all expenses and fees (including, without limitation, fees and expenses of the Company's accountants and counsel) in connection with the preparation, printing, filing, delivery, and shipping of the Registration Statement (including the financial statements therein and all amendments, schedules, and exhibits thereto), the Securities, each Preliminary Prospectus, the Time of Sale Disclosure Package, the Prospectus, and any amendment thereof or supplement thereto, and the printing, delivery, and shipping of this Agreement and other underwriting documents, including Blue Sky Memoranda (covering the states and other applicable jurisdictions), (C) all filing fees and fees incurred in connection with the qualification of the Securities for offering and sale by the Underwriters or by dealers under the securities or blue sky laws of the states and other jurisdictions which you shall designate, including the reasonably incurred fees and disbursements of counsel for the Underwriters in connection with such qualification, (D) all filing fees and the reasonably incurred fees and disbursements of counsel to the Underwriters in connection with the review and qualification of the offering of the Securities by FINRA, (E) all fees and expenses in connection with the preparation and filing of the registration statement on Form 8-A related to the Securities and all costs and expenses incident to listing the Securities on The NASDAQ Capital Market, (F) all fees and expenses of any transfer agent, warrant agent or registrar, (G) the reasonable out-of-pocket accountable fees and disbursements incurred by the Underwriters in connection with the offer, sale or marketing of the Securities and performance of the Underwriters' obligations hereunder, including all reasonable out-of-pocket accountable fees and disbursements of Underwriters' counsel, and for the avoidance of doubt, excluding any general overhead, salaries, supplies, or similar expenses of the Underwriters incurred in the normal conduct of business, (H) all fees, expenses and disbursements relating to background checks of the Company's officers and directors (I) the cost and expenses of the Company relating to investor presentations or any "road show" undertaken in connection with marketing of the Securities, including, without limitation, expenses associated with the preparation or dissemination of any electronic road show, expenses associated with the production of road show slides and graphics, fees and expenses of any consultants engaged in connection with the road show presentations with the prior approval of the Company, travel and lodging expenses of the representatives and officers of the Company and any such consultants and the cost of any aircraft chartered in connection with the road show, and (J) all other costs and expenses of the Company incident to the performance of its obligations hereunder that are not otherwise specifically provided for herein. The fees and expenses, which includes the fees and expenses of the Underwriters' counsel, to be paid by the Company and reimbursed to the Underwriters under this Section 4(g) shall not exceed \$150,000, which amount shall include any amounts paid to the Underwriters pursuant to clauses (D), (G), (H) and (I) of this Section 4(g). If this Agreement is terminated by you pursuant to Section 8 hereof or if the sale of the Securities provided for herein is not consummated by reason of any failure, refusal or inability on the part of the Company to perform any agreement on its part to be performed, or because any other condition of the Underwriters' obligations hereunder required to be fulfilled by the Company is not fulfilled, the Company will reimburse the several Underwriters for all reasonable out-of-pocket accountable disbursements (including but not limited to fees and disbursements of counsel, printing expenses, travel expenses, postage, facsimile and telephone charges) incurred by the Underwriters in connection with their investigation, preparing to market and marketing the Securities or in contemplation of performing their obligations hereunder.

(h) Use of Proceeds. The Company will apply the net proceeds from the sale of the Securities to be sold by it hereunder for the purposes set forth in the Time of Sale Disclosure Package and in the Prospectus and will file such reports with the Commission with respect to the sale of the Securities and the application of the proceeds therefrom as may be required in accordance with Rule 463 of the Rules and Regulations.

(i) Company Lock Up. The Company will not, without the prior written consent of the Representative, from the date of execution of this Agreement and continuing to and including the date 365 days after the date of the Prospectus (the "**Lock-Up Period**"), (A) offer, pledge, announce the intention to sell, 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 or otherwise transfer or dispose of, directly or indirectly, any shares of Common Stock or any securities convertible into or exercisable or exchangeable for Common Stock or (B) enter into any swap or other agreement that transfers, in whole or in part, any of the economic consequences of ownership of the Common Stock, whether any such transaction described in clause (A) or (B) above is to be settled by delivery of Common Stock or such other securities, in cash or otherwise, except to the Underwriters pursuant to this Agreement and (x) grants of options, shares of Common Stock and other awards to purchase or receive shares of Common Stock under the Company Stock Plans that are in effect as of or prior to the date hereof, (y) issuances of shares of Common Stock upon the exercise of options or other awards granted under such Company Stock Plans or the Company's preferred stock outstanding as of the date hereof pursuant to the terms thereof as of such date or (z) issuance of shares of Common Stock upon the conversion of convertible securities outstanding as of the date hereof. The Company agrees not to accelerate the vesting of any option or warrant or the lapse of any repurchase right prior to the expiration of the Lock-Up Period.

(j) Stockholder Lock-Ups. The Company has caused to be delivered to you prior to the date of this Agreement a letter, in the form of Exhibit B hereto (the "**Lock-Up Agreement**"), from each individual or entity listed on Schedule II. The Company will enforce the terms of each Lock-Up Agreement and issue stop-transfer instructions to its transfer agent and registrar for the Common Stock with respect to any transaction or contemplated transaction that would constitute a breach of or default under the applicable Lock-Up Agreement and will not release the stop transfer instructions without the written approval of the Representative.

(k) No Market Stabilization or Manipulation. The Company has not taken and will not take, directly or indirectly, any action designed to or which might reasonably be expected to cause or result in, or which has constituted, the stabilization or manipulation of the price of any security of the Company to facilitate the sale or resale of the Securities, and has not effected any sales of Common Stock which are required to be disclosed in response to Item 701 of Regulation S-K under the Act which have not been so disclosed in the Registration Statement.

(l) SEC Reports. The Company will file on a timely basis with the Commission such periodic and special reports as required by the Rules and Regulations.

(m) Free Writing Prospectuses. The Company represents and agrees that, unless it obtains the prior written consent of the Representative, and each Underwriter represents and agrees that, unless it obtains the prior written consent of the Company and the Representative, it has not made and will not make any offer relating to the Securities that would constitute an issuer free writing prospectus or that would otherwise constitute a free writing prospectus.

(n) Emerging Growth Company. The Company will promptly notify the Representative if the Company ceases to be an Emerging Growth Company at any time prior to the later of (A) completion of the distribution of the Securities within the meaning of the Act and (B) completion of the Lock-Up Period referenced in Section 4(i) hereof.

(o) Underwriters' Warrants. On each Closing Date, the Company shall sell to the Representative, for an aggregate purchase price of \$[●] per warrant, a warrant in the form attached as Exhibit C hereto (each, an "**Underwriter's Warrant**" and, together, the "**Underwriters' Warrants**") to purchase the number of shares of the Company's common stock equal to 8.0% of the shares issued on such Closing Date (rounded up to the nearest whole share), it being understood that it shall be the decision of the Representative how to allocate such shares between the Underwriters upon exercise.

(p) Right of First Refusal. Upon the First Closing Date, the Representative shall have an irrevocable right of first refusal (the "**Right of First Refusal**") for a period of twelve (12) months after the date of the First Closing Date, to act, (i) at a minimum, as a co-manager and/or co-placement agent with at least 50.0% of the gross economics for any and all future public or private equity or debt offerings by the Company, and (ii) as agent or advisor in the event of a sale or merger of all or a portion of the Company. The Company shall promptly notify the Representative of its intention to pursue such an offering and/or sale or merger, including the material terms thereof, by providing written notice thereof by registered mail or overnight courier service addressed to the Representative. If the Representative fails to exercise its Right of First Refusal with respect to such a transaction within thirty (30) calendar days after the receipt by the Representative of such notice, then the Representative shall have no further claim or right with respect to such transaction. The Representative may elect, in its sole and absolute discretion, not to exercise its Right of First Refusal with respect to any such transaction; *provided* that any such election by the Representative shall not adversely affect the Representative's Right of First Refusal with respect to any other transaction during the twelve (12) month period agreed to above.

5. **Conditions of Underwriters' Obligations.** The obligations of the several Underwriters hereunder are subject to the accuracy, as of the date hereof and at each of the First Closing Date and the Second Closing Date (as if made at such Closing Date), of and compliance with all representations, warranties and agreements of the Company contained herein, to the performance by the Company of its obligations hereunder and to the following additional conditions:

(a) Required Filings; Absence of Certain Commission Actions. The Registration Statement shall have become effective not later than 5:30 p.m., Eastern time, on the date of this Agreement, or such later time and date as you, as Representative of the several Underwriters, shall approve and all filings required by Rules 424, 430A and 433 of the Rules and Regulations shall have been timely made (without reliance on Rule 424(b)(8) or Rule 164(b)); no stop order suspending the effectiveness of the Registration Statement or any part thereof or any amendment thereof, nor suspending or preventing the use of the Time of Sale Disclosure Package or the Prospectus shall have been issued; no proceedings for the issuance of such an order shall have been initiated or threatened; and any request of the Commission for additional information (to be included in the Registration Statement, the Time of Sale Disclosure Package, the Prospectus or otherwise) shall have been complied with to your satisfaction.

(b) Continued Compliance with Securities Laws. The Registration Statement, and any amendment thereof or supplement thereto, shall not contain any untrue statement of a material fact or omit to state a material fact which is required to be stated therein, or necessary to make the statements therein, in light of the circumstances under which they are made, not misleading. The Time of Sale Disclosure Package and the Prospectus, and any amendment thereof or supplement thereto, shall not contain any untrue statement of a material fact or omit to state a material fact which is required to be stated therein, or necessary to make the statements therein, in light of the circumstances under which they are made, not misleading.

(c) Absence of Certain Events. Except as contemplated in the Time of Sale Disclosure Package and in the Prospectus, subsequent to the date of the most recent financial statements of the Company included in the Time of Sale Disclosure Package and the Prospectus, the Company shall not have incurred any material liabilities or obligations, direct or contingent, or entered into any material transactions, or declared or paid any dividends or made any distribution of any kind with respect to its capital stock; and there shall not have been any change in the capital stock (other than a change in the number of outstanding shares of Common Stock due to the issuance of shares upon the exercise of outstanding options or warrants or conversion of convertible securities), or any material change in the short-term or long-term debt of the Company (other than as a result of the conversion of convertible securities), or any issuance of options, warrants, convertible securities or other rights to purchase the capital stock of the Company, or any Material Adverse Change or any development involving a prospective Material Adverse Change (whether or not arising in the ordinary course of business), that, in your judgment, makes it impractical or inadvisable to offer or deliver the Securities on the terms and in the manner contemplated in the Time of Sale Disclosure Package and in the Prospectus.

(d) Opinion of Company Counsel. On each Closing Date, there shall have been furnished to you, as Representative of the several Underwriters, the opinion and negative assurance letter of K&L Gates LLP, counsel for the Company, dated such Closing Date and addressed to you in substantially the form attached hereto as Exhibit D.

(e) Opinion of Underwriters' Counsel. On each Closing Date, there shall have been furnished to you, as Representative of the several Underwriters, such opinion or opinions from Faegre Baker Daniels LLP, counsel for the Underwriters, dated such Closing Date and addressed to you, with respect to such matters as you reasonably may request, and such counsel shall have received such papers and information as they request to enable them to pass upon such matters.

(f) Opinion of Company Intellectual Property Counsel. On each Closing Date, there shall have been furnished to you, as Representative of the several Underwriters, the opinion of Sim & McBurney, special intellectual property counsel for the Company, dated such Closing Date and addressed to you in substantially the form attached hereto as Exhibit E.

(g) Comfort Letters. On the date hereof, on the effective date of any post-effective amendment to the Registration Statement filed after the date hereof and on each Closing Date, you, as Representative of the several Underwriters, shall have received a letter containing statements and information of the type ordinarily included in accountants' "comfort letters" from RBSM LLP, each dated such date and addressed to you, in form and substance satisfactory to you.

(h) Officers' Certificate. On each Closing Date, there shall have been furnished to you, as Representative of the several Underwriters, a certificate, dated such Closing Date and addressed to you, signed by the chief executive officer and by the chief financial officer of the Company, to the effect that:

(i) The representations and warranties of the Company in this Agreement are true and correct as if made at and as of such Closing Date, and the Company has complied with all the agreements and satisfied all the conditions on its part to be performed or satisfied at or prior to such Closing Date; and

(ii) No stop order or other order suspending the effectiveness of the Registration Statement or any part thereof or any amendment thereof or the qualification of the Securities for offering or sale, nor suspending or preventing the use of the Time of Sale Disclosure Package, the Prospectus or any issuer free writing prospectus, has been issued, and no proceeding for that purpose has been instituted or, to the best of their knowledge, is contemplated by the Commission or any state or regulatory body.

(i) Lock-Up Agreement. The Representative shall have received all of the Lock-Up Agreements referenced in Section 4 and the Lock-Up Agreements shall remain in full force and effect.

(j) Underwriters' Warrants. The Representative shall have received the Underwriters' Warrants referenced in Section 4(o) with respect to the Securities to be delivered on such Closing Date.

(k) CFO Certificate. On the date hereof and on each Closing Date, as applicable, the Company shall have furnished to you, as Representative of the several Underwriters, a certificate, dated as of such date, signed on behalf of the Company by its chief financial officer, regarding the accuracy of certain financial information in the Registration Statement, the Time of Sale Disclosure Package and the Prospectus, in form and substance satisfactory to the Representative.

(l) Other Documents. The Company shall have furnished to you, as Representative of the several Underwriters, and counsel for the Underwriters such additional documents, certificates and evidence as you or they may have reasonably requested.

(m) FINRA No Objections. FINRA shall have raised no objection to the fairness and reasonableness of the underwriting terms and arrangements.

(n) Exchange Listing. The Securities to be delivered on such Closing Date will have been approved for listing on The NASDAQ Capital Market.

(o) Reverse Stock Split. The Company shall have effected the Reverse Stock Split prior to the First Closing Date .

All such opinions, certificates, letters and other documents will be in compliance with the provisions hereof only if they are satisfactory in form and substance to you, as Representative of the several Underwriters, and counsel for the Underwriters. The Company will furnish you with such conformed copies of such opinions, certificates, letters and other documents as you shall reasonably request.

6. Indemnification and Contribution.

(a) Indemnification by the Company. The Company agrees to indemnify and hold harmless each Underwriter, its affiliates, directors and officers and each person, if any, who controls such Underwriter within the meaning of Section 15 of the Act or Section 20 of the Exchange Act, from and against any losses, claims, damages or liabilities, joint or several, to which such Underwriter may become subject, under the Act or otherwise (including in settlement of any litigation if such settlement is effected with the written consent of the Company), insofar as such losses, claims, damages or liabilities (or actions in respect thereof) (i) arise out of or are based upon an untrue statement or alleged untrue statement of a material fact contained in the Registration Statement, including the 430A Information and any other information deemed to be a part of the Registration Statement at the time of effectiveness and at any subsequent time pursuant to the Rules and Regulations, if applicable, any Preliminary Prospectus, the Time of Sale Disclosure Package, the Prospectus, or any amendment or supplement thereto, any issuer free writing prospectus, any issuer information that the Company has filed or is required to file pursuant to Rule 433(d) of the Rules and Regulations, or any road show as defined in Rule 433(h) under the Act (a "**road show**"), or (ii) arise out of or are based upon the omission or alleged omission to state therein a material fact required to be stated therein or necessary to make the statements therein not misleading, and will reimburse each Underwriter for any legal or other expenses reasonably incurred by it in connection with investigating or defending against such loss, claim, damage, liability or action as such expenses are incurred; *provided, however*, that the Company will not be liable in any such case to the extent that any such loss, claim, damage, liability or action arises out of or is based upon an untrue statement or alleged untrue statement or omission or alleged omission made in reliance upon and in conformity with written information furnished to the Company by you, or by any Underwriter through you, specifically for use in the preparation thereof; it being understood and agreed that the only information furnished by an Underwriter consists of the information described as such in Section 6(e).

(b) Indemnification by the Underwriters. Each Underwriter will, severally and not jointly, indemnify and hold harmless the Company, its affiliates, directors and officers and each person, if any, who controls the Company within the meaning of Section 15 of the Act and Section 20 of the Exchange Act, from and against any losses, claims, damages or liabilities to which the Company may become subject, under the Act or otherwise (including in settlement of any litigation, if such settlement is effected with the written consent of such Underwriter), insofar as such losses, claims, damages or liabilities (or actions in respect thereof) (i) arise out of or are based upon an untrue statement or alleged untrue statement of a material fact contained in the Registration Statement, any Preliminary Prospectus, the Time of Sale Disclosure Package, the Prospectus, or any amendment or supplement thereto, any issuer free writing prospectus, any issuer information that the Company has filed or is required to file pursuant to Rule 433(d) of the Rules and Regulations, or any road show, or (ii) arise out of or are based upon the omission or alleged omission to state therein a material fact required to be stated therein or necessary to make the statements therein not misleading, in each case to the extent, but only to the extent, that such untrue statement or alleged untrue statement or omission or alleged omission was made in conformity with written information furnished to the Company by you, or by such Underwriter through you, specifically for use in the preparation thereof (it being understood and agreed that the only information furnished by an Underwriter consists of the information described as such in Section 6(e)), and will reimburse the Company for any legal or other expenses reasonably incurred by the Company in connection with investigating or defending against any such loss, claim, damage, liability or action as such expenses are incurred.

(c) Notice and Procedures. Promptly after receipt by an indemnified party under subsection (a) or (b) above of notice of the commencement of any action, such indemnified party shall, if a claim in respect thereof is to be made against the indemnifying party under such subsection, notify the indemnifying party in writing of the commencement thereof; but the omission so to notify the indemnifying party shall not relieve the indemnifying party from any liability that it may have to any indemnified party except to the extent such indemnifying party has been materially prejudiced by such failure (through the forfeiture of substantive rights or defenses). In case any such action shall be brought against any indemnified party, and it shall notify the indemnifying party of the commencement thereof, the indemnifying party shall be entitled to participate in, and, to the extent that it shall wish, jointly with any other indemnifying party similarly notified, to assume the defense thereof, with counsel satisfactory to such indemnified party, and after notice from the indemnifying party to such indemnified party of the indemnifying party's election so to assume the defense thereof, the indemnifying party shall not be liable to such indemnified party under such subsection for any legal or other expenses subsequently incurred by such indemnified party in connection with the defense thereof other than reasonable costs of investigation; provided, however, that if, in your reasonable judgment, it is advisable for the Underwriters to be represented as a group by separate counsel, you shall have the right to employ a single counsel (in addition to local counsel) to represent all Underwriters who may be subject to liability arising from any claim in respect of which indemnity may be sought by the Underwriters under subsection (a) above, in which event the reasonable fees and expenses of such separate counsel shall be borne by the indemnifying party or parties and reimbursed to the Underwriters as incurred. An indemnifying party shall not be obligated under any settlement agreement relating to any action under this Section 6 to which it has not agreed in writing. In addition, no indemnifying party shall, without the prior written consent of the indemnified party (which consent shall not be unreasonably withheld or delayed) effect any settlement of any pending or threatened proceeding unless such settlement includes an unconditional release of such indemnified party for all liability on claims that are the subject matter of such proceeding and does not include a statement as to, or an admission of, fault, culpability or a failure to act by or on behalf of an indemnified party. Notwithstanding the foregoing, if at any time an indemnified party shall have requested an indemnifying party to reimburse the indemnified party for fees and expenses of counsel pursuant to this Section 6(c), such indemnifying party agrees that it shall be liable for any settlement effected without its written consent if (i) such settlement is entered into more than 45 days after receipt by such indemnifying party of the aforesaid request and (ii) such indemnifying party shall not have reimbursed such indemnified party in accordance with such request prior to the date of such settlement.

(d) *Contribution; Limitations on Liability; Non-Exclusive Remedy.* If the indemnification provided for in this Section 6 is unavailable or insufficient to hold harmless an indemnified party under subsection (a) or (b) above, then each indemnifying party shall contribute to the amount paid or payable by such indemnified party as a result of the losses, claims, damages or liabilities referred to in subsection (a) or (b), (i) in such proportion as is appropriate to reflect the relative benefits received by the Company on the one hand and the Underwriters 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 Underwriters on the other in connection with the statements or omissions that resulted in such losses, claims, damages or liabilities, as well as any other relevant equitable considerations. The relative benefits received by the Company on the one hand and the Underwriters on the other shall be deemed to be in the same proportion as the total net proceeds from the offering (before deducting expenses) received by the Company bear to the total underwriting discounts and commissions received by the Underwriters, in each case as set forth in the table on the cover page of the Prospectus. The relative fault shall be determined by reference to, among other things, whether the untrue or alleged untrue statement of a material fact or the omission or alleged omission to state a material fact relates to information supplied by the Company or the Underwriters and the parties' relevant intent, knowledge, access to information and opportunity to correct or prevent such untrue statement or omission. The Company and the Underwriters agree that it would not be just and equitable if contributions pursuant to this subsection (d) were to be determined by pro rata allocation (even if the Underwriters were treated as one entity for such purpose) or by any other method of allocation which does not take account of the equitable considerations referred to in the first sentence of this subsection (d). The amount paid by an indemnified party as a result of the losses, claims, damages or liabilities referred to in the first sentence of this subsection (d) shall be deemed to include any legal or other expenses reasonably incurred by such indemnified party in connection with investigating or defending against any action or claim which is the subject of this subsection (d). Notwithstanding the provisions of this subsection (d), no Underwriter shall be required to contribute any amount in excess of the amount by which the total underwriting discounts and commissions received by such Underwriter with respect to the Securities exceeds the amount of any damages that such Underwriter has otherwise been required to pay by reason of such untrue or alleged untrue statement or omission or alleged omission. No person guilty of fraudulent misrepresentation (within the meaning of Section 11(f) of the Act) shall be entitled to contribution from any person who was not guilty of such fraudulent misrepresentation. The Underwriters' obligations in this subsection (d) to contribute are several in proportion to their respective underwriting obligations and not joint. The remedies provided for in this Section 6 are not exclusive and shall not limit any rights or remedies that might otherwise be available to any indemnified party at law or in equity.

(e) *Information Provided by the Underwriters.* The Underwriters severally confirm and the Company acknowledges that the statements with respect to the public offering of the Securities by the Underwriters set forth in the first paragraph of text under the caption "Discount, Commissions and Expenses" in the section titled "Underwriting," each of the first five paragraphs of text under the caption "Price Stabilization, Short Positions and Penalty Bids," and the estimate of the Underwriters' reasonable out-of-pocket accountable fees and disbursements in connection with the offering of the Securities in the Time of Sale Disclosure Package and in the Prospectus are correct and constitute the only information concerning the Underwriters furnished in writing to the Company by or on behalf of the Underwriters specifically for inclusion in the Registration Statement, any Preliminary Prospectus, the Time of Sale Disclosure Package, the Prospectus or any issuer free writing prospectus.

7. Representations and Agreements to Survive Delivery. All representations, warranties, and agreements of the Company herein or in certificates delivered pursuant hereto, and the agreements of the several Underwriters and the Company contained in Section 6 hereof, shall remain operative and in full force and effect regardless of any investigation made by or on behalf of any Underwriter or any controlling person thereof, or the Company or any of its officers, directors, or controlling persons, and shall survive delivery of, and payment for, the Securities to and by the Underwriters hereunder and any termination of this Agreement.

8. **Termination.**

(a) Right to Terminate. You shall have the right to terminate this Agreement by giving notice to the Company as hereinafter specified at any time at or prior to the First Closing Date, and the option referred to in Section 3(b), if exercised, may be cancelled at any time prior to the Second Closing Date, if (i) the Company shall have failed, refused or been unable, at or prior to such Closing Date, to perform any agreement on its part to be performed hereunder, including, without limitation, effecting the Reverse Stock Split prior to the First Closing Date, (ii) any other condition of the Underwriters' obligations hereunder is not fulfilled, (iii) trading on The NASDAQ Stock Market or New York Stock Exchange shall have been wholly suspended, (iv) minimum or maximum prices for trading shall have been fixed, or maximum ranges for prices for securities shall have been required, on The NASDAQ Stock Market or New York Stock Exchange, by such Exchange or by order of the Commission or any other Governmental Authority, (v) a banking moratorium shall have been declared by federal or state authorities, or (vi) there shall have occurred any outbreak or escalation of hostilities or any change in financial markets or any calamity or crisis that, in your judgment, is material and adverse and makes it impractical or inadvisable to proceed with the completion of the sale of and payment for the Securities in the manner contemplated in the Time of Sale Disclosure Package or the Prospectus. Any such termination shall be without liability of any party to any other party except that the provisions of Section 4(g) and Section 6 hereof shall at all times be effective.

(b) Notice of Termination. If you elect to terminate this Agreement as provided in this Section, the Company shall be notified promptly by you by telephone, confirmed by letter.

9. **Default by the Company.**

(a) Default by the Company. If the Company shall fail at the First Closing Date to sell and deliver the Securities which it is obligated to sell hereunder, then this Agreement shall terminate without any liability on the part of any Underwriter.

(b) No Relief from Liability. No action taken pursuant to this Section shall relieve the Company from liability, if any, in respect of any default hereunder.

10. **Notices.** Except as otherwise provided herein, all communications hereunder shall be in writing and, if to the Underwriters, shall be mailed via overnight delivery service or hand delivered via courier, to the Representative c/o Dougherty & Company LLC 90 South Seventh Street, Suite 4300, Minneapolis, Minnesota 55402, to the attention of Investment Banking; and (ii) if to the Company, shall be mailed or delivered to it at 3600 Green Court Suite 350, Ann Arbor, Michigan 48105, Attention: Francois Michelon. Any party to this Agreement may change such address for notices by sending to the parties to this Agreement written notice of a new address for such purpose.

11. **Persons Entitled to Benefit of Agreement.** This Agreement shall inure to the benefit of and be binding upon the parties hereto and their respective successors and assigns and the controlling persons, officers and directors referred to in Section 6. Nothing in this Agreement is intended or shall be construed to give to any other person, firm or corporation any legal or equitable remedy or claim under or in respect of this Agreement or any provision herein contained. The term "successors and assigns" as herein used shall not include any purchaser, as such purchaser, of any of the Securities from any of the several Underwriters.

12. **Absence of Fiduciary Relationship.** The Company acknowledges and agrees that: (a) the Representative has been retained solely to act as an underwriter in connection with the sale of the Securities and that no fiduciary, advisory or agency relationship between the Company and the Representative has been created in respect of any of the transactions contemplated by this Agreement, irrespective of whether the Representative has advised or is advising the Company on other matters; (b) the price and other terms of the Securities set forth in this Agreement were established by the Company following discussions and arms-length negotiations with the Representative 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; (c) it has been advised that the Representative 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 Representative has no obligation to disclose such interest and transactions to the Company by virtue of any fiduciary, advisory or agency relationship; (d) it has been advised that you as Representative are acting, in respect of the transactions contemplated by this Agreement, solely for the benefit of the Underwriters, and not on behalf of the Company; (e) it waives to the fullest extent permitted by law, any claims it may have against the Underwriters for breach of fiduciary duty or alleged breach of fiduciary duty in respect of any of the transactions contemplated by this Agreement and agrees that the Underwriters shall have no liability (whether direct or indirect) to the Company in respect of such a fiduciary duty claim on behalf of or in right of the Company, including stockholders, employees or creditors of the Company.

13. **Governing Law; Waiver of Jury Trial.** This Agreement shall be governed by and construed in accordance with the laws of the State of New York. The Company (on its behalf and, to the extent permitted by applicable law, on behalf of its stockholders and affiliates) and each of the Underwriters 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, the Underwriters' Warrants or the transactions contemplated hereby.

14. **Counterparts.** This Agreement may be executed in one or more counterparts and, if executed in more than one counterpart, the executed counterparts shall each be deemed to be an original and all such counterparts shall together constitute one and the same instrument.

15. **General Provisions.** This Agreement constitutes the entire agreement of the parties to this Agreement and supersedes all prior written or oral and all contemporaneous oral agreements, understandings and negotiations with respect to the subject matter hereof, including that certain engagement letter dated November 11, 2016, by and between the Company and the Representative, except for the provisions contained in Section 5(g) that remain in full force and effect. This Agreement may not be amended or modified unless in writing by all of the parties hereto, and no condition herein (express or implied) may be waived unless waived in writing by each party whom the condition is meant to benefit. The Section headings herein are for the convenience of the parties only and shall not affect the construction or interpretation of this Agreement. The invalidity or unenforceability of any Section, paragraph or provision of this Agreement shall not affect the validity or enforceability of any other Section, paragraph or provision hereof. If any Section, paragraph or provision of this Agreement is for any reason determined to be invalid or unenforceable, there shall be deemed to be made such minor changes (and only such minor changes) as are necessary to make it valid and enforceable.

[Signature Page Follows]

Please sign and return to the Company the enclosed duplicates of this letter whereupon this letter will become a binding agreement between the Company and the several Underwriters in accordance with its terms.

Very truly yours,

ENDRA LIFE SCIENCES INC.

By: _____
Name: _____
Title: _____

Confirmed as of the date first above mentioned, on behalf of itself and the other several Underwriters named in Schedule I hereto.

DOUGHERTY & COMPANY LLC.

By: _____
Name: _____
Title: _____

WARRANT AGREEMENT

THIS WARRANT AGREEMENT (this "**Warrant Agreement**"), dated as of January [], 2017, is entered into by and between ENDRA Life Sciences Inc., a Delaware corporation (the "**Company**"), and Corporate Stock Transfer, Inc., a Colorado corporation (the "**Warrant Agent**").

WHEREAS, the Company is engaged in an initial public offering (the "**Offering**") of up to [●] units (the "**Units**") (including the additional Units issuable to the underwriters if the underwriters' over-allotment option is exercised), each Unit consisting of one share of the Company's Common Stock, par value \$0.0001 per share (the "**Common Stock**"), and a warrant to purchase one share of Common Stock for an exercise price of [\$] [NOTE: An exercise price equal to 120% of the initial public offering price of the Unit.], subject to adjustment as described herein (each a "**Warrant**");

WHEREAS, the Company has filed with the U.S. Securities and Exchange Commission (the "**Commission**") a Registration Statement on Form S-1, No. 333-214724 (as the same may be amended from time to time, the "**Registration Statement**"), for the registration, under the Securities Act of 1933, as amended (the "**Securities Act**"), of, among other securities, (i) the Units, (ii) the Common Stock included in the Units, (iii) the Warrants included in the Units, and (iv) the Common Stock issuable upon exercise of the Warrants (the "**Warrant Shares**");

WHEREAS, the Registration Statement was declared effective on January [], 2017;

WHEREAS, the Company desires the Warrant Agent to act on behalf of the Company, and the Warrant Agent is willing to so act, in connection with the issuance, registration, transfer, exchange and exercise of the Warrants;

WHEREAS, the Company desires to provide for the form and provisions of the Warrants, the terms upon which they shall be issued and exercised, and the respective rights, limitation of rights, and immunities of the Company, the Warrant Agent, and the holders of the Warrants (each, a "**Holder**"); and

WHEREAS, all acts and things have been done and performed which are necessary to make the Warrants, when executed on behalf of the Company and countersigned by or on behalf of the Warrant Agent, as provided herein, the valid and binding obligations of the Company, and to authorize the execution and delivery of this Warrant Agreement.

NOW, THEREFORE, in consideration of the mutual agreements herein contained, the parties hereto agree as follows:

1. Appointment of Warrant Agent. The Company hereby appoints the Warrant Agent to act as agent for the Company for the Warrants, and the Warrant Agent hereby accepts such appointment and agrees to perform the same in accordance with the terms and conditions set forth in this Warrant Agreement.

2. Warrants.

2.1 Form of Warrant. Each Warrant shall be issued in registered, book-entry form only, shall be in substantially the form of Exhibit A hereto (each a "**Book-Entry Warrant Certificate**"), the provisions of which are incorporated herein, and shall be signed by, or bear the facsimile signature of, the Chief Executive Officer, President, Chief Financial Officer, Treasurer, Secretary or Assistant Secretary of the Company. For purposes of this Agreement, the term "**Issuance Date**" means the date a Warrant shall be issued. In the event the person whose facsimile signature has been placed upon any Warrant shall have ceased to serve in the capacity in which such person signed the Warrant before such Warrant is issued, it may be issued with the same effect as if he or she had not ceased to be such at the Issuance Date.

For purposes of this Agreement, the term "**person**" (whether or not capitalized) 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.

As used in this Warrant Agreement, the term "**Holder**" refers only to a registered holder of the Warrants.

2.2 Effect of Countersignature. Unless and until countersigned by the Warrant Agent pursuant to this Warrant Agreement, a Warrant shall be invalid and of no effect and may not be exercised by a Holder.

2.3 Registration.

2.3.1 Warrant Register. The Warrant Agent shall maintain books (the "**Warrant Register**") for the registration of the original issuance and the registration of any transfer of the Warrants. Upon the initial issuance of the Warrants, the Warrant Agent shall issue and register the Warrants in the names of the respective Holders in such denominations and otherwise in accordance with instructions delivered to the Warrant Agent by the Company. To the extent the Warrants are eligible as of the Issuance Date to be deposited through the Depository Trust Company (the "**Depository**"), all of the Warrants shall be represented by one or more Book-Entry Warrant Certificates deposited with the Depository and registered in the name of Cede & Co., a nominee of the Depository. Ownership of beneficial interests in the Book-Entry Warrant Certificates shall be shown on, and the transfer of such ownership shall be effected through, records maintained (i) by the Depository or its nominee for each Book-Entry Warrant Certificate; or (ii) by institutions that have accounts with the Depository (such institution, with respect to a Warrant in its account, a "**Participant**").

If the Warrants are not eligible as of the Issuance Date to be deposited through the Depository, or if the Depository subsequently ceases to make its book-entry settlement system available for the Warrants, the Company may instruct the Warrant Agent to make other arrangements for book-entry settlement within ten (10) Business Days after the Depository ceases to make its book-entry settlement available. In the event that the Company does not make alternative arrangements for book-entry settlement within ten (10) Business Days or the Warrants are not eligible for, or it is no longer necessary to have the Warrants available in, book-entry form, the Warrant Agent shall provide written instructions to the Depository to deliver to the Warrant Agent for cancellation each Book-Entry Warrant Certificate, and the Company shall instruct the Warrant Agent to deliver to the Depository definitive warrant certificates in physical form evidencing such Warrants (the "**Definitive Warrant Certificates**"); each of the Book-Entry Warrant Certificates and the Definitive Warrant Certificates is referred to herein as a "**Warrant Certificate**". Such Definitive Warrant certificates shall be in substantially the form attached hereto as Exhibit A.

As used in this Warrant Agreement, the term “ **Business Day**” means any day other than Saturday, Sunday or other day on which commercial banks in the City of New York are authorized or required by law or executive order to remain closed.

2.3.2 Beneficial Owner; Registered Holder. Prior to due presentment for registration of transfer of any Warrant, the Company and the Warrant Agent may deem and treat the person in whose name such Warrant shall be registered upon the Warrant Register (“**registered holder**”), as the absolute owner of such Warrant and of each Warrant represented thereby (notwithstanding any notation of ownership or other writing on the Definitive Warrant Certificate made by anyone other than the Company or the Warrant Agent), for the purpose of any exercise thereof, and for all other purposes, and neither the Company nor the Warrant Agent shall be affected by any notice to the contrary. The term “**beneficial owner**” shall mean, on or after the Separation Date (as defined below), any person in whose name ownership of a beneficial interest in the Warrants evidenced by a Book-Entry Warrant Certificate is recorded in the records maintained by the Depository or its nominee, and prior to the Separation Date, the person in whose name the Unit of which such Warrant or part thereof was originally part of, as registered upon the register relating to such Units; provided, that all such beneficial interests shall be held through a Participant which shall be the registered holder of such Warrants. The rights of beneficial owners shall be limited to those established by applicable law and agreements between the Depository and the Participants and between such Participants and beneficial owners and must be exercised through a Participant in accordance with the rules and procedures of the Depository; provided, however, the Company acknowledges and agrees that the rights and remedies of a Holder hereunder are vested with such beneficial owners.

2.4 Uncertificated Warrants. Notwithstanding the foregoing and anything else in this Warrant Agreement to the contrary, the Warrants may be issued in uncertificated form.

2.5 Detachability of Warrants. The Common Stock and Warrants that comprise the Units will begin to trade separately on (i) the first trading day following the 60th day of the date of the prospectus filed in connection with the Company’s initial public offering, or (ii) such earlier date as Dougherty & Company LLC shall determine is acceptable (such date, the “**Separation Date**”). On or after the Separation Date, a Holder may surrender a Warrant to the Warrant Agent, whereupon the Warrant Agent shall execute and deliver to the Registered Holder a new Definitive Warrant Certificate entitling a Holder to purchase the same number of shares of Common Stock, but without the legend which states:

"UNTIL [____], THIS WARRANT MAY NOT BE TRANSFERRED SEPARATELY, SPLIT UP, COMBINED OR EXCHANGED, BUT MAY ONLY BE TRANSFERRED, SPLIT UP, COMBINED OR EXCHANGED TOGETHER WITH THE SHARES OF COMMON STOCK OF ENDRA LIFE SCIENCES INC. WITH WHICH IT WAS SOLD AS A UNIT.

3. Terms and Exercise of Warrants.

3.1 Exercise Price. Each Warrant shall, when countersigned by the Warrant Agent, entitle the Holder, subject to the provisions of such Warrant and of this Warrant Agreement, to purchase from the Company the number of shares of Common Stock stated therein, at the price of \$[____] per share, subject to the subsequent adjustments provided in Section 4 hereof. The term "**Exercise Price**" as used in this Warrant Agreement refers to the price per share at which Common Stock may be purchased at the time a Warrant is exercised.

3.2 Duration of Warrants. A Warrant may be exercised only during the period (" **Exercise Period**") commencing on the Separation Date and terminating at 5:00 p.m., New York City time on January [____], 2022 (the "**Expiration Date**"). Each Warrant not exercised on or before the Expiration Date shall become void, and all rights thereunder and all rights in respect thereof under this Warrant Agreement shall cease at the close of business on the Expiration Date.

3.3 Exercise of Warrants.

3.3.1 Exercise and Payment. A Holder may exercise a Warrant by delivering, not later than 5:00 p.m., New York City time, on any Business Day during the Exercise Period (the "**Exercise Date**") to the Warrant Agent at its corporate trust department (i) a duly executed e-mail or facsimile copy of an election to purchase Warrant Shares underlying such Warrant in the form included on the reverse side of the applicable Warrant Certificate (an "**Election to Purchase**") and (ii) unless the cashless exercise procedure specified in Section 3.3.9 below is specified in the applicable Election to Purchase, the aggregate Exercise Price for the shares specified in the applicable Election to Purchase by wire transfer or cashier's check drawn on a United States bank. No ink-original Election to Purchase shall be required. Unless Warrant Shares, or a Warrant Certificate evidencing unexercised Warrants, are to be issued in a name other than that of the exercising Holder, no medallion guarantee (or other type of guarantee or notarization) of any Election to Purchase form shall be required. Notwithstanding anything herein to the contrary, a Holder shall not be required to physically surrender such Holder's Warrant Certificate to the Warrant Agent or the Company until such Holder has purchased all of the Warrant Shares available thereunder and the Warrant has been exercised in full, in which case, the Holder shall surrender such Holder's Warrant Certificate to the Warrant Agent for cancellation at the same time that the final Election to Purchase is delivered to the Warrant Agent. Partial exercises of any Warrant resulting in purchases of a portion of the total number of Warrant Shares available thereunder shall have the effect of lowering the outstanding number of Warrant Shares purchasable thereunder in an amount equal to the applicable number of Warrant Shares purchased. The Holder and the Warrant Agent shall maintain records showing the number of Warrant Shares purchased and the date of such purchases. The Company or the Warrant Agent shall deliver any objection to any Election to Purchase within one (1) Trading Day of receipt of such notice.

The term "**Trading Day**" means a day on which the principal Trading Market is open for trading. The term "**Trading Market**" means any of the following U.S. markets or exchanges on which the Common Stock is listed or quoted for trading on the date in question: the NYSE, NYSE MKT, the NASDAQ Capital Market, the NASDAQ Global Market or the NASDAQ Global Select Market (or any successors to any of the foregoing).

The Warrant Agent shall promptly deposit all funds received by it in payment of the Exercise Price in the account of the Company maintained with the Warrant Agent for such purpose and shall advise the Company via telephone or e-mail at the end of each day on which funds for the exercise of the Warrants are received of the amount so deposited to its account. The Warrant Agent shall promptly confirm such telephonic advice to the Company in writing.

3.3.2 Issuance of Certificates. The Warrant Agent shall, by 11:00 a.m. New York City time on the Trading Day following the Exercise Date of any Warrant, advise the Company or the transfer agent and registrar in respect of (a) the number of Warrant Shares issuable upon such exercise in accordance with the terms and conditions of this Warrant Agreement, (b) the instructions of each Holder with respect to delivery of the Warrant Shares issuable upon such exercise, and the delivery of Definitive Warrant Certificates, as appropriate, evidencing the balance, if any, of the Warrants remaining after such exercise and (c) in case of a Book-Entry Warrant Certificate, the notation that shall be made to the records maintained by the Depository or its nominee for each Book-Entry Warrant Certificate, as appropriate, evidencing the balance, if any, of the Warrants remaining after such exercise.

The Company shall, by 5:00 p.m., New York City time, on the third Trading Day next succeeding the Exercise Date of any Warrant and the clearance of the funds in payment of the aggregate Exercise Price, execute, issue and deliver to the Warrant Agent, the Warrant Shares to which such Holder is entitled, in fully registered form, registered in such name or names as may be directed by such Holder. Upon receipt of such Warrant Shares, the Warrant Agent shall, by 5:00 p.m., New York City time, on the third Trading Day next succeeding such Exercise Date, transmit such Warrant Shares to, or upon the order of, such Holder.

In lieu of delivering physical certificates representing the Warrant Shares issuable upon exercise of any Warrants, provided the Company's transfer agent is participating in the Depository's Fast Automated Securities Transfer (FAST) program, the Company shall use its commercially reasonable efforts to cause its transfer agent to electronically transmit the Warrant Shares issuable upon exercise to the Depository by crediting the account of the Depository or of the Participant, as the case may be, through its Deposit Withdrawal Agent Commission system. The time periods for delivery described in the immediately preceding paragraph shall apply to the electronic transmittals described in this Warrant Agreement. While the Warrants are outstanding, the Company agrees to use reasonable best efforts to maintain a transfer agent that participates in the FAST program.

3.3.3 Rescission Rights. If the Company fails to cause the Warrant Agent to transmit to any Holder the Warrant Shares by the third Trading Day following the Exercise Date, then such Holder will have the right to rescind such exercise.

3.3.4 Valid Issuance. All shares of Common Stock issued upon the proper exercise of a Warrant in conformity with this Warrant Agreement shall be validly issued, fully paid and nonassessable.

3.3.5 No Fractional Exercise. Warrants may be exercised only in whole numbers of Warrant Shares. No fractional Warrant Shares are to be issued upon the exercise of a Warrant, but rather the number of Warrant Shares to be issued shall be rounded up or down, as applicable, to the nearest whole number. If fewer than all of the Warrants evidenced by a Definitive Warrant Certificate are exercised, a new Definitive Warrant Certificate for the number of unexercised Warrants remaining shall be executed by the Company and countersigned by the Warrant Agent as provided in Section 2 of this Warrant Agreement, and delivered to the Holder at the address specified on the books of the Warrant Agent or as otherwise specified by such Holder. If fewer than all of the Warrants evidenced by a Book-Entry Warrant Certificate are exercised, a notation shall be made to the records maintained by the Depository or its nominee for each Book-Entry Warrant Certificate, as appropriate, evidencing the balance of the Warrants remaining after such exercise.

3.3.6 No Transfer Taxes. The Company shall not be required to pay any stamp or other tax or governmental charge required to be paid in connection with any third party transfer involved in the issue of the Warrant Shares upon the exercise of Warrants; and in the event that any such third party transfer is involved, the Company shall not be required to issue or deliver any Warrant Shares until such tax or other charge shall have been paid or it has been established to the Company's satisfaction that no such tax or other charge is due.

3.3.7 Date of Issuance. Each person in whose name any such certificate for Warrant Shares is issued shall for all purposes be deemed to have become the holder of record of such shares on the date on which the applicable Warrant was surrendered and payment of the Exercise Price was made, irrespective of the date of delivery of any such certificate, except that, if the date of such surrender and payment is a date when the stock transfer books of the Company are closed, such person shall be deemed to have become the holder of record of such shares at the close of business on the next succeeding date on which the stock transfer books are open.

3.3.8 Optional Cashless Exercise. If at any time during the term of this Warrant there is no effective registration statement registering under the Securities Act, or no current prospectus available for, the issuance or resale of the Warrant Shares by the registered holder, then this Warrant may also be exercised at such time by means of a "cashless exercise" in which the registered holder shall be entitled to receive a certificate for the number of Warrant Shares equal to the quotient obtained by dividing [(A-B) (X)] by (A), where:

(A) = the VWAP (as defined below) on the Trading Day immediately preceding the date of such election;

(B) = the Exercise Price of this Warrant, as adjusted; and

(X) = the number of Warrant Shares issuable upon exercise of this Warrant in accordance with the terms of this Warrant by means of a cash exercise rather than a cashless exercise.

The term "**VWAP**" means, for any date, the price determined by the first of the following clauses that applies: (a) if the Common Stock is then listed or quoted on a Trading Market (as defined below), 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. (Eastern time), (b) if the OTC Bulletin Board is not a Trading Market, the volume weighted average price of the Common Stock for such date (or the nearest preceding date) on the OTC Bulletin Board, (c) if the Common Stock is not then listed or quoted for trading on the OTC Bulletin Board and if prices for the 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 the Common Stock so reported, or (d) in all other cases, the fair market value of a share of Common Stock as determined by an independent appraiser selected in good faith by the Warrant Agent and reasonably acceptable to the Company, the fees and expenses of which shall be paid by the Company.

3.3.9 Disputes. In the case of a dispute as to the determination of the Exercise Price or the arithmetic calculation of the Warrant Shares, the Company shall promptly issue to the registered holder the number of Warrant Shares that are not disputed.

3.3.10 Limitations on Exercise. Neither the Warrant Agent nor the Company shall effect any exercise of any Warrant, and a registered holder shall not have the right to exercise any portion of a Warrant to the extent that after giving effect to the issuance of Warrant Shares after exercise as set forth on the applicable Election to Purchase, such Holder (together with such Holder's affiliates (as defined in Rule 405 under the Securities Act), and any other person or entity acting as a group together with such Holder or any of such Holder's affiliates (each an "**Attribution Party**")), 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 a Holder and its Affiliates and its Attribution Parties shall include the number of shares of Common Stock issuable upon exercise of the 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 such Holder or any of its Affiliates or Attribution Parties 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 such Holder or any of its Affiliates or Attribution Parties. Except as set forth in the preceding sentence, for purposes of this Section 3.3.10, beneficial ownership shall be calculated in accordance with Section 13(d) of the Securities Exchange Act of 1934, as amended (the "**Exchange Act**"), and the rules and regulations promulgated thereunder, it being acknowledged by each Holder that neither the Warrant Agent nor the Company is representing to such Holder that such calculation is in compliance with Section 13(d) of the Exchange Act and such Holder is solely responsible for any schedules required to be filed in accordance therewith. To the extent that the limitation contained in this Section 3.3.10 applies, the determination of whether a Warrant is exercisable (in relation to other securities owned by a Holder together with any Affiliates and Attribution Parties) and of which portion of a Warrant is exercisable shall be in the sole discretion of a Holder, and the submission of an Election to Purchase shall be deemed to be such Holder's determination of whether such Warrant is exercisable (in relation to other securities owned by such Holder together with any Affiliates and Attribution Parties) and of which portion of a Warrant is exercisable, and neither the Warrant Agent nor the Company shall have any obligation to verify or confirm the accuracy of such determination and neither of them shall have any liability for any error made by such Holder. 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 3.3.10, 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. The provisions of this Section 3.3.10 shall be construed and implemented in a manner otherwise than in strict conformity with the terms of this Section 6 to correct this subsection (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.

The "**Beneficial Ownership Limitation**" means 4.99% 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 such Warrant.

"**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.

The Holder may upon prior notice to the Company and the Warrant Agent increase or decrease the Beneficial Ownership Limitation, 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 the applicable Warrant held by such Holder and the provisions of this Section 3.3.10 shall continue to apply. Any such increase will not be effective until the 61st day after such notice is delivered to the Company and the Warrant Agent. The provisions of this Section 3.3.10 shall be construed, corrected and implemented in a manner so as to effectuate the intended Beneficial Ownership Limitation herein contained. The limitations contained in this paragraph shall apply to a successor Holder of any Warrant.

4. Adjustments.

4.1 Stock Dividends and Splits. If the Company, at any time while any of the Warrants 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 Warrant Shares issued pursuant to this Warrant Agreement or any of the Warrants), (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 Warrant Shares shall be proportionately adjusted such that the aggregate Exercise Price of each Warrant shall remain unchanged. Any adjustment made pursuant to this Section 4.1 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. The Company shall promptly notify Warrant Agent of any such adjustment and give specific instructions to Warrant Agent with respect to any adjustments to the Warrant Register.

4.2 Subsequent Rights Offerings. In addition to any adjustments pursuant to Section 4.1 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 each Holder will be entitled to acquire, upon the terms applicable to such Purchase Rights, the aggregate Purchase Rights which such Holder could have acquired if such 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 any Holder's right to participate in any such Purchase Right would result in such Holder exceeding the Beneficial Ownership Limitation, then such 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 such Holder until such time, if ever, as its right thereto would not result in such Holder exceeding the Beneficial Ownership Limitation).

4.3 Pro Rata Distributions. During such time as any of the Warrants is outstanding, if the Company shall declare or make 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 Date, then, in each such case, each Holder shall be entitled to participate in such Distribution to the same extent that such Holder would have participated therein if such Holder had held the number of Warrant Shares 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 any Holder's right to participate in any such Distribution would result in such Holder exceeding the Beneficial Ownership Limitation, then such 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 such Holder until such time, if ever, as its right thereto would not result in such Holder exceeding the Beneficial Ownership Limitation).

4.4 **Fundamental Transaction.** If, at any time while the Warrants are 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 transaction 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 (other than as a result of a dividend, subdivision or combination covered by Section 4.1) 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 a Warrant, each 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 3.3.10 on the exercise of such 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 as a result of such Fundamental Transaction by a holder of the number of Warrant Shares for which each Warrant is exercisable immediately prior to such Fundamental Transaction (without regard to any limitation in Section 3.3.10 on the exercise of such 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 other property to be received in a Fundamental Transaction, then the Holder shall be given the same choice as to the Alternate Consideration that such Holder receives upon any exercise of each 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 Agreement in accordance with the provisions of this Section 4.3 pursuant to written agreements and shall, upon the written request of such Holder and without regard to any limitation in Section 3.3.10 on the exercise of such Warrant, deliver to such Holder in exchange for the applicable Warrants created by this Warrant Agreement a security of the Successor Entity evidenced by a written instrument substantially similar in form and substance to the Warrants which are exercisable for a corresponding number of shares of capital stock of such Successor Entity (or its parent entity), if any, plus any Alternate Consideration, receivable as a result of such Fundamental Transaction by a holder of the number of shares of Common Stock for which the Warrants are exercisable immediately prior to such Fundamental Transaction, and with an exercise price which applies the Exercise Price hereunder to such shares of capital stock, if any, plus any Alternate Consideration (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 such Warrant immediately prior to the consummation of such Fundamental Transaction). 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 Agreement and the Warrants 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 Agreement and the Warrants with the same effect as if such Successor Entity had been named as the Company herein and therein.

The Company shall instruct the Warrant Agent to mail, by first class mail, postage prepaid, to each Holder, written notice of the execution of any such amendment, supplement to this Warrant Agreement and/or the Warrants or other agreement. Any such amendment, supplement or other agreement entered into by the Successor Entity shall provide for adjustments, which shall be as nearly equivalent as may be practicable to the adjustments provided for in this Section 4. The Warrant Agent shall be under no responsibility to determine the correctness of any provisions contained in such amendment, supplement or other agreement relating either to the kind or amount of securities or other property receivable upon exercise of the Warrants or with respect to the method employed and provided therein for any adjustments and shall be entitled to rely upon the provisions contained in any such amendment, supplement or other agreement. The provisions of this Section 4.3 shall similarly apply to successive reclassifications, changes, consolidations, mergers, sales and conveyances of the kind described above.

4.5 Other Events. If any event occurs of the type contemplated by the provisions of Section 4.1, 4.2 or 4.3 but not expressly provided for by such provisions (including, without limitation, the granting of stock appreciation rights, phantom stock rights or other rights with equity features to all holders of Common Stock for no consideration), then the Company's Board of Directors will in good faith make an adjustment in the Exercise Price and the number of Warrant Shares so as to protect the rights of each Holder.

4.6 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 to each Holder at its last address as it shall appear upon the Warrant Register of the Company, at least 20 calendar days prior to the applicable record or effective date hereinafter specified, a notice 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 mail such notice or any defect therein or in the mailing 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. A Holder shall remain entitled to exercise its 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.

4.7 Notices of Changes in Warrant. Upon every adjustment of the Exercise Price or the number of Warrant Shares, the Company shall give written notice thereof to the Warrant Agent, which notice shall state the Exercise Price resulting from such adjustment and the increase or decrease, if any, in the number of Warrant Shares purchasable upon the exercise of a Warrant, setting forth in reasonable detail the method of calculation and the facts upon which such calculation is based. Upon the occurrence of any event specified in Sections 4.1, 4.2 or 4.3, then, in any such event, the Company shall give written notice to each Holder, at the last address set forth for such Holder in the Warrant Register, of the record date or the effective date of the event. Failure to give such notice, or any defect therein, shall not affect the legality or validity of such event.

4.8 No Fractional Shares. Notwithstanding any provision contained in this Warrant Agreement to the contrary, the Company shall not issue fractional shares upon exercise of Warrants. If, by reason of any adjustment made pursuant to this Section 4, a Holder would be entitled, upon the exercise of such Warrant, to receive a fractional interest in a share, the Company shall, upon such exercise, round up or down, as applicable, to the nearest whole number the number of Warrant Shares to be issued to such Holder.

4.9 Form of Warrant. The form of Warrant need not be changed because of any adjustment pursuant to this Section 4, and Warrants issued after such adjustment may state the same Exercise Price and the same number of shares as is stated in the Warrants initially issued pursuant to this Warrant Agreement. However, the Company may at any time in its sole discretion make any change in the form of Warrant that the Company may deem appropriate and that does not affect the substance thereof, and any Warrant thereafter issued or countersigned, whether in exchange or substitution for an outstanding Warrant or otherwise, may be in the form as so changed.

4.10 Calculations. All calculations under this Section 4 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 4, 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.

5. Transfer and Exchange of Warrants.

5.1 Registration of Transfer. Prior to the Separation Date, the Warrants may be transferred or exchanged only as part of the Unit in which such Warrant is included, and only for the purpose of effecting, or in conjunction with, a transfer or exchange of such Unit. For the avoidance of doubt, each transfer of a Unit on the register relating to such Units shall operate also to transfer the Warrants included in such Unit. The Warrant Agent shall register the transfer, from time to time, of any outstanding Warrant upon the Warrant Register, upon surrender of such Warrant for transfer, properly endorsed with signatures properly guaranteed and accompanied by appropriate instructions for transfer. Upon any such transfer, a new Warrant representing an equal aggregate number of Warrants shall be issued and the old Warrant shall be cancelled by the Warrant Agent. The Warrants so cancelled shall be delivered by the Warrant Agent to the Company from time to time upon request.

5.2 Procedure for Surrender of Warrants. Warrants may be surrendered to the Warrant Agent, together with a written request for exchange or transfer reasonably acceptable to Warrant Agent, duly executed by the Holder thereof, or by a duly authorized attorney, and thereupon the Warrant Agent shall issue in exchange therefor one or more new Warrants as requested by the Holder of the Warrants so surrendered, representing an equal aggregate number of Warrants; provided, however, that except as otherwise provided herein or in any Book-Entry Warrant Certificate, each Book-Entry Warrant Certificate may be transferred only in whole and only to the Depository, to another nominee of the Depository, to a successor depository, or to a nominee of a successor depository; provided further, however, that in the event that a Warrant surrendered for transfer bears a restrictive legend, the Warrant Agent shall not cancel such Warrant and issue new Warrants in exchange therefor until the Warrant Agent has received an opinion of counsel for the Company stating that such transfer may be made and indicating whether the new Warrants must also bear a restrictive legend.

5.3 Fractional Warrants. The Warrant Agent shall not be required to effect any registration of transfer or exchange which will result in the issuance of a Warrant Certificate for a fraction of a Warrant.

5.4 Service Charges. No service charge shall be made for any exchange or registration of transfer of Warrants.

5.5 Warrant Execution and Countersignature. The Warrant Agent is hereby authorized to countersign and to deliver, in accordance with the terms of this Warrant Agreement, the Warrants required to be issued pursuant to the provisions of this Section 5, and the Company, whenever required by the Warrant Agent, will supply the Warrant Agent with Warrants duly executed on behalf of the Company for such purpose.

6. Other Provisions Relating to Rights of Holders of Warrants.

6.1 No Rights as Stockholder. Except as otherwise specifically provided herein, a Holder, solely in its capacity as an owner of a Warrant, shall not be entitled to vote or receive dividends or be deemed the holder of share capital of the Company for any purpose, nor shall anything contained in this Warrant Agreement be construed to confer upon a Holder, solely in its capacity as the owner of a Warrant, any of the rights of a stockholder of the Company or any right to vote, give or withhold consent to any corporate action (whether any reorganization, issue of stock, reclassification of stock, consolidation, merger, conveyance or otherwise), receive notice of meetings, receive dividends or subscription rights, or otherwise, prior to the issuance to the Holder of the Warrant Shares which it is then entitled to receive upon the due exercise of a Warrant. For the avoidance of doubt, ownership of a Warrant does not entitle the Holder or any beneficial owner thereof to any of the rights of a stockholder.

6.2 Lost, Stolen, Mutilated, or Destroyed Warrants. If any Warrant is lost, stolen, mutilated or destroyed, the Company and the Warrant Agent may, on such terms as to indemnity or otherwise as they may in their discretion impose (which shall, in the case of a mutilated Warrant, include the surrender thereof), issue a new Warrant of like denomination, tenor and date as the Warrant so lost, stolen, mutilated or destroyed. Any such new Warrant shall constitute a substitute contractual obligation of the Company, whether or not the allegedly lost, stolen, mutilated or destroyed Warrant shall be at any time enforceable by anyone.

6.3 Reservation of Common Stock. The Company shall at all times reserve and keep available a number of its authorized but unissued shares of Common Stock that will be sufficient to permit the exercise in full of all outstanding Warrants issued pursuant to this Warrant Agreement.

7. Concerning the Warrant Agent and Other Matters.

7.1 Payment of Taxes. The Company will from time to time promptly pay all taxes and charges that may be imposed upon the Company or the Warrant Agent in respect of the issuance or delivery of Warrant Shares upon the exercise of Warrants, but the Company shall not be obligated to pay any transfer taxes in respect of the Warrants or such shares.

7.2 Resignation, Consolidation, or Merger of Warrant Agent.

7.2.1 Appointment of Successor Warrant Agent. The Warrant Agent, or any successor to it hereafter appointed, may resign its duties and be discharged from all further duties and liabilities hereunder after giving sixty (60) calendar days' notice in writing to the Company. If the office of the Warrant Agent becomes vacant by resignation or incapacity to act or otherwise, the Company shall appoint in writing a successor Warrant Agent in place of the Warrant Agent. If the Company shall fail to make such appointment within a period of thirty (30) calendar days after it has been notified in writing of such resignation or incapacity by the Warrant Agent or by the Holder (who shall, with such notice, submit such Holder's Warrants for inspection by the Company), then such Holder may apply to the Supreme Court of the State of New York for the County of New York for the appointment of a successor Warrant Agent, the expenses of which shall be paid by the Company. Any successor Warrant Agent (but not including the initial Warrant Agent), whether appointed by the Company or by such court, shall be a duly organized and existing corporation, authorized under the laws of its state of incorporation to exercise corporate trust powers and subject to supervision or examination by federal or state authority. After appointment, any successor Warrant Agent shall be vested with all the authority, powers, rights, immunities, duties, and obligations of its predecessor Warrant Agent with like effect as if originally named as Warrant Agent hereunder, without any further act or deed; but if for any reason it becomes necessary or appropriate, the predecessor Warrant Agent shall execute and deliver, at the expense of the Company, an instrument transferring to such successor Warrant Agent all the authority, powers, and rights of such predecessor Warrant Agent hereunder; and upon request of any successor Warrant Agent the Company shall make, execute, acknowledge, and deliver any and all instruments in writing for more fully and effectually vesting in and confirming to such successor Warrant Agent all such authority, powers, rights, immunities, duties, and obligations.

7.2.2 Notice of Successor Warrant Agent. In the event a successor Warrant Agent shall be appointed, the Company shall give notice thereof to the predecessor Warrant Agent and the transfer agent for the Common Stock not later than the effective date of any such appointment.

7.2.3 Merger or Consolidation of Warrant Agent. Any corporation into which the Warrant Agent may be merged or with which it may be consolidated or any corporation resulting from any merger or consolidation to which the Warrant Agent shall be a party shall be the successor Warrant Agent under this Warrant Agreement without any further act.

7.3 Fees and Expenses of Warrant Agent.

7.3.1 Remuneration. The Company agrees to pay the Warrant Agent reasonable remuneration for its services as such Warrant Agent hereunder and will reimburse the Warrant Agent upon demand for all expenditures that the Warrant Agent may reasonably incur in the execution of its duties hereunder.

7.3.2 Further Assurances. The Company agrees to perform, execute, acknowledge and deliver or cause to be performed, executed, acknowledged and delivered all such further and other acts, instruments and assurances as may reasonably be required by the Warrant Agent for the carrying out or performing of the provisions of this Warrant Agreement.

7.4 Liability of Warrant Agent.

7.4.1 Reliance on Company Statement. Whenever in the performance of its duties under this Warrant Agreement the Warrant Agent shall deem it necessary or desirable that any fact or matter be proved or established by the Company prior to taking or suffering any action hereunder, such fact or matter (unless other evidence in respect thereof be herein specifically prescribed) may be deemed to be conclusively proved and established by a statement signed by the President, Chief Executive Officer or Chief Financial Officer of the Company and delivered to the Warrant Agent. The Warrant Agent may rely upon such statement for any action taken or suffered in good faith by it pursuant to the provisions of this Warrant Agreement.

7.4.2 Indemnity. The Warrant Agent shall be liable hereunder only for its own gross negligence, willful misconduct or bad faith. The Company agrees to indemnify the Warrant Agent and save it harmless against any and all liabilities, including judgments, costs and reasonable counsel fees, for anything done or omitted by the Warrant Agent in the execution of this Warrant Agreement, except as a result of the Warrant Agent's gross negligence, willful misconduct or bad faith.

7.4.3 Exclusions. The Warrant Agent shall have no responsibility with respect to the validity of this Warrant Agreement or with respect to the validity or execution of any Warrant (except its countersignature hereof and thereof); nor shall it be responsible for any breach by the Company of any covenant or condition contained in this Warrant Agreement or in any Warrant; nor shall it be responsible to make any adjustments required under the provisions of Section 4 hereof or responsible for the manner, method or amount of any such adjustment or the ascertaining of the existence of facts that would require any such adjustment; nor shall it by any act hereunder be deemed to make any representation or warranty as to the authorization or reservation of any Warrant Shares to be issued pursuant to this Warrant Agreement or any Warrant or as to whether any Warrant Shares will when issued be validly issued and fully paid and nonassessable.

7.5 Acceptance of Agency. The Warrant Agent hereby accepts the agency established by this Warrant Agreement and agrees to perform the same upon the terms and conditions herein set forth and, among other things, shall account promptly to the Company with respect to Warrants exercised and concurrently account for, and pay to the Company, all moneys received by the Warrant Agent for the purchase of Warrant Shares through the exercise of Warrants.

8. Miscellaneous Provisions.

8.1 Successors. All the covenants and provisions of this Warrant Agreement by or for the benefit of the Company or the Warrant Agent shall bind and inure to the benefit of their respective successors and assigns.

8.2 Notices. Any notice, statement or demand authorized by this Warrant Agreement to be given or made by the Warrant Agent or by a Holder to or on the Company shall be sufficiently given when so delivered if by e-mail or fax, the date of confirmed transmission, and if by hand or overnight delivery or if sent by certified mail or private courier service within five (5) Business Days after deposit of such notice, postage prepaid, addressed (until another address is filed in writing by the Company with the Warrant Agent), as follows:

ENDRA Life Sciences Inc.
3600 Green Court, Suite 350
Ann Arbor, MI 48105
E-mail: fmichelon@endrainc.com
Attn: Chief Executive Officer

with a copy in each case to:

K&L Gates LLP
214 North Tryon Street, Suite 4700
Charlotte, NC 28202
E-mail: mark.busch@klgates.com
Fax: (704) 353-3140
Attn: Mark R. Busch

Any notice, statement or demand authorized by this Warrant Agreement to be given or made by a Holder or by the Company to or on the Warrant Agent shall be sufficiently given when so delivered if by e-mail or fax, the date of confirmed transmission, and if by hand or overnight delivery or if sent by certified mail or private courier service within five (5) Business Days after deposit of such notice, postage prepaid, addressed (until another address is filed in writing by the Warrant Agent with the Company), as follows:

Corporate Stock Transfer, Inc.
3200 Cherry Creek Drive South, #430
Denver, CO 80209
E-mail: knaughton@corporatetstock.com
Fax: (303) 282-5800
Attn: Karen Naughton

8.3 Applicable Law. The validity, interpretation and performance of this Warrant Agreement and of the Warrants shall be governed in all respects by the laws of the State of New York, without giving effect to conflicts of law principles that would result in the application of the substantive laws of another jurisdiction. The Company hereby agrees that any action, proceeding or claim against it arising out of or relating in any way to this Warrant Agreement shall be brought and enforced in the courts of the State of New York or 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 8.2 hereof. Such mailing shall be deemed personal service and shall be legal and binding upon the Company in any action, proceeding or claim.

8.4 Persons Having Rights under this Warrant Agreement. Nothing in this Warrant Agreement expressed and nothing that may be implied from any of the provisions hereof is intended, or shall be construed, to confer upon, or give to, any person or corporation other than the parties hereto and the Holders of the Warrants and, for purposes of Sections 3.3, 8.3 and 8.8, the Underwriter, any right, remedy, or claim under or by reason of this Warrant Agreement or of any covenant, condition, stipulation, promise, or agreement hereof. The Underwriters shall be deemed to be an express third-party beneficiary of this Warrant Agreement with respect to Sections 3.3, 8.3 and 8.8 hereof. All covenants, conditions, stipulations, promises, and agreements contained in this Warrant Agreement shall be for the sole and exclusive benefit of the parties hereto (and the Underwriters with respect to the Sections 3.3, 8.3 and 8.8 hereof) and their successors and assigns and of the Holders.

8.5 Examination of the Warrant Agreement. A copy of this Warrant Agreement shall be available for inspection by any Holder at all reasonable times at the office of the Warrant Agent in Denver, Colorado and at the office of the Company in Ann Arbor, Michigan. The Warrant Agent may require any such Holder to submit his, her or its Warrant for inspection by it.

8.6 Counterparts. This Warrant Agreement may be executed in any number of original or facsimile counterparts and each of such counterparts shall for all purposes be deemed to be an original, and all such counterparts shall together constitute but one and the same instrument.

8.7 Effect of Headings. The section headings herein are for convenience only and are not part of this Warrant Agreement and shall not affect the interpretation thereof.

8.8 Amendments. Any modifications or amendments, including any amendment to increase the Exercise Price or shorten the Exercise Period, shall require the written consent of the Holders of a majority of the then outstanding Warrants. No consideration shall be offered or paid to any Person to amend or consent to a waiver or modification of any provision of this Warrant Agreement unless the same consideration is also offered to all of the Holders.

8.9 Severability. This Warrant Agreement shall be deemed severable, and the invalidity or unenforceability of any term or provision hereof shall not affect the validity or enforceability of this Warrant Agreement or of any other term or provision hereof. Furthermore, in lieu of any such invalid or unenforceable term or provision, the parties hereto intend that there shall be added as a part of this Warrant Agreement a provision as similar in terms to such invalid or unenforceable provision as may be possible and be valid and enforceable.

[Signature page follows]

IN WITNESS WHEREOF, this Warrant Agreement has been duly executed by the parties hereto as of the day and year first above written.

ENDRA LIFE SCIENCES INC.

By: _____
Name: _____
Title: _____

CORPORATE STOCK TRANSFER, INC.

By: _____
Name: _____
Title: _____

[SIGNATURE PAGE TO WARRANT AGREEMENT]

Exhibit A - Form of Warrant Certificate

THE SECURITIES REPRESENTED BY THIS WARRANT CERTIFICATE (INCLUDING THE SECURITIES ISSUABLE UPON THE EXERCISE OF THE WARRANT) ARE SUBJECT TO THE TERMS AND CONDITIONS SET FORTH IN THE WARRANT AGREEMENT DATED AS OF JANUARY [], 2017, BY AND BETWEEN THE COMPANY AND THE WARRANT AGENT. COPIES OF SUCH AGREEMENT MAY BE OBTAINED BY THE HOLDER HEREOF AT THE COMPANY'S PRINCIPAL PLACE OF BUSINESS WITHOUT CHARGE.

UNTIL [], THIS WARRANT MAY NOT BE TRANSFERRED SEPARATELY, SPLIT UP, COMBINED OR EXCHANGED, BUT MAY ONLY BE TRANSFERRED, SPLIT UP, COMBINED OR EXCHANGED TOGETHER WITH THE SHARES OF COMMON STOCK OF ENDRA LIFE SCIENCES INC. WITH WHICH IT WAS SOLD AS A UNIT.

EXERCISABLE ONLY IF COUNTERSIGNED BY THE WARRANT
AGENT AS PROVIDED HEREIN.

Warrant Certificate Evidencing Warrants to Purchase
Common Stock, par value of \$0.0001 per share, as described herein.

ENDRA LIFE SCIENCES INC.

No. _____

CUSIP [_____]

**VOID AFTER 5:00 P.M., NEW YORK CITY TIME,
ON JANUARY, [], 2022**

This certifies that _____ or registered assigns is the registered holder (the "**Holder**") of _____ warrants to purchase certain securities (each a "**Warrant**"). Each Warrant entitles the Holder, subject to the provisions contained herein and in the Warrant Agreement (as defined below), to purchase from ENDRA Life Sciences Inc., a Delaware corporation (the "**Company**"), one-half of one share (collectively, the "**Warrant Shares**") of Common Stock, par value \$0.0001 per share, of the Company ("**Common Stock**"), at the Exercise Price set forth below. The price per share at which each Warrant Share may be purchased at the time each Warrant is exercised (the "**Exercise Price**") is \$[] initially, subject to adjustments as set forth in the Warrant Agreement (as defined below).

This Warrant Certificate is issued under and in accordance with the Warrant Agreement, dated as of January [], 2017 (the "**Warrant Agreement**"), between the Company and the Warrant Agent, and is subject to the terms and provisions contained in the Warrant Agreement, to all of which terms and provisions the Holder of this Warrant Certificate and the beneficial owners of the Warrants represented by this Warrant Certificate consent by acceptance hereof. Copies of the Warrant Agreement are on file and can be inspected at the below-mentioned office of the Warrant Agent and at the office of the Company at 3600 Green Court, Suite 350, Ann Arbor, Michigan 48105. Capitalized terms used but not defined herein shall have the meaning ascribed to them in the Warrant Agreement.

Subject to the terms of the Warrant Agreement, each Warrant evidenced hereby may be exercised in whole but not in part at any time, as specified herein, on any Business Day (as defined below) occurring during the period (the “**Exercise Period**”) commencing on the Separation Date and terminating at 5:00 p.m., New York City time, on January [], 2022 (the “**Expiration Date**”). Each Warrant remaining unexercised after 5:00 p.m., New York City time, on the Expiration Date shall become void, and all rights of the Holder of this Warrant Certificate evidencing such Warrant shall cease.

The Holder of the Warrants represented by this Warrant Certificate may exercise any Warrant evidenced hereby by delivering, not later than 5:00 p.m., New York City time, on any Business Day during the Exercise Period (the “**Exercise Date**”) to Corporate Stock Transfer, Inc. (the “**Warrant Agent**”, which term includes any successor warrant agent under the Warrant Agreement described below) at its corporate trust department at 3200 Cherry Creek Drive South, #430, Denver, Colorado 80209, (i) a duly executed e-mail or facsimile copy of an election to purchase (“**Election to Purchase**”), properly executed by the Holder hereof on the reverse of this Warrant Certificate or properly executed by the institution in whose account the Warrant is recorded on the records of the Depository (the “**Participant**”), and substantially in the form included on the reverse of this Warrant Certificate, and (ii) unless cashless exercise is permitted under the Warrant Agreement and exercised by the Holder, the aggregate Exercise Price for the shares specified in the applicable Election to Purchase by wire transfer or cashier’s check drawn on a United States bank. No ink-original Election to Purchase shall be required. Unless Warrant Shares, or a Warrant Certificate evidencing unexercised Warrants, are to be issued in a name other than that of the exercising Holder, no medallion guarantee (or other type of guarantee or notarization) of any Election to Purchase form shall be required. Notwithstanding anything herein to the contrary, the Holder shall not be required to physically surrender this Warrant Certificate to the Warrant Agent or 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 Certificate to the Warrant Agent for cancellation at the same time the final Election to Purchase is delivered to the Warrant Agent. 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 Warrant Agent shall maintain records showing the number of Warrant Shares purchased and the date of such purchases. The Company or the Warrant Agent shall deliver any objection to any Election to Purchase within one (1) Trading Day of receipt of such notice. **The Holder and any assignee, by acceptance of this Warrant Certificate, 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.**

The term “**Business Day**” means any day other than Saturday, Sunday or other day on which commercial banks in the City of New York are authorized or required by law or executive order to remain closed. The term “**Trading Day**” means a day on which the principal Trading Market is open for trading. The term “**Trading Market**” means any of the following U.S. markets or exchanges on which the Common Stock is listed or quoted for trading on the date in question: the NYSE, NYSE MKT, the NASDAQ Capital Market, the NASDAQ Global Market or the NASDAQ Global Select Market (or any successors to any of the foregoing).

Warrants may be exercised only in whole numbers of Warrants. No fractional Warrant Shares are to be issued upon the exercise of this Warrant, but rather the number of Warrant Shares to be issued shall be rounded up to the nearest whole number. If fewer than all of the Warrants evidenced by this Warrant Certificate are exercised, a new Warrant Certificate for the number of Warrants remaining unexercised shall be executed by the Company and countersigned by the Warrant Agent as provided in Section 3 of the Warrant Agreement, and delivered to the Holder of this Warrant Certificate at the address specified on the books of the Warrant Agent or as otherwise specified by such Holder.

Exercise of the Warrants is subject to the terms, conditions and limitations set forth in the Warrant Agreement, which such terms, conditions and limitations include, without limitation, the prohibitions on exercise set forth in Section 3.3.10 of the Warrant Agreement if the exercise would result in the Holder, together with certain of its Affiliates, beneficially owning in excess of the Beneficial Ownership Limitation.

The Exercise Price and the number of Warrant Shares purchasable upon the exercise of each Warrant shall be subject to adjustment as provided pursuant to Section 4 of the Warrant Agreement.

Neither this Warrant Certificate nor the Warrants evidenced hereby entitles the Holder to any of the rights of a stockholder of the Company, including, without limitation, the right to receive dividends, or other distributions, exercise any preemptive rights to vote or to consent or to receive notice as stockholders in respect of the meetings of stockholders or the election of directors of the Company or any other matter.

The Warrant Agreement and this Warrant Certificate may be amended as provided in the Warrant Agreement including, under certain circumstances described therein, without the consent of the Holder of this Warrant Certificate or the Warrants evidenced thereby.

THIS WARRANT CERTIFICATE AND ALL RIGHTS HEREUNDER AND UNDER THE WARRANT AGREEMENT SHALL BE GOVERNED BY AND INTERPRETED AND CONSTRUED IN ACCORDANCE WITH THE LAWS OF THE STATE OF NEW YORK APPLICABLE TO CONTRACTS FORMED AND TO BE PERFORMED ENTIRELY WITHIN THE STATE OF NEW YORK, WITHOUT REGARD TO THE CONFLICTS OF LAW PROVISIONS THEREOF TO THE EXTENT SUCH PRINCIPLES OR RULES WOULD REQUIRE OR PERMIT THE APPLICATION OF THE LAWS OF ANOTHER JURISDICTION.

This Warrant Certificate shall not be entitled to any benefit under the Warrant Agreement or be valid or obligatory for any purpose, and no Warrant evidenced hereby may be exercised, unless this Warrant Certificate has been countersigned by the manual signature of the Warrant Agent.

[Signature page follows]

IN WITNESS WHEREOF, the Company and Warrant Agent have caused this instrument to be duly executed as of _____, 20__.

“Company”

ENDRA LIFE SCIENCES INC.

By: _____

Name: _____

Title: _____

“Warrant Agent”

CORPORATE STOCK TRANSFER, INC.

By: _____

Name: _____

Title: _____

Instructions for Exercise of Warrant

To exercise the Warrants evidenced hereby, the Holder must, by 5:00 p.m., New York City time, on the specified Exercise Date, deliver to the Warrant Agent at its stock transfer division, a certified or official bank check or a bank wire transfer in immediately available funds, in each case payable to the Company, in an amount equal to the Exercise Price in full for the Warrants exercised. In addition, the Holder must provide the information required below and deliver this Warrant Certificate to the Warrant Agent at the address set forth below and the Book-Entry Warrants to the Warrant Agent in its account with the Depository designated for such purpose. The Warrant Certificate and this Election to Purchase must be received by the Warrant Agent by 5:00 p.m., New York City time, on the specified Exercise Date.

ELECTION TO PURCHASE

TO BE EXECUTED IF WARRANT HOLDER DESIRES

TO EXERCISE THE WARRANTS EVIDENCED HEREBY

The undersigned hereby irrevocably elects to exercise, on _____, ____ (the "**Exercise Date**"), _____ Warrants, evidenced by this Warrant Certificate, to purchase, _____ shares (the "**Warrant Shares**") of Common Stock, par value of \$0.0001 per share (the "**Common Stock**") of ENDRA Life Sciences Inc., a Delaware corporation (the "**Company**"), and represents that on or before the Exercise Date:

such Holder has tendered payment for such Warrant Shares by certified or official bank check payable to the order of the Company c/o Corporate Stock Transfer, Inc., 3200 Cherry Creek Drive South, #430, Denver, Colorado 80209, or by bank wire transfer in immediately available funds payable to the Company at Account No. [], in each case in the amount of \$_____ in accordance with the terms hereof, or

[if permitted] the cancellation of such number of Warrant Shares as is necessary, in accordance with the formula set forth in subsection 3.3.8 of the Warrant Agreement, to exercise this Warrant with respect to the maximum number of Warrant Shares purchasable pursuant to the cashless exercise procedure set forth in subsection 3.3.8.

The undersigned requests that said number of Warrant Shares be in fully registered form, registered in such names and delivered, all as specified in accordance with the instructions set forth below.

If said number of Warrant Shares is less than all of the Warrant Shares purchasable hereunder, the undersigned requests that a new Warrant Certificate evidencing the remaining balance of the Warrants evidenced hereby be issued and delivered to the Holder of the Warrant Certificate unless otherwise specified in the instructions below.

Dated: _____, ____

Name: _____

(please print)

////-///-/////

(Insert Social Security or Other Identifying Number of Holder)

Address _____

Signature _____

This Warrant may only be exercised by presentation to the Warrant Agent at one of the following locations:

Corporate Stock Transfer, Inc.
3200 Cherry Creek Drive South, #430
Denver, Colorado 80209

By e-mail or fax at:

Corporate Stock Transfer, Inc.
3200 Cherry Creek Drive South, #430
Denver, Colorado 80209E-mail: knaughton@corporatestock.comFax: (303) 282-5800

The method of delivery of this Warrant Certificate is at the option and risk of the exercising Holder and the delivery of this Warrant Certificate will be deemed to be made only when actually received by the Warrant Agent. If delivery is by mail, registered mail with return receipt requested, properly insured, is recommended. In all cases, sufficient time should be allowed to ensure timely delivery.

Instructions as to form and delivery of Warrant Shares and/or Warrant Certificates

Name in which Warrant Shares are to be registered if other than in the name of the Holder of this Warrant Certificate:

(Name)

Address to which Warrant Shares are to be mailed if other than to the address of the Holder of this Warrant Certificate as shown on the books of the Warrant Agent:

(Street Address)

(City and State)(Zip Code)

Name in which Warrant Certificate evidencing unexercised Warrants, if any, is to be registered if other than in the name of the Holder of this Warrant Certificate:

(Name)

Address to which certificate representing unexercised Warrants, if any, is to be mailed if other than to the address of the Holder of this Warrant Certificate as shown on the books of the Warrant Agent:

(Street Address)

(City and State)(Zip Code)

Dated: _____

Signature: _____

Signature must conform in all respects to the name of the Holder as specified on the face of this Warrant Certificate. If Warrant Shares, or a Warrant Certificate evidencing unexercised Warrants, are to be issued in a name other than that of the Holder hereof or are to be delivered to an address other than the address of such Holder as shown on the books of the Warrant Agent, the above signature must be guaranteed by an Eligible Guarantor Institution (as that term is defined in Rule 17Ad-15 of the Securities Exchange Act of 1934, as amended).

SIGNATURE GUARANTEE

Name of Firm _____

Address _____

Tel.: _____

Authorized Signature _____

Name _____

Title _____

Dated: _____, 20__

ASSIGNMENT

(FORM OF ASSIGNMENT TO BE EXECUTED IF WARRANT HOLDER
DESIRES TO TRANSFER WARRANTS EVIDENCED HEREBY)

FOR VALUE RECEIVED, _____ HEREBY SELL(S), ASSIGN(S) AND TRANSFER(S) UNTO:

(Name of Assignee)

(Street Address)

(City and State)(Zip Code)

(Social Security or Other Identifying Number of Assignee)

the rights represented by the within Warrant Certificate and does hereby irrevocably constitute and appoint _____ Attorney to transfer said Warrant Certificate on the books of the Warrant Agent with full power of substitution in the premises.

Dated: _____

Signature: _____

Signature must conform in all respects to the name of the Holder as specified on the face of this Warrant Certificate. If Warrant Shares, or a Warrant Certificate evidencing unexercised Warrants, are to be issued in a name other than that of the Holder hereof or are to be delivered to an address other than the address of such Holder as shown on the books of the Warrant Agent, the above signature must be guaranteed by a an Eligible Guarantor Institution (as that term is defined in Rule 17Ad-15 of the Securities Exchange Act of 1934, as amended).

SIGNATURE GUARANTEE

Name of Firm _____

Address _____

Tel.: _____

Authorized Signature _____

Name _____

Title _____

Dated: _____, 20__

FORM OF SPECIMEN UNIT CERTIFICATE

NUMBER

U- _____

UNITS

SEE REVERSE FOR CERTAIN
DEFINITIONS

ENDRA LIFE SCIENCES INC.

CUSIP [_____]

UNITS CONSISTING OF ONE SHARE OF COMMON STOCK AND
ONE WARRANT TO PURCHASE ONE SHARE OF COMMON STOCK

THIS CERTIFIES
THAT

is the owner of

_____ Units.

Each Unit ("*Unit*") consists of one (1) share of common stock, par value \$0.0001 per share ("*Common Stock*"), of ENDRA LIFE SCIENCES INC., a Delaware corporation (the "*Company*"), and one (1) warrant ("*Warrant*"). The Warrant entitles the holder to purchase one (1) share of Common Stock for \$[_____] per share (subject to adjustment). The Warrant will become exercisable on (i) the first trading day following the sixtieth (60th) day following the date of the prospectus filed in connection with the Company's initial public offering or (ii) such earlier date as Dougherty & Company LLC shall determine is acceptable, and will expire unless exercised before 5:00 p.m. New York City time on the date which is five (5) years from the date of the prospectus filed in connection with the Company's initial public offering of this Unit (the "*Expiration Date*").

The Common Stock and Warrant comprising each Unit shall begin to trade separately on (i) the first trading day following the sixtieth (60th) day following the date of the prospectus filed in connection with the Company's initial public offering or (ii) such earlier date as Dougherty & Company LLC shall determine is acceptable.

The terms of the Warrants are governed by a Warrant Agreement, dated as of [____], 2017, between the Company and Corporate Stock Transfer, Inc., as Warrant Agent, and are subject to the terms and provisions contained therein, all of which terms and provisions the holder of this certificate consents to by acceptance hereof. Copies of the Warrant Agreement are on file at the office of the Warrant Agent at 3200 Cherry Creek Drive South, #430, Denver, CO 80209 and are available to any Warrant holder on written request and without cost.

This certificate shall be governed by and construed under New York law. This certificate is not valid unless countersigned by the Transfer Agent and Registrar of the Company.

Witness the facsimile seal of the Company and the facsimile signature of its duly authorized officers.

[ENDRA LIFE SCIENCES INC.]

COUNTERSIGNED AND REGISTERED:
CORPORATE STOCK TRANSFER, INC.
TRANSFER AGENT AND REGISTRAR

BY:
AUTHORIZED OFFICER

By

(SIGNATURE)
CHIEF EXECUTIVE OFFICER

(SEAL)

(SIGNATURE)
SECRETARY

[REVERSE OF CERTIFICATE]

ENDRA LIFE SCIENCES INC.

The Company will furnish without charge to each stockholder who so requests, a statement of the powers, designations, preferences and relative, participating, optional or other special rights of each class of shares or series thereof of the Company and the qualifications, limitations, or restrictions of such preferences and/or rights. This certificate and the Units represented hereby are issued and shall be held subject to the terms and conditions applicable to the securities underlying and comprising the Units, including, as applicable, the Company's Certificate of Incorporation and all amendments thereto, the Warrant Agreement and resolutions of the Company's Board of Directors providing for the issue of securities (copies of which may be obtained from the secretary of the Company), to all of which the holder(s) of this certificate by acceptance hereof assents.

The following abbreviations, when used in the inscription on the face of this certificate, shall be construed as though they were written out in full according to applicable laws or regulations:

- TEN COM - as tenants in common
- TEN ENT - as tenants by the entireties
- JT TEN - as joint tenants with right of survivorship and not as tenants in common

UNIF GIFT MIN ACT- _____ Custodian _____
(Cust) (Minor)

under Uniform Gifts to Minors Act _____
(State)

Additional abbreviations may also be used though not in the above list.

For value received _____, hereby sell(s), assign(s) and transfer(s) unto

PLEASE INSERT SOCIAL SECURITY OR OTHER IDENTIFYING NUMBER OF ASSIGNEE(S)

(PLEASE PRINT OR TYPEWRITE NAME(S) AND ADDRESS(ES), INCLUDING ZIP CODE, OF ASSIGNEE(S))

Units represented by the within Certificate, and hereby irrevocably constitute(s) and appoint(s)

Attorney to transfer the said Units on the books of the within named Company with full power of substitution in the premises.

Dated:

NOTICE: THE SIGNATURE(S) TO THIS ASSIGNMENT MUST CORRESPOND WITH THE NAME AS WRITTEN UPON THE FACE OF THE CERTIFICATE IN EVERY PARTICULAR, WITHOUT ALTERATION OR ENLARGEMENT OR ANY CHANGE WHATEVER.

Signature(s) Guaranteed:

By _____

THE SIGNATURE(S) MUST BE GUARANTEED BY AN ELIGIBLE GUARANTOR INSTITUTION (BANKS, STOCKBROKERS, SAVINGS AND LOAN ASSOCIATIONS AND CREDIT UNIONS WITH MEMBERSHIP IN AN APPROVED SIGNATURE GUARANTEE MEDALLION PROGRAM, PURSUANT TO SEC RULE 17Ad-15).



K&L GATES LLP
HEARST TOWER
47TH FLOOR
214 NORTH TRYON STREET
CHARLOTTE, NC 28202
T 704.331.7400
F 704.331.7598
klgates.com

January 23, 2017

ENDRA Life Sciences Inc.
3600 Green Court, Suite 350
Ann Arbor, MI 48105

Ladies and Gentlemen:

We have acted as counsel to ENDRA Life Sciences Inc., a Delaware corporation (the "Company"), in connection with the filing by the Company of a Registration Statement on Form S-1 (File No. 333-214724) originally filed with the Securities and Exchange Commission (the "SEC") on November 21, 2016 and amended on December 6, 2016, December 15, 2016, December 16, 2016, December 19, 2016, January 20, 2017 and January 23, 2017 (as amended, the "Registration Statement") under the Securities Act of 1933, as amended (the "Securities Act"). The Registration Statement relates to the proposed issuance and sale by the Company ("Offering") of (i) units ("Units"), each consisting of (x) one share (each a "Share") of the Company's common stock, \$0.0001 par value per share ("Common Stock") and a (y) warrant (each a "Warrant") to purchase one share of Common Stock, to be issued under a warrant agreement, to be dated on or about the date of the first issuance of the applicable Warrants thereunder, by and between a warrant agent to be selected by the Company (the "Warrant Agent") and the Company, in substantially the form filed as an exhibit to the Registration Statement (the "Warrant Agreement"), (ii) the Shares included in the Units, (iii) the Warrants included in the Units, (iv) shares of Common Stock underlying the Warrants ("Warrant Shares"), (vi) a warrant ("Underwriter's Warrant"), issued to certain of the underwriters for the Offering to purchase shares of Common Stock and (vii) shares of Common Stock underlying the Underwriter's Warrant ("Underwriter's Warrant Shares"). The Units, the Shares, the Warrants, the Warrant Shares, the Underwriter's Warrant and the Underwriter's Warrant Shares are referred to herein, collectively, as the "Securities". The proposed maximum aggregate offering price of the Securities is \$29,044,000. The Securities are to be sold by the Company pursuant to an Underwriting Agreement by and between the Company and Dougherty & Company LLC, acting as the representative of the underwriters included therein (the "Underwriting Agreement").

You have requested our opinion as to the matters set forth below in connection with the issuance of the Securities. For purposes of rendering that opinion, we have examined: (i) the Registration Statement, (ii) the Underwriting Agreement, (iii) the Company's Third Amended and Restated Certificate of Incorporation, as amended (the "Charter"), (iv) the Company's Bylaws (the "Bylaws"), (v) the Company's stock, warrant and option ledgers, and (vi) the corporate actions of the Company's Board of Directors which authorize the issuance of the Securities. We have reviewed such other matters and made such other inquiries as we have deemed necessary to render the opinions expressed herein. For the purposes of this opinion letter, we have assumed that each document submitted to us is accurate and complete, that each such document that is an original is authentic, that each such document that is a copy conforms to an authentic original, the conformity to the original or final versions of the documents submitted to us as copies or drafts, including without limitation, the Charter and that all signatures on each such document are genuine.

In rendering our opinion below, we also have assumed that: (a) the Company will have sufficient authorized and unissued shares of Common Stock at the time of each issuance of a Warrant Share or an Underwriter's Warrant Share; (b) each Share, Warrant Share and Underwriter Warrant's Share will be evidenced by an appropriate certificate, duly executed and delivered or the Company's Board of Directors will adopt a resolution, providing that all shares of Common Stock shall be uncertificated in accordance with Section 158 of the Delaware General Corporation Law (the "DGCL"), prior to their issuance; (c) the issuance of each Share, Warrant Share and Underwriter's Warrant Share will be duly noted in the Company's stock ledger upon issuance; and (d) each of the Warrants, the Underwriter's Warrant and the Underwriting Agreement constitutes a valid and binding agreement of each of the parties thereto (other than the Company), enforceable against the parties thereto in accordance with its terms. We have further assumed the legal capacity of natural persons. We have not verified any of those assumptions.

Our opinion set forth below in the first sentence of numbered paragraph 1, the first sentence of numbered paragraph 3, the first sentence of numbered paragraph 5 and numbered paragraphs 2, 4 and 6 are limited to the DGCL. Our opinion set forth below in the second sentence of numbered paragraph 1, the second sentence of numbered paragraph 3 and the second sentence of numbered paragraph 5 are limited to the laws of the State of New York.

Based upon and subject to the foregoing, provided that the Registration Statement and any required post-effective amendment thereto have all become effective under the Securities Act and any related prospectus required by applicable law ("Prospectus") have been delivered and filed as required by such laws, it is our opinion that:

1. The Units have been duly authorized for issuance by the Company. The Units when issued, delivered and paid for as described in the Prospectus and the Underwriting Agreement, will constitute valid and binding obligations of the Company, enforceable against the Company in accordance with their terms, to deliver the Common Stock and Warrants underlying the Units upon the terms and conditions of the Underwriting Agreement.
 2. The Shares have been duly authorized for issuance by the Company and, when issued and paid for as described in the Prospectus and the Underwriting Agreement, will be validly issued, fully paid, and non-assessable.
 3. The Warrants have been duly authorized for issuance by the Company. Provided that the Warrant Agreement has been duly executed and delivered by the Warrant Agent and the Company and that Warrants have been duly executed and delivered by the Company and duly delivered to the purchasers thereof against payment therefor, the Warrants will constitute valid and binding obligations of the Company, enforceable against the Company in accordance with their terms subject to the effect of bankruptcy, insolvency, fraudulent transfer, reorganization, receivership, moratorium and other laws affecting the rights and remedies of creditors generally, and to the exercise of judicial discretion in accordance with general principles of equity (whether applied by a court of law or equity).
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4. The Warrant Shares have been duly authorized and, when issued and delivered by the Company against payment therefor, upon the exercise of the Warrants in accordance with the terms therein and the terms of the Warrant Agreement, will be validly issued, fully paid, and non-assessable.
5. The Underwriter's Warrant has been duly authorized for issuance by the Company. Provided that the Underwriter's Warrant has been duly executed and delivered by the Company and duly delivered to the purchaser thereof against payment therefor, then the Underwriter's Warrant, when issued and paid for as described in the Registration Statement and the Prospectus, will be a valid and binding obligation of the Company, enforceable against the Company in accordance with its terms, subject to the effect of bankruptcy, insolvency, fraudulent transfer, reorganization, receivership, moratorium and other laws affecting the rights and remedies of creditors generally, and to the exercise of judicial discretion in accordance with general principles of equity (whether applied by a court of law or equity).
6. The Underwriter Warrant Shares have been duly authorized and, when issued and delivered by the Company against payment therefor, upon the exercise of the Underwriter's Warrant in accordance with the terms therein, will be validly issued, fully paid, and non-assessable.

The opinions set forth above are subject to the following additional assumptions:

(a) The Registration Statement and any amendment thereto (including any post-effective amendment) will have become effective under the Securities Act, and such effectiveness shall not have been terminated, suspended or rescinded;

(b) All Securities offered pursuant to the Registration Statement will be issued and sold (i) in compliance with all applicable federal and state securities laws, rules and regulations and solely in the manner provided in the Registration Statement and the Prospectus and (ii) only upon payment of the consideration fixed therefor in accordance with the Underwriting Agreement, the Warrant Agreement and, if applicable, the Securities themselves, and there will not have occurred any change in law or fact affecting the validity of any of the opinions rendered herein with respect thereto; and

(c) To the extent that the obligations of the Company under any Warrant Agreement, or other agreement pursuant to which any Securities offered pursuant to the Registration Statement are to be issued or governed, including any amendment or supplement thereto, may be dependent upon such matters, we assume for purposes of this opinion letter that (i) each party to any such agreement other than the Company (including any applicable warrant agent or other party acting in a similar capacity with respect to any Securities) will be duly organized, validly existing and in good standing under the laws of its jurisdiction of organization; that each such other party will be duly qualified to engage in the activities contemplated thereby; (ii) each such agreement and the applicable Securities will have been duly authorized, executed and delivered by each such other party and will constitute the valid and binding obligations of each such other party, enforceable against each such other party in accordance with their terms; (iii) each such other party will be in compliance, with respect to acting in any capacity contemplated by any such agreement, with all applicable laws and regulations; and (iv) each such other party will have the requisite organizational and legal power and authority to perform its obligations under each such agreement.

We assume no obligation to update or supplement any of our opinions to reflect any changes of law or fact that may occur.

We hereby consent to the filing of this opinion letter with the SEC as Exhibit 5.1 to the Registration Statement. We also consent to the reference to our Firm under the caption "Legal Matters" in the Registration Statement and in the Prospectus. In giving our consent, we do not thereby admit that we are experts with respect to any part of the Registration Statement, the Prospectus or any Prospectus Supplement within the meaning of the term "expert", as used in Section 11 of the Securities Act or the rules and regulations promulgated thereunder, nor do we admit that we are in the category of persons whose consent is required under Section 7 of the Securities Act or the rules and regulations thereunder.

Very truly yours,

/s/ K&L Gates LLP

K&L Gates LLP
