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

**FORM 8-K**

**CURRENT REPORT**

**Pursuant to Section 13 or Section 15(d) of the Securities Exchange Act of 1934**

Date of Report (Date of earliest event reported): **October 28, 2019**

**GUARDION HEALTH SCIENCES, INC.**

(Exact name of registrant as specified in its charter)

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

**001-38861**  
(Commission  
File Number)

**44-4428421**  
(I.R.S. Employer  
Identification No.)

**15150 Avenue of Science, Suite 200  
San Diego, CA 92128**

(Address of principal executive offices, including zip code)

Registrant's telephone number, including area code: **(858) 605-9055**

Check the appropriate box below if the Form 8-K filing is intended to simultaneously satisfy the filing obligation of the registrant under any of the following provisions:

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

Securities registered pursuant to Section 12(b) of the Act:

<u>Title of each class</u>	<u>Trading Symbol(s)</u>	<u>Name of each exchange on which registered</u>
Common Stock, par value \$0.001 per share	GHSI	The NASDAQ Stock Market LLC

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

Emerging growth company

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

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

On October 30, 2019, Guardion Health Sciences, Inc. (the “Company”) consummated an underwritten public offering (the “Offering”) of (i) 22,800,000 shares of common stock, par value \$0.001 per share, of the Company (“Common Stock”), (ii) pre-funded warrants exercisable for 1,700,000 shares of Common Stock (the “Pre-Funded Warrants”), and (iii) Series B warrants to purchase up to an aggregate of 24,500,000 shares of Common Stock (the “Series B Warrants”). The Offering was conducted pursuant to an Underwriting Agreement, dated October 28, 2019 by and between the Company and Maxim Group LLC and WallachBeth Capital, LLC, acting as the representatives (the “Representatives”) of the several underwriters named therein (the “Underwriting Agreement”).

The public offering price was \$0.332 per share of Common Stock and \$0.01 per accompanying Series B Warrant. Each Series B Warrant sold with the shares of Common Stock represents the right to purchase one share of Common Stock at an exercise price of \$0.342 per share. Currently, the Company does not have a sufficient number of authorized shares of Common Stock to cover the shares of Common Stock issuable upon the exercise of the Series B Warrants. As a result, the Series B Warrants will become exercisable only after the Company effectuates an amendment to its Charter to either (i) increase the number of authorized shares of common stock or (ii) implement a reverse stock split with respect to the shares of common stock (either, a “Charter Amendment”). The Series B Warrants are exercisable any time up to the date that is five years after the Charter Amendment is effectuated. There can be no assurances that the Company’s stockholders will approve a Charter Amendment, and therefore, the Series B Warrants may never become exercisable.

The public offering was \$0.322 per Pre-Funded Warrant and \$0.01 per accompanying Series B Warrant. The Pre-Funded Warrants were sold to purchasers whose purchase of shares of Common Stock in the Offering would otherwise result in the purchaser, together with its affiliates and certain related parties, beneficially owning more than 4.99% of the Company’s outstanding Common Stock immediately following the consummation of the Offering, in lieu of shares of Common Stock. Each Pre-Funded Warrant represented the right to purchase one share of Common Stock at an exercise price of \$0.01 per share. The Pre-Funded Warrants were exercised on October 30, 2019 upon which the Company issued 1,700,000 shares of Common Stock. The shares of Common Stock, Pre-Funded Warrants and Series B Warrants were issued separately and are immediately separable upon issuance.

On October 30, 2019, the Company entered into a Warrant Agreement with VStock Transfer, LLC (“VStock”), appointing VStock as Warrant Agent for the Series B Warrants for purposes of the Offering (the “Warrant Agreement”). A registration statement on Form S-1 (File No. 333-234322) (the “Registration Statement”) relating to the Offering was initially filed with the U.S. Securities and Exchange Commission (the “SEC”) on October 25, 2019, and was declared effective on October 28, 2019. The gross proceeds to the Company from the Offering, before deducting underwriting discounts and commissions and other estimated Offering expenses, and excluding the exercise of any Pre-Funded Warrants or Series B Warrants, were approximately \$8.4 million.

The Underwriting Agreement, the Warrant Agreement (including the form of Series B Warrant) and Pre-Funded Warrant are filed as Exhibits 1.1, 10.1 and 4.1, respectively, to this Current Report on Form 8-K, and the description of the terms of the Underwriting Agreement, the Warrant Agreement, the Series B Warrants and the Pre-Funded Warrants are qualified in their entirety by reference to such exhibits.

### Item 8.01 Other Events.

On October 28, 2019, the Company issued a press release announcing the pricing of the Offering, a copy of which is filed as Exhibit 99.1. On October 30, 2019, the Company issued a press release announcing the closing of the Offering, a copy of which is filed as Exhibit 99.2.

### Item 9.01 Financial Statements and Exhibits.

(d) Exhibits

<b>Exhibit Number</b>	<b>Description</b>
1.1	<a href="#">Underwriting Agreement, dated October 28, 2019 between the Company and the Representatives</a>
4.1	<a href="#">Form of Pre-Funded Warrant</a>
10.1	<a href="#">Warrant Agreement, including form of Series B Warrant, made as of October 30, 2019, between the Company and VStock</a>
99.1	<a href="#">Press Release dated October 28, 2019</a>
99.2	<a href="#">Press Release dated October 30, 2019</a>

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**SIGNATURES**

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

**GUARDION HEALTH SCIENCES, INC.**

By: /s/ MICHAEL FAVISH  
Name: Michael Favish  
Title: Chief Executive Officer

Date: October 31, 2019

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**22,800,000 SHARES OF COMMON STOCK,  
1,700,000 PRE-FUNDED WARRANTS (EXERCISABLE FOR 1,700,000 SHARES)**

**AND**

**24,500,000 SERIES B WARRANTS (EXERCISABLE FOR 24,500,000 SHARES)**

**OF**

**GUARDION HEALTH SCIENCES, INC.**

**UNDERWRITING AGREEMENT**

October 28, 2019

Maxim Group LLC  
Investment Banking  
405 Lexington Avenue, 2nd Fl.  
New York, New York 10174

WallachBeth Capital, LLC  
Harborside Financial Center Plaza 5  
185 Hudson Street, Suite 1410  
Jersey City, New Jersey 07311  
*As Representatives of the  
several Underwriters, if any, named in Schedule 1 hereto*

Ladies and Gentlemen:

The undersigned, GUARDION HEALTH SCIENCES, INC., a company incorporated under the laws of Delaware (collectively with its subsidiaries and affiliates, including, without limitation, all entities disclosed or described in the Registration Statement as being subsidiaries or affiliates of GUARDION HEALTH SCIENCES, INC., the "Company"), hereby confirms its agreement (this "Agreement") with the several underwriters (such underwriters, including the Representatives (as defined below), the "Underwriters" and each an "Underwriter") named in Schedule 1 hereto for which MAXIM GROUP LLC ("Maxim") and WALLACHBETH CAPITAL, LLC ("WallachBeth") are acting as Representatives to the several Underwriters (in such capacity, the "Representatives" and each a "Representatives" and if there are no Underwriters other than the Representatives, references to multiple Underwriters shall be disregarded and the term Representatives as used herein shall have the same meaning as Underwriters) on the terms and conditions set forth herein.

It is understood that the several Underwriters are to make a public offering of the Public Securities (as defined below) as soon as the Representatives deem it advisable to do so. The Public Securities are to be initially offered to the public at the public offering price set forth in the Prospectus. The Representatives may from time to time thereafter change the public offering price and other selling terms.

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It is further understood that you will act as the Representatives for the Underwriters in the offering and sale of the Closing Securities and, if any, the Option Securities in accordance with this Agreement.

1. Nature and Purchase of Securities.

(a) Upon the terms and subject to the conditions set forth herein, the Company agrees to sell in the aggregate (i) **22,800,000** shares of common stock of the Company, par value \$0.001 per share (the "Common Stock"), (ii) pre-funded warrants in the form attached hereto as Exhibit A (the "Pre-Funded Warrants") exercisable for an aggregate of **1,700,000** shares of Common Stock, and (iii) Series B warrants in the form attached hereto as Exhibit B-1 (the "Traditional Warrants") exercisable for an aggregate of **24,500,000** shares of Common Stock, and each Underwriter agrees to purchase, severally and not jointly, at the Closing, the following securities of the Company:

(i) the number of shares of Common Stock (the "Closing Shares") set forth opposite the name of such Underwriter on Schedule 1 hereof;

(ii) Pre-Funded Warrants to purchase up to the number of shares of Common Stock set forth opposite the name of such Underwriter on Schedule 1 hereof, which shall have an exercise price equal to **\$0.01** (the "Pre-Funded Warrant Shares") (subject to adjustment therein) (collectively, with the Traditional Warrants delivered at Closing, the "Closing Warrants" and, collectively with the Closing Shares, the "Closing Securities"); and

(iii) Traditional Warrants to purchase up to the number of shares of Common Stock and shares underlying the Pre-Funded Warrants set forth opposite the name of such Underwriter on Schedule 1 hereof (the "Traditional Warrant Shares"), which shall have an exercise price of **\$0.342** (subject to adjustment as provided therein).

"Warrants" means, collectively, the Pre-Funded Warrants and the Traditional Warrants. "Warrant Shares" means the shares of Common Stock issuable upon exercise of the Warrants.

(b) The aggregate purchase price for the Closing Securities shall equal the amount set forth opposite the name of such Underwriter on Schedule 1 hereto (the "Closing Purchase Price"). The purchase price shall be **\$0.30544** per Closing Share (92% of the per Closing Share public offering price, which is \$0.332 per share) (the "Share Purchase Price"), **\$0.29624** per Pre-Funded Warrant (92% of the per Pre-Funded Warrant public offering price, which is \$0.322 per Pre-Funded Warrant) and **\$0.0092** per Traditional Warrant (92% of the per Traditional Warrant public offering price, which is \$0.01 per Traditional Warrant) (the "Warrant Purchase Price").

(c) On the Closing Date, each Underwriter shall deliver or cause to be delivered to the Company, via wire transfer, immediately available funds equal to such Underwriter's Closing Purchase Price and the Company shall deliver to, or as directed by, such Underwriter its respective Closing Securities and the Company shall deliver the other items required pursuant to this Agreement deliverable at the Closing. Upon satisfaction of the covenants and conditions set forth herein, the Closing shall occur at the offices at the offices of Gracin & Marlow, LLP, located at 405 Lexington Avenue, 26th Floor, New York, New York 10174 ("Representatives Counsel") or such other location (including remotely by facsimile or other electronic transmission) as the Company and Representatives shall mutually agree. The Closing Securities and, if any, the Option Securities are collectively referred to as the "Public Securities". The Public Securities shall be issued directly by the Company and shall have the rights and privileges described in the Registration Statement, the Pricing Prospectus and the Prospectus referred to below. The Public Securities are to be offered initially to the public at the offering price set forth on the cover page of the Prospectus (the "Offering").

(d) The Company acknowledges and agrees that, with respect to any Notice(s) of Exercise (as defined in the Pre-Funded Warrants) delivered by a Holder (as defined in the Pre-Funded Warrants) on or prior to 12:00 p.m. (New York City time) on the Closing Date, which Notice(s) of Exercise may be delivered at any time after the time of execution of this Agreement, the Company shall deliver the Warrant Shares with respect to the Pre-Funded Warrants subject to such notice(s) to the Holder by 4:00 p.m. (New York City time) on the Closing Date. The Company acknowledges and agrees that the Holders are third-party beneficiaries of this covenant of the Company.

(e) Over-allotment Option.

(i) For the purposes of covering any over-allotments in connection with the distribution and sale of the Closing Securities, the Representatives are hereby granted an option (the "Over-Allotment Option") to purchase, in the aggregate, up to **3,675,000** shares of Common Stock (the "Option Shares"), only to the extent that the Company has sufficient authorized shares to issue any such Option Shares, representing 15% of the Closing Shares and Pre-Funded Warrant Shares and Traditional Warrants to purchase up to **3,675,000** shares of Common Stock representing 15% of the Traditional Warrant Shares (the "Option Warrants" and, collectively with the Option Shares, the "Option Securities") which may be purchased in any combination of Option Shares and/or Option Warrants at the Share Purchase Price and/or Warrant Purchase Price, respectively.

(ii) In connection with an exercise of the Over-Allotment Option, (A) the purchase price to be paid for any Option Shares is equal to the product of the Share Purchase Price multiplied by the number of Option Shares to be purchased and (B) the purchase price to be paid for any Option Warrants is equal to the product of the Warrant Purchase Price multiplied by the number of Option Warrants to be purchased (the aggregate purchase price to be paid on an Option Closing Date, the "Option Closing Purchase Price").

(iii) The Over-Allotment Option granted pursuant to this Section 1(e)(iii) may be exercised by the Representatives as to all (at any time) or any part (from time to time) of the Option Securities within 45 days after the date of execution of this Agreement (the "Execution Date"). An Underwriter will not be under any obligation to purchase any Option Securities prior to the exercise of the Over-Allotment Option by the Representatives. The Over-Allotment Option granted hereby may be exercised by the giving of oral notice to the Company from the Representatives, which must be confirmed in writing by overnight mail or facsimile or other electronic transmission setting forth the number of Option Shares and/or Option Warrants to be purchased and the date and time for delivery of and payment for the Option Securities (each, an "Option Closing Date"), which will not be later than the earlier of (i) 45 days after the Execution Date and (ii) two (2) full Business Days after the date of the notice or such other time as shall be agreed upon by the Company and the Representatives, at the offices of Gracin & Marlow, LLP, located at 405 Lexington Avenue, 26th Floor, New York, New York 10174, or at such other location (including remotely by facsimile or other electronic transmission) as shall be agreed upon by the Company and the Representatives. If such delivery and payment for the Option Securities does not occur on the Closing Date, each Option Closing Date will be as set forth in the notice. Upon exercise of the Over-Allotment Option, the Company will become obligated to convey to the Underwriters, and, subject to the terms and conditions set forth herein, the Underwriters will become obligated to purchase, the number of Option Shares and/or Option Warrants specified in such notice. The Representatives may cancel the Over-Allotment Option at any time prior to the expiration of the Over-Allotment Option by written notice to the Company.

(f) Representatives' Warrant.

(i) Warrant Amount; Term. The Company hereby agrees to issue and sell to the Representatives (and/or their designees) on the Closing Date for an aggregate purchase price of \$100.00 warrants (the "Representatives' Warrants") for the purchase of an aggregate of **1,960,000** shares of Common Stock (which is equal to an aggregate of 8% of the shares of Common Stock and the Pre-Funded Warrant Shares included in the Closing Securities sold in the Offering), with fifty percent (50%) of the Representatives' Warrants being issued to Maxim and fifty percent (50%) of the Representatives' Warrants being issued to WallachBeth, The Representatives' Warrants shall be issuable pursuant to the Representatives' Warrant Agreement in the form attached hereto as Exhibit C (the "Representatives' Warrant Agreement") and exercisable, in whole or in part, commencing on the later of (i) the date which is one hundred eighty (180) days after the effective date of the Registration Statement (the "Effective Date") and (ii) the date on which the Company effectuates the Amendment (as defined below) to its Amended Certificate of Incorporation as described in Section 3(u) of this Agreement, and expiring on the five-year anniversary of the Effective Date at an initial exercise price per share of Common Stock of **\$0.4446**, which is equal to 130% of the public offering price of each Closing Share. The Representatives' Warrant Agreement and the shares of Common Stock issuable upon exercise thereof are sometimes hereinafter referred to together as the "Representatives' Securities." The Representatives understand and agree that there are significant restrictions pursuant to FINRA Rule 5110 against transferring the Representatives' Warrant and the underlying shares of Common Stock during the one hundred eighty (180) days after the Effective Date and by its acceptance thereof each shall agree that it will not sell, transfer, assign, pledge or hypothecate the Representatives' Warrant Agreement, or any portion thereof, or be the subject of any hedging, short sale, derivative, put or call transaction that would result in the effective economic disposition of such securities for a period of one hundred eighty (180) days following the Effective Date to anyone other than (i) an Underwriter or a selected dealer in connection with the Offering, or (ii) a bona fide officer or partner of the Representatives or of any such Underwriter or selected dealer; and only if any such transferee agrees to the foregoing lock-up restrictions.

(ii) Delivery. Delivery of the Representatives' Warrant Agreement shall be made on the Closing Date and shall be issued in the name or names and in such authorized denominations as the Representatives may request.

2. Representations and Warranties of the Company. The Company represents and warrants to the Underwriters as of the Applicable Time (as defined below) and as of the Closing Date and as of the Option Closing Date, as follows (unless otherwise indicated, all references to the Company in this Section 2 shall refer to the Company, its subsidiaries and its variable interest entities):

(a) Filing of Registration Statement.

(i) Pursuant to the Securities Act.

(A) The Company has filed with the U.S. Securities and Exchange Commission (the "Commission") a registration statement, and an amendment or amendments thereto, on Form S-1 (File No. 333-234322), including any related prospectus or prospectuses, for the registration of the Public Securities and the Representatives' Securities under the Securities Act of 1933, as amended (the "Securities Act"), which registration statement and amendment or amendments have been prepared by the Company in conformity in all material respects with the requirements of the Securities Act and the rules and regulations of the Commission under the Securities Act (the "Securities Act Regulations") and will contain all material statements that are required to be stated therein in accordance with the Securities Act and the Securities Act Regulations. Except as the context may otherwise require, such registration statement, as amended, on file with the Commission at the time the registration statement became effective (including the Preliminary Prospectus included in the registration statement, financial statements, schedules, exhibits and all other documents filed as a part thereof or incorporated therein by reference and all information deemed to be a part thereof as of the Effective Date pursuant to paragraph (b) of Rule 430A of the Securities Act Regulations (the "Rule 430A Information")), is referred to herein as the "Registration Statement." If the Company files any registration statement pursuant to Rule 462(b) of the Securities Act Regulations, then after such filing, the term "Registration Statement" shall include such registration statement filed pursuant to Rule 462(b). The Registration Statement has been declared effective by the Commission on the date hereof.

(B) Each prospectus used prior to the effectiveness of the Registration Statement, and each prospectus that omitted the Rule 430A Information that was used after such effectiveness and prior to the execution and delivery of this Agreement, is herein called a “Preliminary Prospectus.” The Preliminary Prospectus that was included in the Registration Statement immediately prior to the Applicable Time is hereinafter called the “Pricing Prospectus.” The final prospectus in the form first furnished to the Underwriters for use in the Offering is hereinafter called the “Prospectus.” Any reference to the “most recent Preliminary Prospectus” shall be deemed to refer to the latest Preliminary Prospectus included in the Registration Statement.

(C) “Applicable Time” means 9:10 a.m., Eastern time, on the date of this Agreement.

(ii) Pursuant to the Exchange Act. The Company has filed with the Commission a Form 8-A providing for the registration pursuant to Section 12(b) under the Securities Exchange Act of 1934, as amended (the “Exchange Act”), of the Common Stock. The registration of the Common Stock under the Exchange Act has been declared effective by the Commission on or prior to the date hereof. The Company has taken no action designed to, or likely to have the effect of, terminating the registration of the Common Stock under the Exchange Act, nor has the Company received any notification that the Commission is contemplating terminating such registration.

(b) Stock Exchange Listing. The Common Stock and the shares of Common Stock issuable upon exercise of the Pre-Funded Warrants, the Traditional Warrants and the Representatives’ Warrants have been approved for listing on The NASDAQ Capital Market (the “Exchange”), subject to official notice of issuance, and the Company has taken no action designed to, or likely to have the effect of, delisting the Common Stock from the Exchange, nor has the Company received any notification that the Company is not in compliance with the listing or maintenance requirements of the Exchange or that the Exchange is contemplating terminating such listing.

(c) No Stop Orders, etc. Neither the Commission nor, to the Company’s knowledge, any state regulatory authority has issued any order preventing or suspending the use of the Registration Statement, any Preliminary Prospectus or the Prospectus or has instituted or, to the Company’s knowledge, threatened to institute, any proceedings with respect to such an order. The Company has complied with each request (if any) from the Commission for additional information.

(d) Disclosures in Registration Statement.

(i) Compliance with Securities Act and 10b-5 Representation.

(A) Each of the Registration Statement and any post-effective amendment thereto, at the time it became effective, complied in all material respects with the requirements of the Securities Act and the Securities Act Regulations. Each Preliminary Prospectus, including the prospectus filed as part of the Registration Statement as originally filed or as part of any amendment or supplement thereto, and the Prospectus, at the time each was filed with the Commission, complied in all material respects with the requirements of the Securities Act and the Securities Act Regulations. Each Preliminary Prospectus delivered to the Underwriters for use in connection with this Offering and the Prospectus was or will be identical to the electronically transmitted copies thereof filed with the Commission pursuant to EDGAR, except to the extent permitted by Regulation S-T.

(B) Neither the Registration Statement nor any amendment thereto, at its effective time, as of the Applicable Time, at the Closing Date or at any Option Closing Date, contained, contains or will contain an untrue statement of a material fact or omitted, omits or will omit to state a material fact required to be stated therein or necessary to make the statements therein not misleading.

(C) The Pricing Prospectus, as of the Applicable Time, at the Closing Date or at any Option Closing Date, did not, does not and will not include an untrue statement of a material fact or omit to state a material fact necessary in order to make the statements therein, in the light of the circumstances under which they were made, not misleading; provided, however, that this representation and warranty shall not apply to statements made or statements omitted in reliance upon and in conformity with written information furnished to the Company with respect to the Underwriters by the Representatives expressly for use in the Registration Statement, the Pricing Prospectus or the Prospectus or any amendment thereof or supplement thereto. The parties acknowledge and agree that such information provided by or on behalf of any Underwriter specifically for inclusion in the Preliminary Prospectus, the Registration Statement or the Prospectus consists solely of the information set forth in the following sections of the Preliminary Prospectus, the Registration Statement and the Prospectus: “Underwriting—Electronic Distribution” and “Underwriting—Price Stabilization, Short Positions and Penalty Bids” (the “Underwriters’ Information”).

(D) Neither the Prospectus nor any amendment or supplement thereto (including any prospectus wrapper), as of its issue date, at the time of any filing with the Commission pursuant to Rule 424(b), at the Closing Date or at any Option Closing Date, included, includes or will include an untrue statement of a material fact or omitted, omits or will omit to state a material fact necessary in order to make the statements therein, in the light of the circumstances under which they were made, not misleading; provided, however, that this representation and warranty shall not apply to the Underwriters’ Information.

(ii) Disclosure of Agreements. The agreements and documents described in the Registration Statement, the Pricing Prospectus and the Prospectus conform in all material respects to the descriptions thereof contained therein and there are no agreements or other documents required by the Securities Act and the Securities Act Regulations to be described in the Registration Statement, the Pricing Prospectus and the Prospectus or to be filed with the Commission as exhibits to the Registration Statement, that have not been so described or filed. Each agreement or other instrument (however characterized or described) to which the Company is a party or by which it is or may be bound or affected and (i) that is referred to in the Registration Statement, the Pricing Prospectus and the Prospectus, and (ii) is material to the Company’s business, has been duly authorized and validly executed by the Company, is in full force and effect in all material respects and is enforceable against the Company and, to the Company’s knowledge, the other parties thereto, in accordance with its terms, except (x) as such enforceability may be limited by bankruptcy, insolvency, reorganization or similar laws affecting creditors’ rights generally, (y) as enforceability of any indemnification or contribution provision may be limited under the federal and state securities laws, and (z) that the remedy of specific performance and injunctive and other forms of equitable relief may be subject to the equitable defenses and to the discretion of the court before which any proceeding therefor may be brought. None of such agreements or instruments has been assigned by the Company, and neither the Company nor, to the Company’s knowledge, any other party is in material default thereunder and, to the Company’s knowledge, no event has occurred that, with the lapse of time or the giving of notice, or both, would constitute a material default thereunder, except as disclosed in the Registration Statement, the General Disclosure Package and the Prospectus. Performance by the Company of the material provisions of such agreements or instruments will not result in a violation of any existing applicable law, rule, regulation, judgment, order or decree of any governmental agency or court, domestic or foreign, having jurisdiction over the Company or any of its assets or business (each, a “Governmental Entity”), including, without limitation, those relating to environmental laws and regulations, that would reasonably be expected to constitute a Material Adverse Change (as hereinafter defined).

(iii) Prior Securities Transactions. Since January 1, 2016, no securities of the Company have been sold by the Company or by or on behalf of, or for the benefit of, any person or persons controlling, controlled by or under common control with the Company, except as disclosed in the Registration Statement, the Pricing Prospectus and the Preliminary Prospectus.

(iv) Regulations. The disclosures in the Registration Statement, the Pricing Prospectus and the Prospectus concerning the effects of federal, state, local and all foreign laws, rules and regulations relating to the Company's business as currently contemplated are correct in all material respects and no other such regulations are required to be disclosed in the Registration Statement, the Pricing Prospectus and the Prospectus which are not so disclosed.

(e) Changes after Dates in Registration Statement.

(i) No Material Adverse Change. Since the respective dates as of which information is given in the Registration Statement, the Pricing Prospectus and the Prospectus, except as otherwise specifically stated therein: (i) there has been no material adverse change in the financial position or results of operations of the Company, nor to the Company's knowledge, any change or development that, singularly or in the aggregate, would involve a material adverse change, in or affecting the condition (financial or otherwise), results of operations, business, assets or prospects of the Company and its Subsidiaries, taken as a whole, and there has been no material adverse change on the Company's ability to perform in any material respect on a timely basis its obligations under any Transaction Document (a "Material Adverse Change"); (ii) there have been no material transactions entered into by the Company, other than as contemplated pursuant to this Agreement; and (iii) no officer or director of the Company has resigned from any position with the Company. "Transaction Documents" means this Agreement and all exhibits and schedules hereto, the Pre-Funded Warrants, the Traditional Warrants, the Lock-Up Agreements, the Representatives' Warrant Agreement and any other documents or agreements executed in connection with the transactions contemplated hereunder.

(ii) Recent Securities Transactions, etc. Subsequent to the respective dates as of which information is given in the Registration Statement, the Pricing Prospectus and the Prospectus, and except as may otherwise be indicated or contemplated herein or disclosed in the Registration Statement, the Pricing Prospectus and the Prospectus, the Company has not: (i) issued any securities (other than (i) grants under any stock compensation plan and (ii) shares of common stock issued upon exercise or conversion of option, warrants or convertible securities described in the Registration Statement, the Pricing Prospectus and the Prospectus) or incurred any liability or obligation, direct or contingent, for borrowed money; or (ii) declared or paid any dividend or made any other distribution on or in respect to its capital stock.

(f) Independent Accountants. To the knowledge of the Company, Weinberg & Company, P.A. (the "Auditor"), whose report is filed with the Commission as part of the Registration Statement, the Pricing Prospectus and the Prospectus, is an independent registered public accounting firm as required by the Securities Act and the Securities Act Regulations and the Public Company Accounting Oversight Board. Except as may otherwise be disclosed in the Registration Statement, the Pricing Prospectus and the Prospectus, the Auditor has not, during the periods covered by the financial statements included in the Registration Statement, the Pricing Prospectus and the Prospectus, provided to the Company any non-audit services, as such term is used in Section 10A(g) of the Exchange Act.

(g) SEC Reports; Financial Statements, etc. The Company has filed all reports, schedules, forms, statements and other documents required to be filed by the Company under the Securities Act and the Exchange Act, including pursuant to Section 13(a) or 15(d) thereof, for the two years preceding the date hereof (or such shorter period as the Company was required by law or regulation to file such material) (the foregoing materials, including the exhibits thereto and documents incorporated by reference therein, together with the Prospectus, being collectively referred to herein as the “SEC Reports”) on a timely basis or has received a valid extension of such time of filing and has filed any such SEC Reports prior to the expiration of any such extension. As of their respective dates, the SEC Reports complied in all material respects with the requirements of the Securities Act and the Exchange Act, as applicable, and none of the SEC Reports, when filed, contained any untrue statement of a material fact or omitted to state a material fact required to be stated therein or necessary in order to make the statements therein, in the light of the circumstances under which they were made, not misleading. The Company has never been an issuer subject to Rule 144(i) under the Securities Act. The financial statements, including the notes thereto and supporting schedules included in the Registration Statement, the Pricing Prospectus and the Prospectus, fairly present in all material respects the financial position and the results of operations of the Company at the dates and for the periods to which they apply; and such financial statements have been prepared in conformity with United States generally accepted accounting principles applied on a consistent basis during the periods involved (“GAAP”), consistently applied throughout the periods involved (provided that unaudited interim financial statements are subject to year-end audit adjustments that are not expected to be material in the aggregate and do not contain all footnotes required by GAAP); and the supporting schedules included in the Registration Statement present fairly in all material respects the information required to be stated therein. Except as included therein, no historical or pro forma financial statements are required to be included in the Registration Statement, the Pricing Prospectus or the Prospectus under the Securities Act or the Securities Act Regulations. The pro forma and pro forma as adjusted financial information and the related notes, if any, included in the Registration Statement, the Pricing Prospectus and the Prospectus have been properly compiled and prepared in all material respects in accordance with the applicable requirements of the Securities Act and the Securities Act Regulations and present fairly in all material respects the information shown therein, and the assumptions used in the preparation thereof are reasonable and the adjustments used therein are appropriate to give effect to the transactions and circumstances referred to therein. All disclosures contained in the Registration Statement, the Pricing Prospectus or the Prospectus regarding “non-GAAP financial measures” (as such term is defined by the rules and regulations of the Commission), if any, comply with Regulation G of the Exchange Act and Item 10 of Regulation S-K of the Securities Act, to the extent applicable. Each of the Registration Statement, the Pricing Prospectus and the Prospectus discloses all material off-balance sheet transactions, arrangements, obligations (including contingent obligations), and other relationships of the Company with unconsolidated entities or other persons that may have a material current or future effect on the Company’s financial condition, changes in financial condition, results of operations, liquidity, capital expenditures, capital resources, or significant components of revenues or expenses. Except as disclosed in the Registration Statement, the Pricing Prospectus and the Prospectus, (i) the Company has not incurred any material liabilities or obligations, direct or contingent, or entered into any material transactions other than in the ordinary course of business, (ii) the Company has not declared or paid any dividends or made any distribution of any kind with respect to its capital stock, (iii) there has not been any change in the capital stock of the Company (other than (A) grants under any stock compensation plan and (B) shares of common stock issued upon exercise or conversion of option, warrants or convertible securities described in the Registration Statement, the Pricing Prospectus and the Prospectus), and (iv) there has not been any Material Adverse Change in the Company’s long-term or short-term debt.

(h) Material Changes; Undisclosed Events, Liabilities or Developments. Since the date of the latest audited financial statements included within the Registration Statement and the SEC Reports, except as specifically disclosed in a subsequent SEC Report filed prior to the date hereof, (i) there has been no event, occurrence or development that has had or that could reasonably be expected to result in a Material Adverse Change, (ii) the Company has not incurred any liabilities (contingent or otherwise) other than (A) trade payables and accrued expenses incurred in the ordinary course of business consistent with past practice and (B) liabilities not required to be reflected in the Company's financial statements pursuant to GAAP or disclosed in filings made with the Commission, (iii) the Company has not altered its method of accounting, (iv) the Company has not declared or made any dividend or distribution of cash or other property to its stockholders or purchased, redeemed or made any agreements to purchase or redeem any shares of its capital stock and (v) the Company has not issued any equity securities to any officer, director or Affiliate, except pursuant to existing Company stock option plans and the issuance of Common Stock Equivalents as disclosed in the SEC Reports. The Company does not have pending before the Commission any request for confidential treatment of information. Except for the issuance of the Public Securities contemplated by this Agreement, no event, liability, fact, circumstance, occurrence or development has occurred or exists or is reasonably expected to occur or exist with respect to the Company or its Subsidiaries or their respective businesses, prospects, properties, operations, assets or financial condition that would be required to be disclosed by the Company under applicable securities laws at the time this representation is made or deemed made that has not been publicly disclosed at least one trading day prior to the date that this representation is made. Unless otherwise disclosed in an SEC Report filed prior to the date hereof, the Company has not: (i) issued any securities or incurred any liability or obligation, direct or contingent, for borrowed money; or (ii) declared or paid any dividend or made any other distribution on or in respect to its capital stock.

(i) Authorized Capital; Options, etc. The Company had, at the date or dates indicated in the Registration Statement, the Pricing Prospectus and the Prospectus, the duly authorized, issued and outstanding capitalization as set forth therein. Based on the assumptions stated in the Registration Statement, the Pricing Prospectus and the Prospectus, the Company will have on the Closing Date the adjusted stock capitalization set forth therein. Except as set forth in, or contemplated by, the Registration Statement, the Pricing Prospectus and the Prospectus, on the Effective Date, as of the Applicable Time, on the Closing Date and any Option Closing Date, there will be no stock options, warrants, or other rights to purchase or otherwise acquire any authorized, but unissued shares of Common Stock of the Company or any security convertible or exercisable into shares of Common Stock of the Company, or any contracts or commitments to issue or sell shares of Common Stock or any such options, warrants, rights or convertible securities. There are no outstanding securities or instruments of the Company or any Subsidiary that contain any redemption or similar provisions, and there are no contracts, commitments, understandings or arrangements by which the Company or any Subsidiary is or may become bound to redeem a security of the Company or such Subsidiary. The Company does not have any stock appreciation rights or "phantom stock" plans or agreements or any similar plan or agreement. No further approval or authorization of any stockholder, the Board of Directors or others is required for the issuance and sale of the Public Securities or the Representatives' Securities. There are no stockholders agreements, voting agreements or other similar agreements with respect to the Company's capital stock to which the Company is a party or, to the knowledge of the Company, between or among any of the Company's stockholders.

(j) Valid Issuance of Securities, etc.

(i) Outstanding Securities. All issued and outstanding securities of the Company issued prior to the transactions contemplated by this Agreement have been duly authorized and validly issued and are fully paid and non-assessable; the holders thereof have no rights of rescission with respect thereto, and are not subject to personal liability by reason of being such holders; and except as disclosed in the Registration Statement, the Pricing Prospectus and the Prospectus, none of such securities were issued in violation of the preemptive rights of any holders of any security of the Company or similar contractual rights granted by the Company. The authorized shares of Common Stock, Company preferred stock and other securities of the Company to be outstanding upon consummation of the Offering conform in all material respects to all statements relating thereto contained in the Registration Statement, the Pricing Prospectus and the Prospectus. The offers and sales of the outstanding shares of Common Stock were at all relevant times either registered under the Securities Act and the applicable state securities or "blue sky" laws or, based in part on the representations and warranties of the purchasers of such shares, exempt from such registration requirements.

(ii) Securities Sold Pursuant to this Agreement. The Public Securities and Representatives' Securities have been duly authorized for issuance and sale and, when issued and paid for, will be validly issued, fully paid and non-assessable free and clear of all liens, charges, mortgages or other encumbrances; the holders thereof are not and will not be subject to personal liability by reason of being such holders; the Public Securities and Representatives' Securities are not and will not be subject to the preemptive rights of any holders of any security of the Company or similar contractual rights granted by the Company; and all corporate action required to be taken for the authorization, issuance and sale of the Public Securities and Representatives' Securities has been duly and validly taken; the shares of Common Stock issuable upon exercise of the Warrants and Representatives' Warrants (the "Underlying Common Stock") have been duly authorized and reserved for issuance by all necessary corporate action on the part of the Company and when paid for and issued in accordance with such Representatives' Warrants or exercised on a cashless basis as set forth in such Warrants or Representatives' Warrants, as the case may be, such shares of Underlying Common Stock will be validly issued, fully paid and non-assessable; the Public Securities and Representatives' Securities conform in all material respects to all statements with respect thereto contained in the Registration Statement, the Pricing Prospectus, the General Disclosure Package and the Prospectus.

(k) Registration Rights of Third Parties. Except as set forth in the Registration Statement, the Pricing Prospectus and the Prospectus, no holders of any securities of the Company or any rights exercisable for or convertible or exchangeable into securities of the Company have the right to require the Company to register any such securities of the Company under the Securities Act or to include any such securities in a registration statement to be filed by the Company (except for any such rights that have been waived).

(l) Validity and Binding Effect of Agreements. This Agreement, the Pre-Funded Warrants, the Traditional Warrants and the Representatives' Warrant Agreement have been duly and validly authorized by the Company, and, when executed and delivered, will constitute, the valid and binding agreements of the Company, enforceable against the Company in accordance with their respective terms, except: (i) as such enforceability may be limited by bankruptcy, insolvency, reorganization or similar laws affecting creditors' rights generally; (ii) as enforceability of any indemnification or contribution provision may be limited under the federal and state securities laws; and (iii) that the remedy of specific performance and injunctive and other forms of equitable relief may be subject to the equitable defenses and to the discretion of the court before which any proceeding therefor may be brought.

(m) No Conflicts, etc. The execution, delivery and performance by the Company of this Agreement, the Pre-Funded Warrants, the Traditional Warrants and the Representatives' Warrant Agreement and all ancillary documents, the consummation by the Company of the transactions herein and therein contemplated and the compliance by the Company with the terms hereof and thereof do not and will not, with or without the giving of notice or the lapse of time or both: (i) result in a breach of, or conflict with any of the terms and provisions of, or constitute a material default under, or result in the creation, modification, termination or imposition of any lien, charge, mortgage or other encumbrance upon any property or assets of the Company pursuant to the terms of any agreement or instrument to which the Company is a party; (ii) result in any violation of the provisions of the Company's Certificate of Incorporation (as the same may be amended or restated from time to time, the "Charter") or the by-laws of the Company (as the same may be amended or restated from time to time, the "Bylaws"); or (iii) violate any existing applicable law, rule, regulation, judgment, order or decree of any Governmental Entity as of the date hereof, except in the cases of clauses (i) and (iii) for such breaches, conflicts or violations which would not reasonably be expected to have a Material Adverse Change.

(n) Regulatory. Except as described in the Registration Statement, the Pricing Prospectus and the Prospectus or as would not reasonably be expected to result, individually or in the aggregate, in a Material Adverse Change: (i) the Company has not received notice from any Governmental Entity alleging or asserting noncompliance with any Applicable Laws (as defined in clause (ii) below) or Authorizations (as defined in clause (iii) below); (ii) the Company is conducting and has conducted its business and operations in compliance with federal, state or foreign statutes, laws, ordinances, rules and regulations applicable to the Company (collectively, "Applicable Laws"); (iii) the Company possesses all licenses, certificates, approvals, clearances, consents, authorizations, qualifications, registrations, permits, and supplements or amendments thereto required by any such Applicable Laws and/or to carry on its businesses as now conducted ("Authorizations") and such Authorizations are valid and in full force and effect and the Company is not in violation of any term of any such Authorizations, except for any violations which would not reasonably be expected to have a Material Adverse Change; (iv) the Company has not received notice of any claim, action, suit, proceeding, hearing, enforcement, investigation, arbitration or other action from any Governmental Entity or third party alleging that any product, operation or activity is in violation of any Applicable Laws or Authorizations or has any knowledge that any such Governmental Entity or third party is considering any such claim, litigation, arbitration, action, suit, investigation or proceeding, nor, to the Company's knowledge, has there been any material noncompliance with or violation of any Applicable Laws by the Company that could reasonably be expected to require the issuance of any such communication or result in an investigation, corrective action, or enforcement action by any Governmental Entity; and (v) the Company has not received notice that any Governmental Entity has taken, is taking or intends to take action to limit, suspend, modify or revoke any Authorizations or has any knowledge that any such Governmental Entity has threatened or is considering such action or any other action that would result in a Material Adverse Change. Neither the Company nor, to the Company's knowledge, any of its directors, officers, employees or agents has been convicted of any crime under any Applicable Laws. All initial patient studies and testing conducted by or on behalf of the Company were and, if still ongoing, are being conducted in material compliance with all Applicable Laws in the jurisdictions in which they are being conducted. Except as disclosed in the Registration Statement, the Pricing Prospectus and the Prospectus, the Company has not received any written notices or statements from the U.S. Food and Drug Administration, the European Medicines Agency or any other governmental agency or authority requiring, requesting or suggesting that Lumeza-Z is not a regulated medical food or that MapcatSF is not a Class I medical device. The Company has not been informed by the FDA that the FDA will prohibit the marketing, sale, license or use in the United States of any product as it is currently marketed and sold. The Company has no knowledge of any regulatory actions that will adversely impact the manufacturer of its products or its products.

(o) Reserved.

(p) No Defaults; Violations. No material default exists in the due performance and observance of any term, covenant or condition of any material license, contract, indenture, mortgage, deed of trust, note, loan or credit agreement, or any other agreement or instrument evidencing an obligation for borrowed money, or any other material agreement or instrument to which the Company is a party or by which the Company may be bound or to which any of the properties or assets of the Company is subject. The Company is not (i) in violation of any term or provision of its Charter or Bylaws, or (ii) in violation of any franchise, license, permit, applicable law, rule, regulation, judgment or decree of any Governmental Entity applicable to the Company, except for such defaults or violations the consequences of which would not reasonably be expected to result in a Material Adverse Change.

(q) Corporate Power; Licenses; Consents.

(i) Conduct of Business. The Company has all requisite corporate power and authority, and has all necessary authorizations, approvals, orders, licenses, certificates and permits of and from all governmental regulatory officials and bodies that it needs as of the date hereof to conduct its business purpose as described in the Registration Statement, the Pricing Prospectus and the Prospectus, except where such failure to have such necessary authorizations, approvals, orders, licenses, certificates and permits would not reasonably be expected to result in a Material Adverse Change.

(ii) Transactions Contemplated Herein. The Company has all corporate power and authority to enter into this Agreement, the Pre-Funded Warrants, the Traditional Warrants and the Representatives' Warrant Agreement and to carry out the provisions and conditions hereof, and all consents, authorizations, approvals and orders required in connection therewith have been obtained. No consent, authorization or order of, and no filing with, any court, government agency or other body is required for the valid issuance, sale and delivery of the Public Securities and the consummation of the transactions and agreements contemplated by this Agreement, the Pre-Funded Warrants, the Traditional Warrants and the Representatives' Warrant Agreement and as contemplated by the Registration Statement, the Pricing Prospectus and the Prospectus, except with respect to applicable federal and state securities laws and the rules and regulations of the Financial Industry Regulatory Authority, Inc. ("FINRA") and of the Exchange.

(r) D&O Questionnaires. To the Company's knowledge, all information contained in the questionnaires (the "Questionnaires") completed by each of the Company's directors and officers immediately prior to the Offering (the "Insiders") as supplemented by all information concerning the Company's directors, officers and principal stockholders as described in the Registration Statement, the Pricing Prospectus and the Prospectus, provided to the Underwriters, is true and correct in all material respects and the Company has not become aware of any information which would cause the information disclosed in the Questionnaires to become materially inaccurate and incorrect.

(s) Litigation; Governmental Proceedings. There is no material action, suit, proceeding, inquiry, arbitration, investigation, litigation or governmental proceeding pending or, to the Company's knowledge, threatened against, or involving the Company or its property or, to the Company's knowledge, any executive officer or director which has not been disclosed in the Registration Statement, the Pricing Prospectus and the Prospectus which is required to be disclosed, in each case which individually or in the aggregate, is reasonably expected to result in a Material Adverse Change.

(t) Subsidiaries. All of the Subsidiaries of the Company are set forth on Exhibit 21.1 to the Company's Form 10-K for the fiscal year ended December 31, 2018 (each a "Subsidiary" and collectively, the "Subsidiaries"). The Company owns, directly or indirectly, all of the capital stock or other equity interests of each Subsidiary free and clear of any liens, charges, mortgages or other encumbrances, and all of the issued and outstanding shares of capital stock of each Subsidiary are validly issued and are fully paid, non-assessable and free of preemptive and similar rights to subscribe for or purchase securities.

(u) Good Standing. The Company and each Subsidiary have been duly organized and validly existing as a corporation and is in good standing under the laws of the State of Delaware as of the date hereof, and is duly qualified to do business and is in good standing in each other jurisdiction in which its ownership or lease of property or the conduct of business requires such qualification, except where the failure to qualify, singularly or in the aggregate, would not have or reasonably be expected to result in a Material Adverse Change. Neither the Company nor any Subsidiary is in violation nor default of any of the provisions of its respective Articles of Incorporation, bylaws or other organizational or charter documents.

(v) Insurance. The Company carries or is entitled to the benefits of insurance, with, to the Company's knowledge, reputable insurers, and in such amounts and covering such risks which the Company believes are reasonably adequate, and all such insurance is in full force and effect. The Company has no reason to believe that it will not be able (i) to renew its existing insurance coverage as and when such policies expire or (ii) to obtain comparable coverage from similar institutions as may be necessary or appropriate to conduct its business as now conducted and at a cost that would not reasonably be expected to result in a Material Adverse Change.

(w) Transactions Affecting Disclosure to FINRA.

(i) Finder's Fees. Except as described in the Registration Statement, the Pricing Prospectus and the Prospectus, there are no claims, payments, arrangements, agreements or understandings relating to the payment of a finder's, consulting or origination fee by the Company or any Insider with respect to the sale of the Public Securities hereunder or any other arrangements, agreements or understandings of the Company or, to the Company's knowledge, any of its stockholders that may affect the Underwriters' compensation, as determined by FINRA.

(ii) Payments Within 180 Days. Except as described in the Registration Statement, the Pricing Prospectus and the Prospectus, the Company has not made any direct or indirect payments (in cash, securities or otherwise) to: (i) any person, as a finder's fee, consulting fee or otherwise, in consideration of such person raising capital for the Company or introducing to the Company persons who raised or provided capital to the Company; (ii) any FINRA member; or (iii) any person or entity that has any direct or indirect affiliation or association with any FINRA member, within the 180-day period immediately preceding the original filing of the Registration Statement, other than the payment to the Underwriters as provided hereunder in connection with the Offering.

(iii) Use of Proceeds. None of the net proceeds of the Offering will be paid by the Company to any participating FINRA member or its affiliates, except as specifically authorized herein.

(iv) FINRA Affiliation. There is no (i) officer or director of the Company, (ii) to the Company's knowledge, beneficial owner of 5% or more of any class of the Company's securities or (iii) to the Company's knowledge, beneficial owner of the Company's unregistered equity securities which were acquired during the 180-day period immediately preceding the original filing of the Registration Statement that, in each case, is an affiliate or associated person of a FINRA member participating in the Offering (as determined in accordance with the rules and regulations of FINRA).

(v) Information. All information provided by the Company in its FINRA Questionnaire to Representatives Counsel specifically for use by Representatives Counsel in connection with its Public Offering System filings (and related disclosure) with FINRA is true, correct and complete in all material respects.

(x) Foreign Corrupt Practices Act. Neither the Company nor, to the Company's knowledge, any director, officer, agent, employee or affiliate of the Company or any other person acting on behalf of the Company, has, directly or indirectly, given or agreed to give any money, gift or similar benefit (other than legal price concessions to customers in the ordinary course of business) to any customer, supplier, employee or agent of a customer or supplier, or official or employee of any governmental agency or instrumentality of any government (domestic or foreign) or any political party or candidate for office (domestic or foreign) or other person who was, is, or may be in a position to help or hinder the business of the Company (or assist it in connection with any actual or proposed transaction) that (i) might subject the Company to any damage or penalty in any civil, criminal or governmental litigation or proceeding, (ii) if not given in the past, might have had a Material Adverse Change or (iii) if not continued in the future, might adversely affect the assets, business, operations or prospects of the Company. The Company has taken reasonable steps to ensure that its accounting controls and procedures are sufficient to cause the Company to comply in all material respects with the Foreign Corrupt Practices Act of 1977, as amended.

(y) Compliance with OFAC. Neither the Company nor, to the Company's knowledge, any director, officer, agent, employee or affiliate of the Company or any other person acting on behalf of the Company, is currently subject to any U.S. sanctions administered by the Office of Foreign Assets Control of the U.S. Department of the Treasury ("OFAC"), and the Company will not, directly or indirectly, use the proceeds of the Offering hereunder, or lend, contribute or otherwise make available such proceeds to any subsidiary, joint venture partner or other person or entity, for the purpose of financing the activities of any person currently subject to any U.S. sanctions administered by OFAC.

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

(aa) Environmental Laws. The Company and its Subsidiaries (i) are in compliance with all federal, state, local and foreign laws relating to pollution or protection of human health or the environment (including ambient air, surface water, groundwater, land surface or subsurface strata), including laws relating to emissions, discharges, releases or threatened releases of chemicals, pollutants, contaminants, or toxic or hazardous substances or wastes (collectively, “Hazardous Materials”) into the environment, or otherwise relating to the manufacture, processing, distribution, use, treatment, storage, disposal, transport or handling of Hazardous Materials, as well as all authorizations, codes, decrees, demands, or demand letters, injunctions, judgments, licenses, notices or notice letters, orders, permits, plans or regulations, issued, entered, promulgated or approved thereunder (“Environmental Laws”); (ii) have received all permits licenses or other approvals required of them under applicable Environmental Laws to conduct their respective businesses; and (iii) are in compliance with all terms and conditions of any such permit, license or approval where in each clause (i), (ii) and (iii), the failure to so comply could be reasonably expected to have, individually or in the aggregate, a Material Adverse Change.

(bb) Officers’ Certificate. Any certificate signed by any duly authorized officer of the Company and delivered to the Representatives or to Representatives Counsel shall be deemed a representation and warranty by the Company to the Underwriters as to the matters covered thereby.

(cc) Lock-Up Agreements. Schedule 2 hereto contains a complete and accurate list of the Company’s officers, and directors and a list of certain shareholders, as agreed to between the Company and the Representatives (collectively, the “Lock-Up Parties”). The Company has caused each of the Lock-Up Parties to deliver to the Representatives an executed Lock-Up Agreement, in the form attached hereto as Exhibit D (the “Lock-Up Agreement”), prior to the execution of this Agreement.

(dd) Related Party Transactions. There are no business relationships or related party transactions involving the Company or any other person required to be described in the Registration Statement, the Pricing Prospectus and the Prospectus that have not been described as required.

(ee) Board of Directors. The Board of Directors of the Company is comprised of the persons set forth under the heading of the Pricing Prospectus and the Prospectus captioned “Directors and Executive Officers.” The qualifications of the persons serving as board members and the overall composition of the board comply with the Exchange Act, the Exchange Act Regulations, the Sarbanes-Oxley Act of 2002 and the rules promulgated thereunder (the “Sarbanes-Oxley Act”) applicable to the Company and the listing rules of the Exchange. At least one member of the Audit Committee of the Board of Directors of the Company qualifies as an “audit committee financial expert,” as such term is defined under Regulation S-K and the listing rules of the Exchange. In addition, at least a majority of the persons serving on the Board of Directors qualify as “independent,” as defined under the listing rules of the Exchange.

(ff) Sarbanes-Oxley Compliance.

(i) Disclosure Controls. The Company has developed and currently maintains disclosure controls and procedures that will comply with Rule 13a-15 or 15d-15 under the Exchange Act Regulations applicable to it, and except as disclosed in the Registration Statement, the Pricing Prospectus and the Prospectus, such controls and procedures are effective to ensure that all material information concerning the Company will be made known on a timely basis to the individuals responsible for the preparation of the Company's Exchange Act filings and other public disclosure documents.

(ii) Compliance. The Company is, or at the Applicable Time and on the Closing Date will be, in material compliance with the provisions of the Sarbanes-Oxley Act applicable to it, and has implemented or will implement such programs and taken reasonable steps to ensure the Company's future compliance (not later than the relevant statutory and regulatory deadlines therefor) with all of the material provisions of the Sarbanes-Oxley Act.

(gg) Accounting Controls. The Company maintains systems of "internal control over financial reporting" (as defined under Rules 13a-15 and 15d-15 under the Exchange Act Regulations) that comply in all material respects with the requirements of the Exchange Act and have been designed by, or under the supervision of, its principal executive and principal financial officers, or persons performing similar functions, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with GAAP, including, but not limited to, internal accounting controls sufficient to provide reasonable assurance that (i) transactions are executed in accordance with management's general or specific authorizations; (ii) transactions are recorded as necessary to permit preparation of financial statements in conformity with GAAP and to maintain asset accountability; (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 the existing assets at reasonable intervals and appropriate action is taken with respect to any differences. Except as disclosed in the Registration Statement, the Pricing Prospectus and the Prospectus, the Company is not aware of any material weaknesses in its internal controls. The Company's auditors and the Audit Committee of the Board of Directors of the Company have been advised of: (i) all significant deficiencies and material weaknesses, if any, in the design or operation of internal controls over financial reporting which are known to the Company's management and that have adversely affected or are reasonably likely to adversely affect the Company's ability to record, process, summarize and report financial information; and (ii) any fraud, if any, known to the Company's management, whether or not material, that involves management or other employees who have a significant role in the Company's internal controls over financial reporting.

(hh) No Investment Company Status. The Company is not and, after giving effect to the Offering and the application of the proceeds thereof as described in the Registration Statement, the Pricing Prospectus and the Prospectus, will not be, required to register as an "investment company," as defined in the Investment Company Act of 1940, as amended.

(ii) No Labor Disputes. No labor dispute with the employees of the Company exists or, to the knowledge of the Company, is imminent. None of the Company's or its Subsidiaries' employees is a member of a union that relates to such employee's relationship with the Company or such Subsidiary, and neither the Company nor any of its Subsidiaries is a party to a collective bargaining agreement, and the Company and its Subsidiaries believe that their relationships with their employees are good. To the knowledge of the Company, no executive officer of the Company or any Subsidiary, is, or is now expected to be, in violation of any material term of any employment contract, confidentiality, disclosure or proprietary information agreement or non-competition agreement, or any other contract or agreement or any restrictive covenant in favor of any third party, and the continued employment of each such executive officer does not subject the Company or any of its Subsidiaries to any liability with respect to any of the foregoing matters that would reasonably be expected to have a Material Adverse Change. The Company and its Subsidiaries are in compliance with all U.S. federal, state, local and foreign laws and regulations relating to employment and employment practices, terms and conditions of employment and wages and hours, except where the failure to be in compliance could not, individually or in the aggregate, reasonably be expected to have a Material Adverse Change.

(jj) Intellectual Property Rights. To the Company's knowledge, the Company has, or can acquire on reasonable terms, ownership of and/or license to, or otherwise has the right to use, all inventions, know-how (including trade secrets and other unpatented and/or unpatentable proprietary or confidential information, systems or procedures), patents and patent rights trademarks, service marks and trade names, copyrights, (collectively "Intellectual Property") material to carrying on its businesses as described in the Pricing Prospectus. The Company has not received any correspondence relating to any Intellectual Property, including notice of: (A) infringement or misappropriation of, or conflict with, any Intellectual Property of a third party; (B) asserted rights of others with respect to any Intellectual Property of the Company; or (C) assertions that any Intellectual Property of the Company is invalid or otherwise inadequate to protect the interest of the Company, that in each case (if the subject of any unfavorable decision, ruling or finding), individually or in the aggregate, would have or would reasonably be expected to have a Material Adverse Change. To the Company's knowledge, there are no third parties who have been able to establish any material rights to any Intellectual Property, except for the retained rights of the owners or licensors of any Intellectual Property that is licensed to the Company. There is no pending or, to the Company's knowledge, threatened action, suit, proceeding or claim by others: (A) challenging the validity, enforceability or scope of any Intellectual Property of the Company or (B) challenging the Company's rights in or to any Intellectual Property or (C) that the Company materially infringes, misappropriates or otherwise violates or conflicts with any Intellectual Property or other proprietary rights of others. The Company has complied in all material respects with the terms of each agreement described in the Registration Statement, Pricing Prospectus or Prospectus pursuant to which any Intellectual Property is licensed to the Company, and all such agreements related to products currently made or sold by the Company, or to product candidates currently under development, are in full force and effect.

(kk) Taxes. The Company has filed all returns (as hereinafter defined) required to be filed with taxing authorities prior to the date hereof or has duly obtained extensions of time for the filing thereof. Except as described in the Registration Statement, the Pricing Prospectus and the Prospectus, the Company has paid all taxes (as hereinafter defined) shown as due on such returns that were filed and has paid all taxes imposed on or assessed against the Company, except for such exceptions as would not reasonably be expected, individually or in the aggregate, to have a Material Adverse Change. The provisions for taxes payable, if any, shown on the financial statements filed with or as part of the Registration Statement are sufficient for all accrued and unpaid taxes, whether or not disputed, and for all periods to and including the dates of such consolidated financial statements. Except as disclosed in writing to the Underwriters, (i) no issues have been raised (and are currently pending) by any taxing authority in connection with any of the returns or taxes asserted as due from the Company, and (ii) no waivers of statutes of limitation with respect to the returns or collection of taxes have been given by or requested from the Company. The term "taxes" mean all federal, state, local, foreign and other net income, gross income, gross receipts, sales, use, ad valorem, transfer, franchise, profits, license, lease, service, service use, withholding, payroll, employment, excise, severance, stamp, occupation, premium, property, windfall profits, customs, duties or other taxes, fees, assessments or charges of any kind whatever, together with any interest and any penalties, additions to tax or additional amounts with respect thereto. The term "returns" means all returns, declarations, reports, statements and other documents required to be filed in respect to taxes.

(ll) Employee Benefit Laws. The Company is not in violation of or has not received notice of any violation with respect to any federal or state law relating to discrimination in the hiring, promotion or pay of employees, nor any applicable federal or state wages and hours law, nor any state law precluding the denial of credit due to the neighborhood in which a property is situated, the violation of any of which could reasonably be expected to have a Material Adverse Change.

(mm) Stock Option Plans. Each stock option granted by the Company under the Company's stock option plan was granted (i) in accordance with the terms of the Company's stock option plan and (ii) with an exercise price at least equal to the fair market value of the Common Stock on the date such stock option would be considered granted under GAAP and applicable law. No stock option granted under the Company's stock option plan has been backdated. The Company has not knowingly granted, and there is no and has been no Company policy or practice to knowingly grant, stock options prior to, or otherwise knowingly coordinate the grant of stock options with, the release or other public announcement of material information regarding the Company or its Subsidiaries or their financial results or prospects.

(nn) Industry Data. The statistical and market-related data included in each of the Registration Statement, the Pricing Prospectus and the Prospectus are based on or derived from sources that the Company reasonably and in good faith believes are reliable and accurate or represent the Company's good faith estimates that are made on the basis of data derived from such sources.

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

(pp) Export and Import Laws. The Company, and, to the Company's knowledge, each of its affiliates, and any director, officer, agent or employee of, or other person associated with or acting on behalf of the Company, has acted at all times in compliance with applicable Export and Import Laws (as defined below) and there are no claims, complaints, charges, investigations or proceedings pending or expected or, to the knowledge of the Company, threatened between the Company or any of its Subsidiaries and any governmental authority under any Export or Import Laws. The term "Export and Import Laws" means the Arms Export Control Act, the International Traffic in Arms Regulations, the Export Administration Act of 1979, as amended, the Export Administration Regulations, and all other laws and regulations of the United States government regulating the provision of services to non-U.S. parties or the export and import of articles or information from and to the United States of America, and all similar laws and regulations of any foreign government regulating the provision of services to parties not of the foreign country or the export and import of articles and information from and to the foreign country to parties not of the foreign country.

(qq) Integration. Neither the Company, nor any of its affiliates, nor any person acting on its or their behalf has, directly or indirectly, made any offers or sales of any security or solicited any offers to buy any security, under circumstances that would cause the Offering to be integrated with prior offerings by the Company for purposes of the Securities Act that would require the registration of any such securities under the Securities Act.

(rr) [Reserved]

(ss) Confidentiality and Non-Competition. To the Company's knowledge, no director, officer, key employee or consultant of the Company is subject to any confidentiality, non-disclosure, non-competition agreement or non-solicitation agreement with any employer or prior employer that could reasonably be expected to materially affect his ability to be and act in his respective capacity of the Company or be expected to result in a Material Adverse Change.

(tt) Smaller Reporting Company. As of the time of filing of the Registration Statement, the Company was a "smaller reporting company," as defined in Rule 12b-2 of the Exchange Act Regulations

3. Covenants of the Company. The Company covenants and agrees as follows:

(a) Amendments to Registration Statement. The Company shall deliver to the Representatives, prior to filing, any amendment or supplement to the Registration Statement or Prospectus proposed to be filed after the Effective Date and not file any such amendment or supplement to which the Representatives shall reasonably object in writing; provided however, that this Section 3(a) shall not be applicable with respect to any supplements to the Registration Statement filed solely for the purpose of supplementing the Registration Statement or Prospectus with a report filed with the Commission by the Company pursuant to the Exchange Act.

(b) Federal Securities Laws.

(i) Compliance. The Company shall comply with the requirements of Rule 430A of the Securities Act Regulations, and will notify the Representatives promptly, and confirm the notice in writing, (i) when any post-effective amendment to the Registration Statement shall become effective or any amendment or supplement to the Prospectus shall have been filed; (ii) of the receipt of any comments from the Commission; (iii) of any request by the Commission for any amendment to the Registration Statement or any amendment or supplement to the Prospectus or for additional information; (iv) of the issuance by the Commission of any stop order suspending the effectiveness of the Registration Statement or any post-effective amendment or of any order preventing or suspending the use of any Preliminary Prospectus or the Prospectus, or of the suspension of the qualification of the Public Securities and Representatives' Securities for offering or sale in any jurisdiction, or of the initiation or, to the Company's knowledge, threatening, of any proceedings for any of such purposes or of any examination pursuant to Section 8(d) or 8(e) of the Securities Act concerning the Registration Statement and (v) if the Company becomes the subject of a proceeding under Section 8A of the Securities Act in connection with the Offering of the Public Securities and Representatives' Securities. The Company shall effect all filings required under Rule 424(b) of the Securities Act Regulations, in the manner and within the time period required by Rule 424(b) (without reliance on Rule 424(b)(8)), and shall take such steps as it deems necessary to ascertain promptly whether the form of prospectus transmitted for filing under Rule 424(b) was received for filing by the Commission and, in the event that it was not, it will promptly file such prospectus. The Company shall use its commercially reasonable efforts to prevent the issuance of any stop order, prevention or suspension and, if any such order is issued, to obtain the lifting thereof at the earliest possible moment.

(ii) Continued Compliance. The Company shall comply with the Securities Act, the Securities Act Regulations, the Exchange Act and the Exchange Act Regulations so as to permit the completion of the distribution of the Public Securities as contemplated in this Agreement and in the Registration Statement, the Pricing Prospectus and the Prospectus. If at any time when a prospectus relating to the Public Securities is (or, but for the exception afforded by Rule 172 of the Securities Act Regulations ("Rule 172"), would be) required by the Securities Act to be delivered in connection with sales of the Public Securities, any event shall occur or condition shall exist as a result of which it is necessary, in the opinion of counsel for the Underwriters or for the Company, to (i) amend the Registration Statement in order that the Registration Statement will not include an untrue statement of a material fact or omit to state a material fact required to be stated therein or necessary to make the statements therein not misleading; (ii) amend or supplement the Pricing Prospectus or the Prospectus in order that the Pricing Prospectus or the Prospectus, as the case may be, will not include any untrue statement of a material fact or omit to state a material fact necessary in order to make the statements therein not misleading in the light of the circumstances existing at the time it is delivered to a purchaser or (iii) amend the Registration Statement or amend or supplement the Pricing Prospectus or the Prospectus, as the case may be, in order to comply with the requirements of the Securities Act or the Securities Act Regulations, the Company will promptly (A) give the Representatives notice of such event; (B) prepare any amendment or supplement as may be necessary to correct such statement or omission or to make the Registration Statement, the Pricing Prospectus or the Prospectus comply with such requirements and, a reasonable amount of time prior to any proposed filing or use, furnish the Representatives with copies of any such amendment or supplement and (C) file with the Commission any such amendment or supplement; provided that the Company shall not file or use any such amendment or supplement to which the Representatives or counsel for the Underwriters shall reasonably object. The Company will furnish to the Underwriters such number of copies of such amendment or supplement as the Underwriters may reasonably request. The Company has given the Representatives notice of any filings made pursuant to the Exchange Act or the Exchange Act Regulations within 48 hours prior to the Applicable Time. The Company shall give the Representatives notice of its intention to make any such filing from the Applicable Time until the later of the Closing Date and the exercise in full or expiration of the Over-allotment Option specified in Section 10 hereof and will furnish the Representatives with copies of the related document(s) a reasonable amount of time prior to such proposed filing, as the case may be, and will not file or use any such document to which the Representatives or counsel for the Underwriters shall reasonably object.

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

(d) Delivery to the Underwriters of Prospectuses. The Company has delivered or made available or will deliver or make available to each Underwriter, without charge, as many copies of each Preliminary Prospectus as such Underwriter reasonably requested, and the Company hereby consents to the use of such copies for purposes permitted by the Securities Act. The Company will furnish to each Underwriter, without charge, during the period when a prospectus relating to the Public Securities is (or, but for the exception afforded by Rule 172, would be) required to be delivered under the Securities Act, such number of copies of the Prospectus (as amended or supplemented) as such Underwriter may reasonably request. The Prospectus and any amendments or supplements thereto furnished to the Underwriters will be identical to the electronically transmitted copies thereof filed with the Commission pursuant to EDGAR, except to the extent permitted by Regulation S-T.

(e) Effectiveness and Events Requiring Notice to the Representatives. The Company shall use its commercially reasonable efforts to cause the Registration Statement to remain effective with a current prospectus through and including the expiration date of the Warrants and Representatives Warrants (or the date all Warrants have been exercised or duly called, if earlier), and shall notify the Representatives immediately and confirm the notice in writing: (i) of the effectiveness of the Registration Statement and any amendment thereto; (ii) of the issuance by the Commission of any stop order or of the initiation, or to the Company's knowledge, the threatening, of any proceeding for that purpose; (iii) of the issuance by any state securities commission of any proceedings for the suspension of the qualification of the Public Securities for offering or sale in any jurisdiction or of the initiation, or to the Company's knowledge, the threatening, of any proceeding for that purpose; (iv) of the mailing and delivery to the Commission for filing of any amendment or supplement to the Registration Statement or Prospectus; (v) of the receipt of any comments or request for any additional information from the Commission; and (vi) of the happening of any event during the period described in this Section 3(e) that, in the judgment of the Company, makes any statement of a material fact made in the Registration Statement, the Pricing Prospectus or the Prospectus untrue or that requires the making of any changes in (a) the Registration Statement in order to make the statements therein not misleading, or (b) in the Pricing Prospectus or the Prospectus in order to make the statements therein, in light of the circumstances under which they were made, not misleading. If the Commission or any state securities commission shall enter a stop order or suspend such qualification at any time, the Company shall use its commercially reasonable efforts to obtain promptly the lifting of such order.

(f) Listing. The Company shall use its commercially reasonable efforts to maintain the listing of the Common Stock on the Exchange for three (3) years after the date of this Agreement.

(g) Reports to the Representatives; Transfer Agent.

(i) Periodic Reports, etc. For a period of one year after the date of this Agreement, the Company shall furnish or make available to the Representatives copies of such financial statements and other periodic and special reports as the Company from time to time furnishes generally to holders of any class of its securities and also promptly furnish or make available to the Representatives: (i) a copy of each periodic report the Company shall be required to file with the Commission under the Exchange Act and the Exchange Act Regulations; (ii) a copy of every press release and every news item and article with respect to the Company or its affairs which was released by the Company and filed or furnished on a Current Report on Form 8-K; (iii) a copy of each Current Report on Form 8-K prepared and filed by the Company; and (iv) five copies of each registration statement filed by the Company under the Securities Act. Documents filed with the Commission pursuant to its EDGAR system or otherwise filed with the Commission or made publicly available shall be deemed to have been delivered to the Representatives pursuant to this Section 3(g)(i).

(ii) Transfer Agent. The Company shall maintain a transfer agent and registrar for the Common Stock.

(h) Payment of Expenses.

(i) General Expenses Related to the Offering. The Company hereby agrees to pay on each of the Closing Date and the Option Closing Date, to the extent not paid at the Closing Date, expenses incident to the performance of the obligations of the Company under this Agreement, including: (a) all filing fees and communication expenses relating to the registration of the Public Securities to be sold in the Offering with the Commission; (b) all actual Public Offering Filing System filing fees associated with the review of the Offering by FINRA; (c) all fees and expenses relating to the listing of the Common Stock on the Exchange; (d) all fees, expenses and disbursements, if any, relating to the registration or qualification of the Public Securities under the "blue sky" securities laws of such states and other jurisdictions as the Representatives may reasonably designate (including, without limitation, all filing and registration fees, and the reasonable fees and disbursements of "blue sky" counsel); (e) all actual fees, expenses and disbursements relating to the registration, qualification or exemption of the Public Securities under the securities laws of such foreign jurisdictions as the Representatives may reasonably designate; (f) the costs of all mailing and printing of the Registration Statements, Prospectuses and all amendments, supplements and exhibits thereto and as many preliminary and final Prospectuses as the Representatives may reasonably deem necessary; (g) the costs of preparing, printing and delivering certificates representing the Public Securities; (h) fees and expenses of the transfer agent for the Common Stock; (i) stock transfer and/or stamp taxes, if any, payable upon the transfer of securities from the Company to the Underwriters; (j) the fees and expenses of the Company's accountants; (k) the fees and expenses of the Company's legal counsel and other agents and representatives; (l) all reasonable and documented "road show" expenses for the Offering up to a maximum of \$10,000; and (m) the due diligence fees and expenses of the Underwriters, including, without limitation, legal fees and expenses of the Underwriters and other diligence expenses; provided that these actual accountable expenses of the Underwriters shall not exceed \$110,000 in the aggregate (less any retainer previously paid to the Representatives) in addition to any expenses reimbursed pursuant to clause (l) above), including the fees and disbursements of the underwriters' counsel. The Representatives may deduct from the net proceeds of the Offering payable to the Company on the Closing Date, or any Option Closing Date, if any, the expenses set forth herein (as limited by this Section 3(h)(i)) to be paid by the Company to the Underwriters, provided, however, that in the event that the Offering is terminated, the Company agrees to reimburse the Underwriters pursuant to Section 8(c) hereof. In the event the offering is terminated, the Advance received against reasonable out-of-pocket expenses incurred in connection with the offering will be returned to the issuer to the extent not actually incurred in accordance with FINRA Rule 5110(f)(2)(C).

(ii) Non-accountable Expenses. The Company further agrees that, in addition to the expenses payable pursuant to Section 3(h)(i) clauses (d) and (m), on the Closing Date it shall pay to the Representatives, by deduction from the net proceeds of the Offering contemplated herein, a non-accountable expense allowance equal to one percent (1%) of the gross proceeds received by the Company from the sale of the Closing Shares.

(j) Application of Net Proceeds. The Company shall apply the net proceeds from the Offering received by it in a manner consistent with the application thereof described under the caption "Use of Proceeds" in the Registration Statement, the Pricing Prospectus and the Prospectus.

(k) Rule 158. The Company will timely file such reports pursuant to the Exchange Act as are necessary in order to make generally available to its security holders as soon as practicable an earnings statement for the purposes of, and to provide to the Underwriters the benefits contemplated by, Rule 158(a) under Section 11(a) of the Securities Act.

(l) Stabilization. Neither the Company nor, to its knowledge, any of its employees, directors or stockholders (without the consent of the Representatives) has taken or shall take, directly or indirectly, any action designed to or that has constituted or that might reasonably be expected to cause or result in, under Regulation M of the Exchange Act, or otherwise, stabilization or manipulation of the price of any security of the Company to facilitate the sale or resale of the Public Securities.

(m) Internal Controls. The Company shall maintain 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 in order to permit preparation of financial statements in accordance 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.

(n) Accountants. The Company shall retain an independent registered public accounting firm reasonably acceptable to the Representatives, and the Company shall continue to retain a nationally recognized independent registered public accounting firm for a period of at least three (3) years after the date of this Agreement.

(o) FINRA. For a period of 180 days from the later of the Closing Date or the Option Closing Date, the Company shall advise the Representatives (who shall make an appropriate filing with FINRA) if it is or becomes aware that (i) any officer or director of the Company, (ii) any beneficial owner of 5% or more of any class of the Company's securities or (iii) any beneficial owner of the Company's unregistered equity securities which were acquired during the 180 days immediately preceding the original filing of the Registration Statement is or becomes an affiliate or associated person of a FINRA member participating in the Offering (as determined in accordance with the rules and regulations of FINRA).

(p) No Fiduciary Duties. The Company acknowledges and agrees that the Underwriters' responsibility to the Company is solely contractual and commercial in nature, based on arms-length negotiations and that neither the Underwriters nor their affiliates or any selected dealer shall be deemed to be acting in a fiduciary capacity, or otherwise owes any fiduciary duty to the Company or any of its affiliates in connection with the Offering and the other transactions contemplated by this Agreement.

(q) Company Lock-Up Agreements. The Company, on behalf of itself and any successor entity, agrees that, without the prior written consent of the Representatives, it will not, for a period of 180 days after the date of this Agreement (the "Lock-Up Period"), (i) offer, pledge, sell, contract to sell, sell any option or contract to purchase, purchase any option or contract to sell, grant any option, right or warrant to purchase, lend, or otherwise transfer or dispose of, directly or indirectly, any shares of capital stock of the Company or any securities convertible into or exercisable or exchangeable for shares of capital stock of the Company; (ii) file or cause to be filed any registration statement with the Commission relating to the offering of any shares of capital stock of the Company or any securities convertible into or exercisable or exchangeable for shares of capital stock of the Company (other than pursuant to a registration statement on Form S-8 for employee benefit plans); or (iii) enter into any swap or other arrangement that transfers to another, in whole or in part, any of the economic consequences of ownership of capital stock of the Company, whether any such transaction described in clause (i), (ii) or (iii) above is to be settled by delivery of shares of capital stock of the Company or such other securities, in cash or otherwise. The restrictions contained in this section shall not apply to (i) the Public Securities and the Representatives' Securities to be sold hereunder; (ii) the issuance by the Company of shares of Common Stock upon the exercise of an outstanding stock option or warrant or the conversion of a security outstanding on the date hereof and disclosed in the Registration Statement and the Pricing Prospectus, (iii) the grant by the Company of stock options or other stock-based awards, or the issuance of shares of capital stock of the Company under any equity compensation plan of the Company disclosed in the Pricing Prospectus, or (iv) the issuance of securities in connection with mergers, acquisitions, joint ventures, licensing arrangements or any other similar non-capital raising transactions. Furthermore, notwithstanding anything to the contrary contained herein, the Company, on behalf of itself and any successor entity, agrees that, without the prior written consent of the Representatives, it will not, for a period of 90 days after the date of this Agreement, effect any combination (by reverse stock split or otherwise) of its outstanding shares of Common Stock into a smaller number of shares.

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

(s) Warrant Shares. If all or any portion of a Warrant or Representatives Warrant is exercised at a time when there is an effective registration statement to cover the issuance of the Warrant Shares or Underlying Common Stock or if the Warrant or Representatives Warrant is exercised via cashless exercise at a time when such Warrant Shares or Underlying Common Stock would be eligible for resale under Rule 144 by a non-affiliate of the Company, the Warrant Shares or Underlying Common Stock issued pursuant to any such exercise shall be issued free of all restrictive legends. If at any time following the date hereof the Registration Statement (or any subsequent registration statement registering the sale or resale of the Warrant Shares or Underlying Common Stock) is not effective or is not otherwise available for the sale of the Warrant Shares or Underlying Common Stock, the Company shall immediately notify the holders of the Warrants or Representatives Warrants in writing that such registration statement is not then effective and thereafter shall promptly notify such holders when the registration statement is effective again and available for the sale of the Warrant Shares or Underlying Common Stock (it being understood and agreed that the foregoing shall not limit the ability of the Company to issue, or any holder thereof to sell, any of the Warrant Shares or Underlying Common Stock in compliance with applicable federal and state securities laws).

(t) Reporting Requirements. The Company, during the period when a prospectus relating to the Public Securities is (or, but for the exception afforded by Rule 172, would be) required to be delivered under the Securities Act, will file all documents required to be filed with the Commission pursuant to the Exchange Act within the time periods required by the Exchange Act and Exchange Act Regulations. Additionally, the Company shall report the use of proceeds from the issuance of the Public Securities as may be required under Rule 463 under the Securities Act Regulations.

(u) Authorized Shares. As soon as practicable following the initial Closing Date, the Company shall hold an annual or special meeting of stockholders (the “Stockholder Meeting”) for the purpose of obtaining the approval of the Company’s stockholder to amend the Charter to increase the number of shares of authorized Common Stock (or effect a reverse stock split of the Common Stock), which would result in the Company having a sufficient number of authorized and unreserved shares of Common Stock to satisfy its obligation to reserve for issuance upon exercise of the Warrants at least a number of shares of Common Stock equal to 100% of the number of shares of Common Stock as shall from time to time be necessary to effect the exercise of all of Warrants then outstanding without regard to any limitation on exercise included therein. The Stockholder Meeting shall be held no later than sixty (60) days following the initial Closing Date (the “Stockholder Approval”). The Company shall use its reasonable best efforts to obtain Stockholder Approval of such items and shall cause the Board of Directors of the Company to recommend to the stockholder that they approve such items. If, despite the Company’s reasonable best efforts the Stockholder Approval is not obtained on or prior to January 2, 2020, the Company shall cause an additional stockholder meeting to be held every three (3) months thereafter until such Stockholder Approval is obtained. Immediately upon receipt of Stockholder Approval the Company shall file the Amendment with the Secretary of State of the State of Delaware; provided, however, that if Stockholder Approval is obtained of an amendment to the Company’s Amended Certificate of Incorporation to both effect an increase in the authorized number of shares of Common Stock and effect a reverse stock split, the Company shall only be required to immediately effect the increase in the authorized number of shares of Common Stock so long as such increase would provide a sufficient number of shares to provide for the issuance of the Warrant Shares upon the exercise of any purchase rights under the Warrants and the Representatives’ Warrants without regard to any limitation on exercise included therein.

“Amendment” means any amendment to the Company’s Charter to increase the number of shares of authorized Common Stock (or effect a reverse stock split of the Common Stock), which would result in the Company having a sufficient number of authorized and unreserved shares of Common Stock to satisfy its obligation to reserve for issuance upon exercise of the Warrants and the Representative’s Warrants at least a number of shares of Common Stock equal to 100% of the number of shares of Common Stock as shall from time to time be necessary to effect the exercise of all of the Warrants and Representative’s Warrants then outstanding without regard to any limitation on exercise included therein.

4. Conditions of Underwriters' Obligations. The obligations of the Underwriters to purchase and pay for the Public Securities, as provided herein, shall be subject to (i) the continuing accuracy of the representations and warranties of the Company as of the date hereof and as of each of the Closing Date and the Option Closing Date, if any; (ii) the accuracy of the statements of officers of the Company made pursuant to the provisions hereof; (iii) the performance by the Company of its obligations hereunder; and (iv) the following conditions:

(a) Regulatory Matters.

(i) Effectiveness of Registration Statement; Rule 430A Information. The Registration Statement has become effective not later than 5:00 p.m., Eastern time, on the date of this Agreement or such later date and time as shall be consented to in writing by the Representatives, and, at each of the Closing Date and any Option Closing Date, no stop order suspending the effectiveness of the Registration Statement or any post-effective amendment thereto shall have been issued under the Securities Act, no order preventing or suspending the use of any Preliminary Prospectus or the Prospectus shall have been issued and no proceedings for any of those purposes have been instituted or are pending or, to the Company's knowledge, contemplated by the Commission. The Company has complied with each request (if any) from the Commission for additional information. The Prospectus containing the Rule 430A Information shall have been filed with the Commission in the manner and within the time frame required by Rule 424(b) (without reliance on Rule 424(b)(8)) or a post-effective amendment providing such information shall have been filed with, and declared effective by, the Commission in accordance with the requirements of Rule 430A.

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

(iii) Exchange Stock Market Clearance. On the Closing Date, the Closing Shares and the shares of Common Stock issuable upon exercise of the Pre-Funded Warrants, the Traditional Warrants and the Representatives' Warrant shall have been approved for listing on the Exchange, subject only to official notice of issuance. On each Option Closing Date (if any), the Option Shares and the shares of Common Stock issuable upon exercise of the Option Warrants (if any) and shall have been approved for listing on the Exchange, subject only to official notice of issuance.

(b) Company Counsel Matters.

(i) Closing Date Opinion of U.S. Counsel. On the Closing Date and on each Option Closing Date (if any), the Representatives shall have received (i) the favorable opinion of Sheppard, Mullin, Richter & Hampton LLP, U.S. counsel to the Company, dated the Closing Date or Option Closing Date, as applicable, and addressed to the Representatives, and (ii) a written statement providing certain "10b-5" negative assurances, addressed to the Representatives and dated the Closing Date and any Option Closing Date (if such date is other than the Closing Date), each in a form reasonably satisfactory to the Representatives and Representatives Counsel.

(c) Comfort Letters.

(i) Comfort Letter. At the time this Agreement is executed the Representatives shall have received a cold comfort letter from Weinberg & Company, P.A. containing statements and information of the type customarily included in accountants' comfort letters with respect to the financial statements and certain financial information contained in the Registration Statement, the Pricing Prospectus and the Prospectus, addressed to the Representatives and in form and substance satisfactory in all respects to the Representatives and to the Auditor, dated as of the date of this Agreement.

(ii) Bring-down Comfort Letter. At the Closing Date and on each Option Closing Date (if any), the Representatives shall have received from Weinberg & Company, P.A. a letter, dated as of the Closing Date or Option Closing Date, as applicable, to the effect that such Auditor reaffirms the statements made in the letter furnished pursuant to Section 4(c)(i), except that with respect to the initial comfort letter the specified date referred to shall be a date not more than three (3) Business Days prior to the Closing Date.

(d) Officers' Certificates.

(i) Officers' Certificate. The Company shall have furnished to the Representatives a certificate, dated the Closing Date or Option Closing Date, as applicable, of its President and Chief Executive Officer, and its Chief Financial Officer, or Controller and Chief Accounting Officer, stating on behalf of the Company and not in an individual capacity that (i) such officers have carefully examined the Registration Statement, the Pricing Prospectus and the Prospectus and, in their opinion, the Registration Statement and each amendment thereto, as of the Applicable Time and as of the Closing Date or Option Closing Date, as applicable, did not include any untrue statement of a material fact and did not omit to state a material fact required to be stated therein or necessary to make the statements therein not misleading, and the Pricing Prospectus, as of the Applicable Time and as of the Closing Date, or Option Closing Date, as applicable, the Prospectus and each amendment or supplement thereto, as of the respective date thereof and as of the Closing Date or Option Closing Date, as applicable, did not include any untrue statement of a material fact and did not omit to state a material fact necessary in order to make the statements therein, in the light of the circumstances in which they were made, not misleading, (ii) since the effective date of the Registration Statement, no event has occurred which should have been set forth in a supplement or amendment to the Registration Statement, the Pricing Prospectus or the Prospectus, (iii) to their knowledge after reasonable investigation, as of the Closing Date or Option Closing Date, as applicable, the representations and warranties of the Company in this Agreement are true and correct in all material respects (except for those representations and warranties qualified as to materiality, which shall be true and correct in all respects and except for those representations and warranties which refer to facts existing at a specific date, which shall be true and correct as of such date) and the Company has complied with all agreements and satisfied all conditions on its part to be performed or satisfied hereunder at or prior to the Closing Date and any Option Closing Date (if such date is other than the Closing Date), and (iv) there has not been, subsequent to the date of the most recent audited financial statements included in the Pricing Prospectus, any Material Adverse Change in the financial position or results of operations of the Company, or any change or development that, singularly or in the aggregate, would involve a Material Adverse Change, in or affecting the condition (financial or otherwise), results of operations, business, assets or prospects of the Company, except as set forth in the Prospectus.

(ii) Secretary's Certificate. At each of the Closing Date and any Option Closing Date, the Representatives shall have received a certificate of the Company signed by the Secretary of the Company, dated the Closing Date and Option Closing Date (if such date is other than the Closing Date), certifying: (i) that each of the Charter and Bylaws is true and complete, has not been modified and is in full force and effect; (ii) that the resolutions of the Company's Board of Directors relating to the Offering are in full force and effect and have not been modified; (iii) the good standing of the Company; and (iv) as to the incumbency of the officers of the Company. The documents referred to in such certificate shall be attached to such certificate.

(iii) Chief Financial Officer Certificate. At each of the Closing Date and any Option Closing Date, the Representatives shall have received a certificate of the Company signed by the Chief Financial Officer of the Company, dated the Closing Date and Option Closing Date (if such date is other than the Closing Date), with respect to certain financial information contained in the Registration Statement, the Preliminary Prospectus, General Disclosure Package, and the Prospectus, in form and substance reasonably satisfactory to the Representatives.

(e) No Material Changes. Prior to and on each of the Closing Date and each Option Closing Date: (i) there shall have been no Material Adverse Change or development involving a prospective Material Adverse Change in the condition or the business activities, financial or otherwise, of the Company or any subsidiary or variable interest entity of the Company from the latest dates as of which such condition is set forth in the Registration Statement, the Pricing Prospectus and the Prospectus; (ii) no action, suit or proceeding, at law or in equity, shall have been pending or threatened against the Company or any Insider before or by any court or federal or state commission, board or other administrative agency wherein an unfavorable decision, ruling or finding would reasonably be expected to result in a Material Adverse Change, except as set forth in the Registration Statement, the Pricing Prospectus and the Prospectus; (iii) no stop order shall have been issued under the Securities Act and no proceedings therefor shall have been initiated or threatened by the Commission; and (iv) the Registration Statement, the Pricing Prospectus and the Prospectus and any amendments or supplements thereto shall contain all material statements which are required to be stated therein in accordance with the Securities Act and the Securities Act Regulations and shall conform in all material respects to the requirements of the Securities Act and the Securities Act Regulations, and neither the Registration Statement, the Pricing Prospectus nor the Prospectus nor any amendment or supplement thereto shall contain any untrue statement of a material fact or omit to state any 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.

(f) Deliveries.

(i) Lock-Up Agreements. On or before the date of this Agreement, the Company shall have delivered to the Representatives executed copies of the Lock-Up Agreements from each of the persons listed in Schedule 2 hereto.

(ii) Shares. At the Closing Date, the Company shall have delivered or caused to be delivered the Closing Shares and, as to each Option Closing Date, if any, the applicable Option Shares, which shares shall be delivered via The Depository Trust Company Deposit or Withdrawal at Custodian system for the accounts of the several Underwriters.

(iii) Warrants. At the Closing Date, the Company shall have delivered or caused to be delivered the Closing Warrants and, as to each Option Closing Date, if any, the applicable Option Warrants in certificated form registered in the name or names and in such authorized denominations as the applicable Underwriter may request in writing at least one Business Day prior to the Closing Date and, if any, each Option Closing Date.

(iv) Representatives' Warrant Agreement. On the Closing Date, the Company shall have delivered to the Representatives executed copies of the Representatives' Warrant Agreement.

(v) General Counsel Certificate. At the Closing Date and at each Option Closing Date, the duly executed and delivered certificate (addressed to the Underwriters) of its General Counsel/Compliance with respect to certain regulatory matters dated as of the Closing Date, and in form and substance satisfactory to counsel for the Representative.

(vi) Intellectual Property Opinion. The Company shall have delivered or caused to be delivered at the Closing Date and at each Option Closing Date, the duly executed and delivered opinion (addressed to the Underwriters) of David M. Kohn, Lewis Kohn & Walker LLP, 15030 Avenue of Science, Suite 201, San Diego, California 92128, dkohn@lewiskohn.com, (858) 436-1336, with respect to certain intellectual property matters dated as of the Closing Date and each Option Closing Date, if any, and in form and substance satisfactory to counsel for the Representative.

(g) Additional Documents. At the Closing Date, Representatives Counsel shall have been furnished with such documents and opinions as they may require for the purpose of enabling Representatives Counsel to deliver an opinion to the Underwriters, or in order to evidence the accuracy of any of the representations or warranties, or the fulfillment of any of the conditions, herein contained; and all proceedings taken by the Company in connection with the issuance and sale of the Public Securities and the Representatives' Securities as herein contemplated shall be satisfactory in form and substance to the Representatives and Representatives Counsel.

## 5. Indemnification.

(a) Indemnification of the Underwriters. The Company agrees to indemnify and hold harmless each Underwriter, its affiliates and each person controlling such Underwriter (within the meaning of Section 15 of the Securities Act or Section 20 of the Exchange Act), and the directors, officers, agents and employees of each Underwriter, its affiliates and each such controlling person (each Underwriter, and each such entity or person hereafter is referred to as an “Underwriter Indemnified Person”) from and against any losses, claims, damages, judgments, assessments, costs and other liabilities (collectively, the “Liabilities”), and shall reimburse each Underwriter Indemnified Person for all fees and expenses (including the reasonable fees and expenses of counsel for the Underwriter Indemnified Persons, except as otherwise expressly provided in this Agreement) (collectively, the “Expenses”) as they are incurred in connection with such Indemnified Person’s enforcement of his or its rights under this Agreement, and agrees to advance payment of such Expenses as they are incurred by an Underwriter Indemnified Person in investigating, preparing, pursuing or defending any actions, whether or not any Indemnified Person is a party thereto, arising out of or based upon any untrue statement or alleged untrue statement of a material fact contained in (i) the Registration Statement, the Pricing Disclosure Package, the Preliminary Prospectus, the Prospectus or in any Issuer Free Writing Prospectus (as from time to time each may be amended and supplemented), including the information deemed to be a part of the Registration Statement at the time of effectiveness and at any subsequent time pursuant to Rules 430A and 430B of the Securities Act and the rules and regulations thereunder, as applicable; (ii) any materials or information provided to investors by, or with the approval of, the Company in connection with the marketing of the Offering, including any “road show” or investor presentations made to investors by the Company (whether in person or electronically); (iii) in the representations and warranties of the Company contained in this Agreement, or (iv) any application or other document or written communication (in this Section 5, collectively called “application”) executed by the Company or based upon written information furnished by the Company in any jurisdiction in order to qualify the Public Securities under the securities laws thereof or filed with the Commission, any state securities commission or agency, the Exchange or any other national securities exchange; or the omission or alleged omission therefrom of a material fact required to be stated therein or necessary to make the statements therein, in the light of the circumstances under which they were made, not misleading, unless such statement or omission was made in reliance upon, and in conformity with, the Underwriters’ Information.

(b) Procedure. Upon receipt by an indemnified person under this section 5 (an “Indemnified Person”) of actual notice of an action against such Indemnified Person with respect to which indemnity may reasonably be expected to be sought under this Agreement, such Indemnified Person shall promptly notify the Company in writing; provided that failure by any Indemnified Person so to notify the Company shall not relieve the Company from any obligation or liability which the Company may have on account of this Section 5 or otherwise to such Indemnified Person, except to the extent the Company is materially prejudiced as a proximate result of such failure. An Indemnified Person shall have the right to require that the Company assume the defense of any such action (including the employment of counsel designated by the Company and reasonably satisfactory to the Representatives). Any Indemnified Person shall have the right to employ separate counsel in any such action and participate in the defense thereof, but the fees and expenses of such counsel shall be at the expense of such Indemnified Person unless: (i) the Company has failed promptly to assume the defense and employ counsel reasonably satisfactory to the Representatives for the benefit of the Underwriters and the other Indemnified Persons or (ii) such Indemnified Person shall have been advised that in the opinion of counsel that there is an actual or potential conflict of interest that prevents (or makes it imprudent for) the counsel engaged by the Company for the purpose of representing the Indemnified Person, to represent both such Indemnified Person and any other person represented or proposed to be represented by such counsel. The Company shall not be liable for the fees and expenses of more than one separate counsel (together with local counsel), representing all Indemnified Persons who are parties to such action), which counsel (together with any local counsel) for the Indemnified Persons shall be selected by the Representatives, subject to the Company’s approval (which shall not be unreasonably withheld). The Company shall not be liable for any settlement of any action effected without its written consent (which shall not be unreasonably withheld). In addition, the Company shall not, without the prior written consent of each Indemnified Person, settle, compromise or consent to the entry of any judgment in or otherwise seek to terminate any pending or threatened action in respect of which advancement, reimbursement, indemnification or contribution may be sought hereunder (whether or not such Indemnified Person is a party thereto) unless such settlement, compromise, consent or termination (i) includes an unconditional release of that Indemnified Person, from all Liabilities arising out of such action for which indemnification or contribution may be sought hereunder and (ii) does not include a statement as to or an admission of fault, culpability or a failure to act, by or on behalf of any Indemnified Person. The advancement, reimbursement, indemnification and contribution obligations of the Company required hereby shall be made by periodic payments of the amount thereof during the course of the investigation or defense, as every Liability and Expense is incurred and is due and payable, and in such amounts as fully satisfy each and every Liability and Expense as it is incurred (and in no event later than 30 days following the date of any invoice therefore).

(c) Indemnification of the Company. Each Underwriter, severally and not jointly, agrees to indemnify and hold harmless the Company, its directors, its officers who signed the Registration Statement and persons who control the Company within the meaning of Section 15 of the Securities Act or Section 20 of the Exchange Act against any and all Liabilities, but only with respect to untrue statements or omissions, or alleged untrue statements or omissions made in the Registration Statement, any Preliminary Prospectus, the Pricing Disclosure Package or Prospectus or any amendment or supplement thereto or in any application, in reliance upon, and in strict conformity with, the Underwriters’ Information; provided, however, that in no case shall any Underwriter be liable or responsible for any amount in excess of the underwriting discount and commissions applicable to the Public Securities purchased by such Underwriter hereunder.

In case any action shall be brought against the Company or any other person so indemnified based on any Preliminary Prospectus, the Registration Statement, the Pricing Disclosure Package or Prospectus or any amendment or supplement thereto or in any application, and in respect of which indemnity may be sought against any Underwriter, such Underwriter shall have the rights and duties given to the Company, and the Company and each other person so indemnified shall have the rights and duties given to the several Underwriters by the provisions of Section 5(a). The Company agrees promptly to notify the Representatives of the commencement of any litigation or proceedings against the Company or any of its officers, directors or any person, if any, who controls the Company within the meaning of Section 15 of the Securities Act or Section 20 of the Exchange Act, in connection with the issuance and sale of the Public Securities or in connection with the Registration Statement, the Pricing Disclosure Package, the Prospectus or any Issuer Free Writing Prospectus; provided that failure by the Company so to notify the Representatives shall not relieve any Underwriter from any obligation or liability which such Underwriter may have on account of this Section 5 or otherwise to the Company, except to the extent such Underwriter is materially prejudiced as a proximate result of such failure.

(d) Contribution. If the indemnification provided for in this Section 5 shall for any reason be unavailable to or insufficient to hold harmless an indemnified party under Section 5(a) or 5(c) in respect of any Liabilities and Expenses referred to therein, then each indemnifying party shall, in lieu of indemnifying such indemnified party, contribute to the amount paid or payable by such indemnified party as a result of such Liabilities and Expenses, (i) in such proportion as shall be appropriate to reflect the relative benefits received by the Company, on the one hand, and each of the Underwriters, on the other hand, from the Offering, 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 hand, in connection with the matters as to which such Liabilities or Expenses relate, 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 hand, with respect to such Offering shall be deemed to be in the same proportion as the total proceeds from the Offering pursuant to this Agreement (before deducting expenses) received by the Company bear to the total underwriting discount and commissions actually received by the Underwriters in connection with the Offering, in each case as set forth in the table on the cover page of the Prospectus. The relative fault of the Company, on the one hand, and the Underwriters, on the other hand, 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, on the one hand, or the Underwriters, on the other hand, and the parties' relative intent, knowledge, access to information and opportunity to correct or prevent such untrue statement, omission, act or failure to act; provided that the parties hereto agree that the written information furnished to the Company through the Representatives by or on behalf of any Underwriter for use in any Preliminary Prospectus, any Registration Statement or the Prospectus, or in any amendment or supplement thereto, consists solely of the Underwriters' Information. The Company and the Underwriters agree that it would not be just and equitable if contributions pursuant to this subsection (d) were 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 into account the equitable considerations referred to above in this subsection (d). Notwithstanding the above, no person guilty of fraudulent misrepresentation within the meaning of Section 11(f) of the Securities Act shall be entitled to contribution from a party who was not guilty of fraudulent misrepresentation.

(e) Limitation. The Company also agrees that no Indemnified Person shall have any liability (whether direct or indirect, in contract or tort or otherwise) to the Company for or in connection with advice or services rendered or to be rendered by any Indemnified Person pursuant to this Agreement, the transactions contemplated thereby or any Indemnified Person's actions or inactions in connection with any such advice, services or transactions, except to the extent that a court of competent jurisdiction has made a finding that Liabilities (and related Expenses) of the Company have resulted primarily from such Indemnified Person's gross negligence or willful misconduct in connection with any such advice, actions, inactions or services.

(f) Survival & Third-Party Beneficiaries. The advancement, reimbursement, indemnity and contribution obligations set forth in this Section 5 shall remain in full force and effect regardless of any termination of, or the completion of any Indemnified Person's services under or in connection with, this Agreement. Each Indemnified Person is an intended third-party beneficiary of this Section 5 and has the right to enforce the provisions of Section 5 as if he/she/it was a party to this Agreement.

#### 6. Default by an Underwriter.

(a) Default Not Exceeding 10% of Public Securities. If any Underwriter or Underwriters shall default in its or their obligations to purchase the Closing Shares, and if the number of the Closing Shares with respect to which such default relates does not exceed in the aggregate 10% of the number of Closing Shares that all Underwriters have agreed to purchase hereunder, then such Closing Shares to which the default relates shall be purchased by the non-defaulting Underwriters in proportion to their respective commitments hereunder.

(b) Default Exceeding 10% of Public Securities. In the event that the default addressed in Section (a)(a) relates to more than 10% of the Closing Shares, the Representatives may in its discretion arrange for itself or for another party or parties to purchase such Closing Shares to which such default relates on the terms contained herein. If, within one Business Day after such default relating to more than 10% of the Closing Shares, the Representatives does not arrange for the purchase of such Closing Shares, then the Company shall be entitled to a further period of one Business Day within which to procure another party or parties satisfactory to the Representatives to purchase said Closing Shares on such terms. In the event that neither the Representatives nor the Company arrange for the purchase of the Closing Shares to which a default relates as provided in this Section (a), this Agreement will automatically be terminated by the Representatives or the Company without liability on the part of the Company (except as provided in Sections 3(h) and 5 hereof) or the several Underwriters (except as provided in Section 5 hereof); and provided, further, that nothing herein shall relieve a defaulting Underwriter of its liability, if any, to the other Underwriters and to the Company for damages occasioned by its default hereunder.

(c) Postponement of Closing Date. In the event that the Closing Shares to which the default relates are to be purchased by the non-defaulting Underwriters, or are to be purchased by another party or parties as aforesaid, the Representatives or the Company shall have the right to postpone the Closing Date for a reasonable period, but not in any event exceeding five (5) Business Days, in order to effect whatever changes may thereby be made necessary in the Registration Statement, the Pricing Prospectus or the Prospectus or in any other documents and arrangements, and the Company agrees to file promptly any amendment to the Registration Statement, the Pricing Prospectus or the Prospectus that in the opinion of counsel for the Underwriter may thereby be made necessary. The term “Underwriter” as used in this Agreement shall include any party substituted under this Section (a) with like effect as if it had originally been a party to this Agreement with respect to such Securities.

## 7. Additional Covenants.

(a) Prohibition on Press Releases and Public Announcements. The Company shall not issue press releases or engage in any other publicity, without the Representatives’ prior written consent (such consent not to be unreasonably withheld), for a period ending at 5:00 p.m., Eastern time, on the first Business Day following the forty-fifth (45<sup>th</sup>) day after the Closing Date, other than normal and customary releases issued in the ordinary course of the Company’s business.

### (b) Right of First Refusal.

(i) Pursuant to that certain underwriting agreement by and among Maxim and WallachBeth, dated as of August 13, 2019 (the “Prior UA”), in connection with the Company’s recent underwritten public offering that closed on August 15, 2019, until August 15, 2020 (i.e., twelve (12) months from the closing date of such offering), the Company granted a right of first refusal to Maxim and WallachBeth to act as book running manager, lead underwriter and/or lead placement agent for any and all future public or private equity, equity-linked or debt (excluding commercial bank debt) offerings during such twelve (12) month period of the Company, or any successor to or any subsidiary of the Company. This right applies to Maxim and WallachBeth equally (i.e., 50% of the economic benefits to Maxim and 50% of the economic benefits to WallachBeth). Notwithstanding anything to the contrary contained herein, the right set forth in Section 7(b) of the Prior UA and described in this Section 7(b) remains in full force in effect whether this Agreement is executed or terminated and this Section 7(b) of shall survive any termination of this Agreement.

(c) Subsequent Equity Sales.

(i) From the date hereof until six months after the Closing Date, neither the Company nor any Subsidiary shall issue, enter into any agreement to issue or announce the issuance or proposed issuance of any shares of Common Stock or Common Stock Equivalents.

(ii) From the date hereof until six months after the Closing Date, the Company shall be prohibited from effecting or entering into an agreement to effect any issuance by the Company or any of its Subsidiaries of Common Stock or Common Stock Equivalents (or a combination of units thereof) involving a Variable Rate Transaction. “Variable Rate Transaction” means a transaction in which the Company (i) issues or sells any debt or equity securities that are convertible into, exchangeable or exercisable for, or include the right to receive, additional shares of Common Stock either (A) at a conversion price, exercise price or exchange rate or other price that is based upon, and/or varies with, the trading prices of or quotations for the shares of Common Stock at any time after the initial issuance of such debt or equity securities or (B) with a conversion, exercise or exchange price that is subject to being reset at some future date after the initial issuance of such debt or equity security or upon the occurrence of specified or contingent events directly or indirectly related to the business of the Company or the market for the Common Stock or (ii) enters into, or effects a transaction under, any agreement, including, but not limited to, an equity line of credit, whereby the Company may issue securities at a future determined price. Any Underwriter shall be entitled to obtain injunctive relief against the Company to preclude any such issuance, which remedy shall be in addition to any right to collect damages.

(iii) From the date hereof until 30 days after the date on which the Company has obtained the Stockholder Approval and the Amendment to the Company’s Amended Certificate of Incorporation shall have become effective, (A) neither the Company nor any Subsidiary shall issue, enter into any agreement to issue or announce the issuance or proposed issuance of any shares of Common Stock or Common Stock Equivalents, and (B) the Company shall be prohibited from effecting or entering into an agreement to effect any issuance by the Company or any of its Subsidiaries of Common Stock or Common Stock Equivalents (or a combination of units thereof) involving a Variable Rate Transaction.

(d) Notwithstanding the foregoing, (i) Sections 7(c)(i) and 7(c)(ii) shall not apply in respect of an Exempt Issuance, except that no Variable Rate Transaction shall be an Exempt Issuance and Section 7(c)(iii) shall not apply in respect of clause (i) and (ii) of an Exempt Issuance, except that no Variable Rate Transaction shall be an Exempt Issuance.

For purposes of this Section 7(c):

“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.

“Exempt Issuance” means the issuance of (i) shares of Common Stock, restricted stock, restricted stock units or options to employees, officers, directors or consultants of the Company pursuant to any stock or option plan duly adopted for such purpose, by a majority of the non-employee members of the Board of Directors or a majority of the members of a committee of non-employee directors established for such purpose for services rendered to the Company (provided that any such issuances to consultants shall not exceed 50,000 shares of Common Stock, restricted stock, restricted stock units, or options (subject to adjustment for reverse and forward stock splits and the like) during the period set forth in Section 7 (c)(iii) above and any such shares or other securities shall be subject to a lock-up equal to the lock-up required under Section 7(c)(iii) above or issued as restricted securities which are not registrable until the expiration of such period), (ii) securities upon the exercise or exchange of or conversion of any Securities issued hereunder and/or other securities exercisable or exchangeable for or convertible into shares of Common Stock issued and outstanding on the date of this Agreement, provided that such securities have not been amended since the date of this Agreement to increase the number of such securities or to decrease the exercise price, exchange price or conversion price of such securities (other than in connection with automatic price resets, stock splits, adjustments or combinations as set forth in such securities) or to extend the term of such securities and (iii) securities issued pursuant to acquisitions or strategic transactions approved by a majority of the disinterested directors of the Company, provided that such securities are issued as “restricted securities” (as defined in Rule 144) and carry no registration rights that require or permit the filing of any registration statement in connection therewith during the prohibition period in Section 7(c) herein, and provided that any such issuance shall only be to a Person (or to the equityholders of a Person) which is, itself or through its subsidiaries, an operating company or an owner of an asset in a business synergistic with the business of the Company and shall provide to the Company additional benefits in addition to the investment of funds, but shall not include a transaction in which the Company is issuing securities primarily for the purpose of raising capital or to an entity whose primary business is investing in securities.

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

#### 8. Effective Date of this Agreement and Termination Thereof.

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

(b) Termination. The Representatives shall have the right to terminate this Agreement at any time prior to any Closing Date, (i) if any domestic or international event or act or occurrence has materially disrupted, or in Representatives’ opinion will in the immediate future materially disrupt, general securities markets in the United States; or (ii) if trading on the NASDAQ Stock Market LLC shall have been suspended or materially limited, or minimum or maximum prices for trading shall have been fixed, or maximum ranges for prices for securities shall have been required by FINRA or by order of the Commission or any other government authority having jurisdiction; or (iii) if the United States shall have become involved in a new war or an increase in major hostilities; or (iv) if a banking moratorium has been declared by a New York State or federal authority; or (v) if a moratorium on foreign exchange trading has been declared which materially adversely impacts the United States securities markets; or (vi) if the Company shall have sustained a material loss by fire, flood, accident, hurricane, earthquake, theft, sabotage or other calamity or malicious act which, whether or not such loss shall have been insured, will, in Representatives opinion, make it inadvisable to proceed with the delivery of the Closing Shares; or (vii) if the Company is in material breach of any of its representations, warranties or covenants hereunder; or (viii) if the Representatives shall have become aware after the date hereof of such a Material Adverse Change in the conditions of the Company, or such adverse material change in general market conditions as in the Representatives’ judgment would make it impracticable to proceed with the offering, sale and/or delivery of the Public Securities or to enforce contracts made by the Underwriters for the sale of the Public Securities. Section 5 of this Agreement shall survive any termination of this Agreement.

(c) Expenses. Notwithstanding anything to the contrary in this Agreement, except in the case of a default by the Underwriters pursuant to Section (a)(b) above, in the event that this Agreement shall not be carried out for any reason whatsoever, within the time specified herein or any extensions thereof pursuant to the terms herein, the Company shall be obligated to pay to the Underwriters their actual and accountable out-of-pocket expenses related to the transactions contemplated herein then due and payable and upon demand the Company shall pay the full amount thereof to the Representatives on behalf of the Underwriters (less any amounts previously advanced to the Representatives), including without limitation the full amount of a credit towards the Underwriters' legal fees and expenses in the amount of \$50,000, as set forth above with such legal fees. Notwithstanding the foregoing, any advance received by the Representatives will be reimbursed to the Company to the extent not actually incurred in compliance with FINRA Rule 5110(f)(2)(C).

(d) Indemnification. Notwithstanding any contrary provision contained in this Agreement, any election hereunder or any termination of this Agreement, and whether or not this Agreement is otherwise carried out, the provisions of Section 5 shall remain in full force and effect and shall not be in any way affected by, such election or termination or failure to carry out the terms of this Agreement or any part hereof.

(e) Representations, Warranties, Agreements to Survive. All representations, warranties and agreements contained in this Agreement or in certificates of officers of the Company submitted pursuant hereto, shall remain operative and in full force and effect regardless of (i) any investigation made by or on behalf of any Underwriter or its Affiliates or selling agents, any person controlling any Underwriter, its officers or directors or any person controlling the Company or (ii) delivery of and payment for the Public Securities.

#### 9. Miscellaneous.

(a) Notices. Any and all notices or other communications or deliveries required or permitted to be provided hereunder shall be in writing and shall be deemed given and effective on the earliest of: (a) the date of transmission, if such notice or communication is delivered via facsimile at the facsimile number or e-mail attachment at the email address set forth on the signature pages attached hereto at or prior to 5:30 p.m. (New York City time) on a Trading Day, (b) the next Trading Day after the date of transmission, if such notice or communication is delivered via facsimile at the facsimile number or e-mail attachment at the e-mail address as set forth on the signature pages attached hereto on a day that is not a Trading Day or later than 5:30 p.m. (New York City time) on any Trading Day, (c) the second (2nd) Trading Day following the date of mailing, if sent by U.S. nationally recognized overnight courier service or (d) upon actual receipt by the party to whom such notice is required to be given. The address for such notices and communications shall be as set forth below.

If to the Representatives:

Maxim Group LLC  
405 Lexington Avenue  
New York, New York 10174  
Facsimile: (212) 895-3783  
Attention: Clifford A. Teller  
E-mail: cteller@maximgrp.com

and

WallachBeth Capital, LLC  
Harborside Financial Center Plaza 5  
185 Hudson Street, Suite 1410  
Jersey City, New Jersey 07311  
Attention: Kenneth Bantum  
E-mail: kbantum@wallachbeth.com

with copies to:

Gracin& Marlow, LLP  
405 Lexington Avenue, 26th Floor  
New York, New York 10174  
Facsimile: (212) 208-4657  
Attention: Leslie Marlow  
E-mail: lmarlow@gracinmarlow.com

If to the Company:

Guardion Health Sciences, Inc.  
15150 Avenue of Science, Suite 200  
San Diego, California 92128  
Attention: Chief Executive Officer  
E-mail: mfavish@guardionhealth.com

with copies to:

Sheppard, Mullin, Richter & Hampton LLP  
333 South Hope Street, 43rd Floor  
Los Angeles, California 90071  
Attention: David I. Sunkin  
E-mail: dsunkin@sheppardmullin.com

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

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

(d) Entire Agreement. This Agreement (together with the other agreements and documents being delivered pursuant to or in connection with this Agreement) constitutes the entire agreement of the parties hereto with respect to the subject matter hereof and thereof, and supersedes all prior agreements and understandings of the parties, oral and written, with respect to the subject matter hereof. This Agreement shall replace and supersede the Engagement Letter, including, without limitation, any terms which survive termination thereof pursuant to Section 9 thereof.

(e) Binding Effect. This Agreement shall inure solely to the benefit of and shall be binding upon the Representatives, the Underwriters, each Indemnified Person referred to in Section 5, the Company and the controlling persons, directors and officers referred to in Section 5 hereof, and their respective successors, legal Representatives, heirs and assigns, and no other person shall have or be construed to have any legal or equitable right, remedy or claim under or in respect of or by virtue of this Agreement or any provisions herein contained. The term "successors and assigns" shall not include a purchaser, in its capacity as such, of securities from any of the Underwriters.

(f) Governing Law; Consent to Jurisdiction; Trial by Jury. This Agreement shall be governed by and construed and enforced in accordance with the laws of the State of New York, without giving effect to conflict of laws principles thereof. The Company hereby agrees that any action, proceeding or claim against it arising out of, or relating in any way to this Agreement shall be brought and enforced in the New York Supreme Court, County of New York, or in the United States District Court for the Southern District of New York, and irrevocably submits to such jurisdiction, which jurisdiction shall be exclusive. The Company hereby waives any objection to such exclusive jurisdiction and that such courts represent an inconvenient forum. Any such process or summons to be served upon the Company may be served by transmitting a copy thereof by registered or certified mail, return receipt requested, postage prepaid, addressed to it at the address set forth in Section 9(a) hereof. Such mailing shall be deemed personal service and shall be legal and binding upon the Company in any action, proceeding or claim. The Company agrees that the prevailing party(ies) in any such action shall be entitled to recover from the other party(ies) all of its reasonable attorneys' fees and expenses relating to such action or proceeding and/or incurred in connection with the preparation therefor. The Company (on its behalf and, to the extent permitted by Applicable Law, on behalf of its stockholders and affiliates) and 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 or the transactions contemplated hereby.

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

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

**[Signature Page Follows]**

If the foregoing correctly sets forth the understanding between the Underwriters and the Company, please so indicate in the space provided below.

Very truly yours,

**GUARDION HEALTH SCIENCES, INC.**

By: /s/ Michael Favish

Name: Michael Favish

Title: Chief Executive Officer

Accepted by the Representatives, acting  
for themselves and as  
Representatives of the Underwriters  
named on Schedule 2 hereto,  
as of the date first above written:

**MAXIM GROUP LLC**

By: /s/ Clifford A. Teller

Name: Clifford A. Teller

Title: Executive Managing Director, Investment Banking

**WALLACHBETH CAPITAL, LLC**

By: /s/ Daniel Tapia

Name: Daniel Tapia

Title: Chief Compliance Officer

[SIGNATURE PAGE]  
**UNDERWRITING AGREEMENT**

**SCHEDULE 1**

SCHEDULE OF UNDERWRITERS

<b>Underwriter</b>	<b>Total Number of Closing Shares to be Purchased</b>	<b>Total Number of Pre-Funded Warrants to be Purchased</b>	<b>Total Number of Traditional Warrants to be Purchased</b>	<b>Number of Option Shares to be Purchased if the Over- Allotment Option is Fully Exercised</b>	<b>Number of Option Warrants to be Purchased if the Over- Allotment Option is Fully Exercised</b>
Maxim Group LLC	11,400,000	850,000	12,250,000	1,837,500	1,837,500
WallachBeth Capital, LLC	11,400,000	850,000	12,250,000	1,837,500	1,837,500
<b>TOTAL</b>	<b><u>22,800,000</u></b>	<b><u>1,700,000</u></b>	<b><u>24,500,000</u></b>	<b><u>3,675,000</u></b>	<b><u>3,675,000</u></b>

## PRE-FUNDED COMMON STOCK PURCHASE WARRANT

### GUARDION HEALTH SERVICES, INC.

Warrant Shares: [ ]<sup>1</sup>

Initial Exercise Date: October 30, 2019

THIS PRE-FUNDED COMMON STOCK PURCHASE WARRANT (the “Warrant”) certifies that, for value received, \_\_\_\_\_ or its assigns (the “Holder”) is entitled, upon the terms and subject to the limitations on exercise and the conditions hereinafter set forth, at any time on or after the date hereof (the “Initial Exercise Date”) and until this Warrant is exercised in full (the “Termination Date”) but not thereafter, to subscribe for and purchase from Guardion Health Services, Inc., a Delaware corporation (the “Company”), up to \_\_\_\_\_ shares (as subject to adjustment hereunder, the “Warrant Shares”) of Common Stock. The purchase price of one share of Common Stock under this Warrant shall be equal to the Exercise Price, as defined in Section 2(b).

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

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

“Bid Price” 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, the bid price of the Common Stock for the time in question (or the nearest preceding date) on the Trading Market on which the Common Stock is then listed or quoted as reported by Bloomberg L.P. (based on a Trading Day from 9:30 a.m. (New York City time) to 4:02 p.m. (New York City time)), (b) if OTCQB or OTCQX is not a Trading Market, the volume weighted average price of the Common Stock for such date (or the nearest preceding date) on OTCQB or OTCQX as applicable, (c) if the Common Stock is not then listed or quoted for trading on OTCQB or OTCQX and if prices for the Common Stock are then reported on the Pink Open Market (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 Holders of a majority in interest of the Warrants then outstanding and reasonably acceptable to the Company, the fees and expenses of which shall be paid by the Company.

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

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

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<sup>1</sup> Up to 1,700,000 shares of common stock.

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“Common Stock” means the common stock of the Company, par value \$0.001 per share, and any other class of securities into which such securities may hereafter be reclassified or changed.

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

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

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

“Registration Statement” means the Company’s registration statement on Form S-1 (File No. 333-234322).

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

“Subsidiary” means any subsidiary of the Company and shall, where applicable, also include any direct or indirect subsidiary of the Company formed or acquired after the date hereof.

“Trading Day” means a day on which the Common Stock is traded on a Trading Market.

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

“Transfer Agent” means VStock Transfer, the current transfer agent of the Company with a mailing address of 8 Lafayette Pl, Woodmere, New York 11598, a phone number of (212) 828-8436 and an email address of shay@vstocktransfer.com, and any successor transfer agent of the Company.

“VWAP” means, for any date, the price determined by the first of the following clauses that applies: (a) if the Common Stock is then listed or quoted on a Trading Market, the daily volume weighted average price of the Common Stock for such date (or the nearest preceding date) on the Trading Market on which the Common Stock is then listed or quoted as reported by Bloomberg L.P. (based on a Trading Day from 9:30 a.m. (New York City time) to 4:02 p.m. (New York City time)), (b) if OTCQB or OTCQX is not a Trading Market, the volume weighted average price of the Common Stock for such date (or the nearest preceding date) on OTCQB or OTCQX as applicable, (c) if the Common Stock is not then listed or quoted for trading on OTCQB or OTCQX and if prices for the Common Stock are then reported on the Pink Open Market (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 holders of a majority in interest of the Warrants then outstanding and reasonably acceptable to the Company, the fees and expenses of which shall be paid by the Company.

“Warrants” means this Warrant and other Pre-Funded Common Stock purchase warrants issued by the Company pursuant to the Registration Statement.

Section 2. Exercise.

a) Exercise of Warrant. Subject to the provisions of Section 2(e) herein, exercise of the purchase rights represented by this Warrant may be made, in whole or in part, at any time or times on or after the Initial Exercise Date and on or before the Termination Date by delivery to the Company of a duly executed facsimile copy or PDF copy submitted by e-mail (or e-mail attachment) of the Notice of Exercise in the form annexed hereto (the “Notice of Exercise”). Within the earlier of (i) two (2) Trading Days and (ii) the number of Trading Days comprising the Standard Settlement Period (as defined in Section 2(d)(i) herein) following the date of exercise as aforesaid, the Holder shall deliver the aggregate Exercise Price for the Warrant Shares specified in the applicable Notice of Exercise by wire transfer or cashier’s check drawn on a United States bank unless the cashless exercise procedure specified in Section 2(c) below is specified in the applicable Notice of Exercise. No ink-original Notice of Exercise shall be required, nor shall any medallion guarantee (or other type of guarantee or notarization) of any Notice of Exercise be required. Notwithstanding anything herein to the contrary, the Holder shall not be required to physically surrender this Warrant to the Company until the Holder has purchased all of the Warrant Shares available hereunder and the Warrant has been exercised in full, in which case, the Holder shall surrender this Warrant to the Company for cancellation within three (3) Trading Days of the date on which the final Notice of Exercise is delivered to the Company. Partial exercises of this Warrant resulting in purchases of a portion of the total number of Warrant Shares available hereunder shall have the effect of lowering the outstanding number of Warrant Shares purchasable hereunder in an amount equal to the applicable number of Warrant Shares purchased. The Holder and the Company shall maintain records showing the number of Warrant Shares purchased and the date of such purchases. The Company shall deliver any objection to any Notice of Exercise within one (1) Trading Day of receipt of such notice. **The Holder and any assignee, by acceptance of this Warrant, acknowledge and agree that, by reason of the provisions of this paragraph, following the purchase of a portion of the Warrant Shares hereunder, the number of Warrant Shares available for purchase hereunder at any given time may be less than the amount stated on the face hereof.**

b) Exercise Price. The aggregate exercise price of this Warrant, except for a nominal exercise price of \$0.01 per Warrant Share, was pre-funded to the Company on or prior to the Initial Exercise Date and, consequently, no additional consideration (other than the nominal exercise price of \$0.01 per Warrant Share) shall be required to be paid by the Holder to any Person to effect any exercise of this Warrant. The Holder shall not be entitled to the return or refund of all, or any portion, of such pre-paid aggregate exercise price under any circumstance or for any reason whatsoever, including in the event this Warrant shall not have been exercised prior to the Termination Date. The remaining unpaid exercise price per share of Common Stock under this Warrant shall be \$0.01, subject to adjustment hereunder (the “Exercise Price”).

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

(A)= as applicable: (i) the VWAP on the Trading Day immediately preceding the date of the applicable Notice of Exercise if such Notice of Exercise is (1) both executed and delivered pursuant to Section 2(a) hereof on a day that is not a Trading Day or (2) both executed and delivered pursuant to Section 2(a) hereof on a Trading Day prior to the opening of “regular trading hours” (as defined in Rule 600(b)(68) of Regulation NMS promulgated under the federal securities laws) on such Trading Day, (ii) at the option of the Holder, either (y) the VWAP on the Trading Day immediately preceding the date of the applicable Notice of Exercise or (z) the Bid Price of the Common Stock on the principal Trading Market as reported by Bloomberg L.P. as of the time of the Holder’s execution of the applicable Notice of Exercise if such Notice of Exercise is executed during “regular trading hours” on a Trading Day and is delivered within two (2) hours thereafter (including until two (2) hours after the close of “regular trading hours” on a Trading Day) pursuant to Section 2(a) hereof or (iii) the VWAP on the date of the applicable Notice of Exercise if the date of such Notice of Exercise is a Trading Day and such Notice of Exercise is both executed and delivered pursuant to Section 2(a) hereof after the close of “regular trading hours” on such Trading Day;

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

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

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

d) Mechanics of Exercise.

i. Delivery of Warrant Shares Upon Exercise. The Company shall cause the Warrant Shares purchased hereunder to be transmitted by the Transfer Agent to the Holder by crediting the account of the Holder's or its designee's balance account with The Depository Trust Company through its Deposit or Withdrawal at Custodian system ("DWAC") if the Company is then a participant in such system and either (A) there is an effective registration statement permitting the issuance of the Warrant Shares to or resale of the Warrant Shares by the Holder or (B) this Warrant is being exercised via cashless exercise, and otherwise by physical delivery of a certificate, registered in the Company's share register in the name of the Holder or its designee, for the number of Warrant Shares to which the Holder is entitled pursuant to such exercise to the address specified by the Holder in the Notice of Exercise by the date that is the earliest of (i) two (2) Trading Days after the delivery to the Company of the Notice of Exercise, (ii) one (1) Trading Day after delivery of the aggregate Exercise Price to the Company and (iii) the number of Trading Days comprising the Standard Settlement Period after the delivery to the Company of the Notice of Exercise (such date, the "Warrant Share Delivery Date"). Upon delivery of the Notice of Exercise, the Holder shall be deemed for all corporate purposes to have become the holder of record of the Warrant Shares with respect to which this Warrant has been exercised, irrespective of the date of delivery of the Warrant Shares, provided that payment of the aggregate Exercise Price (other than in the case of a cashless exercise) is received within the earlier of (i) two (2) Trading Days and (ii) the number of Trading Days comprising the Standard Settlement Period following delivery of the Notice of Exercise. If the Company fails for any reason to deliver to the Holder the Warrant Shares subject to a Notice of Exercise by the Warrant Share Delivery Date, the Company shall pay to the Holder, in cash, as liquidated damages and not as a penalty, for each \$1,000 of Warrant Shares subject to such exercise (based on the VWAP of the Common Stock on the date of the applicable Notice of Exercise), \$10 per Trading Day (increasing to \$20 per Trading Day on the fifth (5th) Trading Day after such liquidated damages begin to accrue) for each Trading Day after such Warrant Share Delivery Date until such Warrant Shares are delivered or Holder rescinds such exercise. The Company agrees to maintain a transfer agent that is a participant in the FAST program so long as this Warrant remains outstanding and exercisable. As used herein, "Standard Settlement Period" means the standard settlement period, expressed in a number of Trading Days, on the Company's primary Trading Market with respect to the Common Stock as in effect on the date of delivery of the Notice of Exercise. Notwithstanding the foregoing, with respect to any Notice (s) of Exercise delivered on or prior to 12:00 p.m. (New York City time) on the Initial Exercise Date, which may be delivered at any time after the time of execution of the Underwriting Agreement, dated October 28, 2019 between the Company and Maxim Group LLC, the Company agrees to deliver the Warrant Shares subject to such notice(s) by 4:00 p.m. (New York City time) on the Initial Exercise Date.

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

iii. Rescission Rights. If the Company fails to cause the Transfer Agent to transmit to the Holder the Warrant Shares pursuant to Section 2(d)(i) by the Warrant Share Delivery Date, then the Holder will have the right to rescind such exercise.

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

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

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

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

e) Holder's Exercise Limitations. The Company shall not effect any exercise of this Warrant, and a Holder shall not have the right to exercise any portion of this Warrant, pursuant to Section 2 or otherwise, to the extent that after giving effect to such issuance after exercise as set forth on the applicable Notice of Exercise, the Holder (together with the Holder's Affiliates, and any other Persons acting as a group together with the Holder or any of the Holder's Affiliates (such Persons, "Attribution Parties")), would beneficially own in excess of the Beneficial Ownership Limitation (as defined below). For purposes of the foregoing sentence, the number of shares of Common Stock beneficially owned by the Holder and its Affiliates and Attribution Parties shall include the number of shares of Common Stock issuable upon exercise of this Warrant with respect to which such determination is being made, but shall exclude the number of shares of Common Stock which would be issuable upon (i) exercise of the remaining, nonexercised portion of this Warrant beneficially owned by the Holder or any of its Affiliates 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 the Holder or any of its Affiliates or Attribution Parties. Except as set forth in the preceding sentence, for purposes of this Section 2(e), beneficial ownership shall be calculated in accordance with Section 13(d) of the Exchange Act and the rules and regulations promulgated thereunder, it being acknowledged by the Holder that the Company is not representing to the Holder that such calculation is in compliance with Section 13(d) of the Exchange Act and the Holder is solely responsible for any schedules required to be filed in accordance therewith. To the extent that the limitation contained in this Section 2(e) applies, the determination of whether this Warrant is exercisable (in relation to other securities owned by the Holder together with any Affiliates and Attribution Parties) and of which portion of this Warrant is exercisable shall be in the sole discretion of the Holder, and the submission of a Notice of Exercise shall be deemed to be the Holder's determination of whether this Warrant is exercisable (in relation to other securities owned by the Holder together with any Affiliates and Attribution Parties) and of which portion of this Warrant is exercisable, in each case subject to the Beneficial Ownership Limitation, and the Company shall have no obligation to verify or confirm the accuracy of such determination. In addition, a determination as to any group status as contemplated above shall be determined in accordance with Section 13(d) of the Exchange Act and the rules and regulations promulgated thereunder. For purposes of this Section 2(e), in determining the number of outstanding shares of Common Stock, a Holder may rely on the number of outstanding shares of Common Stock as reflected in (A) the Company's most recent periodic or annual report filed with the Commission, as the case may be, (B) a more recent public announcement by the Company or (C) a more recent written notice by the Company or the Transfer Agent setting forth the number of shares of Common Stock outstanding. Upon the written or oral request of a Holder, the Company shall within one Trading Day confirm orally and in writing to the Holder the number of shares of Common Stock then outstanding. In any case, the number of outstanding shares of Common Stock shall be determined after giving effect to the conversion or exercise of securities of the Company, including this Warrant, by the Holder or its Affiliates or Attribution Parties since the date as of which such number of outstanding shares of Common Stock was reported. The "Beneficial Ownership Limitation" shall be [4.99%/9.99%] of the number of shares of the Common Stock outstanding immediately after giving effect to the issuance of shares of Common Stock issuable upon exercise of this Warrant. The Holder, upon notice to the Company, may increase or decrease the Beneficial Ownership Limitation provisions of this Section 2(e), provided that the Beneficial Ownership Limitation in no event exceeds 9.99% of the number of shares of the Common Stock outstanding immediately after giving effect to the issuance of shares of Common Stock upon exercise of this Warrant held by the Holder and the provisions of this Section 2(e) shall continue to apply. Any increase in the Beneficial Ownership Limitation will not be effective until the 61<sup>st</sup> day after such notice is delivered to the Company. The provisions of this paragraph shall be construed and implemented in a manner otherwise than in strict conformity with the terms of this Section 2(e) to correct this paragraph (or any portion hereof) which may be defective or inconsistent with the intended Beneficial Ownership Limitation herein contained or to make changes or supplements necessary or desirable to properly give effect to such limitation. The limitations contained in this paragraph shall apply to a successor holder of this Warrant.

Section 3. Certain Adjustments.

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

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

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

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

e) [Reserved.]

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

g) Notice to Holder.

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

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

Section 4. Transfer of Warrant.

a) Transferability. This Warrant and all rights hereunder are transferable, in whole or in part, upon surrender of this Warrant at the principal office of the Company or its designated agent, together with a written assignment of this Warrant substantially in the form attached hereto duly executed by the Holder or its agent or attorney and funds sufficient to pay any transfer taxes payable upon the making of such transfer. Upon such surrender and, if required, such payment, the Company shall execute and deliver a new Warrant or Warrants in the name of the assignee or assignees, as applicable, and in the denomination or denominations specified in such instrument of assignment, and shall issue to the assignor a new Warrant evidencing the portion of this Warrant not so assigned, and this Warrant shall promptly be cancelled. Notwithstanding anything herein to the contrary, the Holder shall not be required to physically surrender this Warrant to the Company unless the Holder has assigned this Warrant in full, in which case, the Holder shall surrender this Warrant to the Company within three (3) Trading Days of the date on which the Holder delivers an assignment form to the Company assigning this Warrant in full. This Warrant, if properly assigned in accordance herewith, may be exercised by a new holder for the purchase of Warrant Shares without having a new Warrant issued.

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

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

Section 5. Miscellaneous.

a) No Rights as Stockholder Until Exercise; No Settlement in Cash. This Warrant does not entitle the Holder to any voting rights, dividends or other rights as a stockholder of the Company prior to the exercise hereof as set forth in Section 2(d)(i), except as expressly set forth in Section 3. Without limiting the rights of a Holder to receive Warrant Shares on a “cashless exercise,” and to receive the cash payments contemplated pursuant to Sections 2(d)(i) and 2(d)(iv), in no event, including if the Company is for any reason unable to issue and deliver Warrant Shares upon exercise of this Warrant as required pursuant to the terms hereof, shall the Company be required to net cash settle an exercise of this Warrant or cash settle in any other form.

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

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

d) Authorized Shares.

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

Except and to the extent as waived or consented to by the Holder, the Company shall not by any action, including, without limitation, amending its certificate of incorporation or through any reorganization, transfer of assets, consolidation, merger, dissolution, issue or sale of securities or any other voluntary action, avoid or seek to avoid the observance or performance of any of the terms of this Warrant, but will at all times in good faith assist in the carrying out of all such terms and in the taking of all such actions as may be necessary or appropriate to protect the rights of Holder as set forth in this Warrant against impairment. Without limiting the generality of the foregoing, the Company will (i) not increase the par value of any Warrant Shares above the amount payable therefor upon such exercise immediately prior to such increase in par value, (ii) take all such action as may be necessary or appropriate in order that the Company may validly and legally issue fully paid and nonassessable Warrant Shares upon the exercise of this Warrant and

(iii) use commercially reasonable efforts to obtain all such authorizations, exemptions or consents from any public regulatory body having jurisdiction thereof, as may be, necessary to enable the Company to perform its obligations under this Warrant.

Before taking any action which would result in an adjustment in the number of Warrant Shares for which this Warrant is exercisable or in the Exercise Price, the Company shall obtain all such authorizations or exemptions thereof, or consents thereto, as may be necessary from any public regulatory body or bodies having jurisdiction thereof.

e) Governing Law. All questions concerning the construction, validity, enforcement and interpretation of this Warrant shall be governed by and construed and enforced in accordance with the internal laws of the State of New York, without regard to the principles of conflicts of law thereof. Each party agrees that all legal proceedings concerning the interpretations, enforcement and defense of the transactions contemplated by this Warrant (whether brought against a party hereto or their respective affiliates, directors, officers, shareholders, partners, members, employees or agents) shall be commenced exclusively in the state and federal courts sitting in the City of New York. Each party hereby irrevocably submits to the exclusive jurisdiction of the state and federal courts sitting in the City of New York, Borough of Manhattan for the adjudication of any dispute hereunder or in connection herewith or with any transaction contemplated hereby or discussed herein, and hereby irrevocably waives, and agrees not to assert in any suit, action or proceeding, any claim that it is not personally subject to the jurisdiction of any such court, that such suit, action or proceeding is improper or is an inconvenient venue for such proceeding. Each party hereby irrevocably waives personal service of process and consents to process being served in any such suit, action or proceeding by mailing a copy thereof via registered or certified mail or overnight delivery (with evidence of delivery) to such party at the address in effect for notices to it under this Warrant and agrees that such service shall constitute good and sufficient service of process and notice thereof. Nothing contained herein shall be deemed to limit in any way any right to serve process in any other manner permitted by law. If either party shall commence an action, suit or proceeding to enforce any provisions of this Warrant, the prevailing party in such action, suit or proceeding shall be reimbursed by the other party for their reasonable attorneys' fees and other costs and expenses incurred with the investigation, preparation and prosecution of such action or proceeding. Notwithstanding the foregoing, nothing in this paragraph shall limit or restrict the federal district court in which a Holder may bring a claim under the federal securities laws.

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

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

h) Notices. Any and all notices or other communications or deliveries to be provided by the Holders hereunder including, without limitation, any Notice of Exercise, shall be in writing and delivered personally, by facsimile or e-mail, or sent by a nationally recognized overnight courier service, addressed to the Company, at 15150 Avenue of Science, Suite 200, San Diego, California 92128, Attention: Chief Executive Officer, facsimile number (858) 605-9055, E-mail: mfavish@guardionhealth.com, or such other facsimile number, email address or address as the Company may specify for such purposes by notice to the Holders. Any and all notices or other communications or deliveries to be provided by the Company hereunder shall be in writing and delivered personally, by facsimile or e-mail, or sent by a nationally recognized overnight courier service addressed to each Holder at the facsimile number, e-mail address or address of such Holder appearing on the books of the Company. Any notice or other communication or deliveries hereunder shall be deemed given and effective on the earliest of (i) the time of transmission, if such notice or communication is delivered via facsimile at the facsimile number or via e-mail at the e-mail address set forth in this Section prior to 5:30 p.m. (New York City time) on any date, (ii) the next Trading Day after the time of transmission, if such notice or communication is delivered via facsimile at the facsimile number or via e-mail at the e-mail address set forth in this Section on a day that is not a Trading Day or later than 5:30 p.m. (New York City time) on any Trading Day, (iii) the second Trading Day following the date of mailing, if sent by U.S. nationally recognized overnight courier service, or (iv) upon actual receipt by the party to whom such notice is required to be given. To the extent that any notice provided hereunder constitutes, or contains, material, non-public information regarding the Company or any Subsidiaries, the Company shall simultaneously file such notice with the Commission pursuant to a Current Report on Form 8-K.

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

j) Remedies. The Holder, in addition to being entitled to exercise all rights granted by law, including recovery of damages, will be entitled to specific performance of its rights under this Warrant. The Company agrees that monetary damages would not be adequate compensation for any loss incurred by reason of a breach by it of the provisions of this Warrant and hereby agrees to waive and not to assert the defense in any action for specific performance that a remedy at law would be adequate.

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

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

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

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

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*(Signature Page Follows)*

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

**GUARDION HEALTH SERVICES, INC.**

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

**NOTICE OF EXERCISE**

TO: GUARDION HEALTH SERVICES, INC.

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

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

in lawful money of the United States; or

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

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

\_\_\_\_\_

The Warrant Shares shall be delivered to the following DWAC Account Number:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

[SIGNATURE OF HOLDER]

Name of Investing Entity:

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

Name of Authorized Signatory:

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

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

\_\_\_\_\_

**ASSIGNMENT FORM**

*(To assign the foregoing Warrant, execute this form and supply required information. Do not use this form to purchase shares.)*

FOR VALUE RECEIVED, the foregoing Warrant and all rights evidenced thereby are hereby assigned to

Name:

(Please Print)

Address:

(Please Print)

Phone Number:

\_\_\_\_\_

Email Address:

\_\_\_\_\_

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

Holder's Signature:

Holder's Address:

Guardion Health Sciences, Inc.

and

VStock Transfer, LLC, as  
Warrant Agent

Warrant Agent Agreement

Dated as of October 30, 2019

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WARRANT AGENT AGREEMENT

WARRANT AGENT AGREEMENT, dated as of October 30, 2019 (“Agreement”), between Guardian Health Sciences, Inc., a Delaware corporation (the “Company”), and VStock Transfer, LLC (the “Warrant Agent”).

W I T N E S S E T H

**WHEREAS**, pursuant to a registered offering by the Company of shares of common stock, par value \$0.001 per share (the “Common Stock”), and Series B warrants to purchase shares of Common Stock (the “Warrants”), pursuant to an effective registration statement on Form S-1, as amended (File No. 333-234322) (the “Registration Statement”), the Company wishes to issue the Warrants in book-entry form entitling the respective holders of the Warrants (the “Holder”), which term shall include a Holder’s transferees, successors and assigns and “Holder” shall include, if the Warrants are held in “street name”, a Participant (as defined below) or a designee appointed by such Participant) to purchase up to 24,500,000 shares of Common Stock upon exercise of Series B Warrants upon the terms and subject to the conditions hereinafter set forth (the “Offering”);

**WHEREAS**, the shares of Common Stock and Warrants to be issued in connection with the Offering shall be immediately separable and will be issued separately, but will be purchased together in the Offering; and

**WHEREAS**, the Company wishes the Warrant Agent to act on behalf of the Company, and the Warrant Agent is willing so to act, in connection with the issuance, registration, transfer, exchange, exercise and replacement of the Warrants and, in the Warrant Agent’s capacity as the Company’s transfer agent, the delivery of the Warrant Shares (as defined below).

**NOW, THEREFORE**, in consideration of the premises and the mutual agreements herein set forth, the parties hereby agree as follows:

Section 1. Certain Definitions. For purposes of this Agreement, the following terms have the meanings indicated:

(a) “Affiliate” has the meaning ascribed to it in Rule 12b-2 under the Securities Exchange Act of 1934, as amended (the “Exchange Act”).

(b) “Business Day” means any day except any Saturday, any Sunday, any day which is a federal legal holiday in the United States or any day on which the Nasdaq Stock Market is authorized or required by law or other governmental action to close.

(c) “Close of Business” on any given date means 5:00 p.m., New York City time, on such date; provided, however, that if such date is not a Business Day it means 5:00 p.m., New York City time, on the next succeeding Business Day.

(e) “Person” means an individual, corporation, association, partnership, limited liability company, joint venture, trust, unincorporated organization, government or political subdivision thereof or governmental agency or other entity.

(g) “Warrant Certificate” means a certificate in substantially the form attached as Exhibit 1 hereto, representing such number of Warrant Shares as is indicated therein, provided that any reference to the delivery of a Warrant Certificate in this Agreement shall include delivery of notice from the Depositary or a Participant (each as defined below) of the transfer or exercise of Warrant in the form of a Global Warrant (as defined below).

(H) “Warrant Shares” means the shares of Common Stock underlying the Warrants and issuable upon exercise of the Warrants.

All other capitalized terms used but not otherwise defined herein shall have the meaning ascribed to such terms in the Warrant Certificate.

Section 2. Appointment of Warrant Agent. The Company hereby appoints the Warrant Agent to act as agent for the Company in accordance with the terms and conditions hereof, and the Warrant Agent hereby accepts such appointment.

Section 3. Global Warrants.

(a) The Warrants shall be issuable in book-entry form (the “Global Warrants”). All of the Warrants shall initially be represented by one or more Global Warrants, in the form of the Warrant Certificate, deposited with the Warrant Agent and registered in the name of Cede & Co., a nominee of The Depository Trust Company (the “Depository”), or as otherwise directed by the Depository. Ownership of beneficial interests in the Warrants shall be shown on, and the transfer of such ownership shall be effected through, records maintained by (i) the Depository or its nominee for each Global Warrant or (ii) institutions that have accounts with the Depository (such institution, with respect to a Warrant in its account, a “Participant”).

(b) If the Depository subsequently ceases to make its book-entry settlement system available for the Warrants, the Company may instruct the Warrant Agent regarding other arrangements for book-entry settlement. In the event that 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 Global Warrant, and the Company shall instruct the Warrant Agent to deliver to each Holder a Warrant Certificate.

(c) A Holder has the right to elect at any time or from time to time a Warrant Exchange (as defined below) pursuant to a Warrant Certificate Request Notice (as defined below). Upon written notice by a Holder to the Warrant Agent for the exchange of some or all of such Holder’s Global Warrants for a Warrant Certificate evidencing the same number of Warrants, which request shall be in the form attached hereto as Annex A (a “Warrant Certificate Request Notice” and the date of delivery of such Warrant Certificate Request Notice by the Holder, the “Warrant Certificate Request Notice Date” and the deemed surrender upon delivery by the Holder of a number of Global Warrants for the same number of Warrants evidenced by a Warrant Certificate, a “Warrant Exchange”), the Warrant Agent shall promptly effect the Warrant Exchange and shall promptly issue and deliver to the Holder a Warrant Certificate for such number of Warrants in the name set forth in the Warrant Certificate Request Notice. Such Warrant Certificate shall be dated the issue date of the Warrants, shall be executed either manually or by facsimile by an authorized signatory of the Company, shall be in the form attached hereto as Exhibit 1, and shall be reasonably acceptable in all respects to such Holder. In connection with a Warrant Exchange, the Company agrees to deliver, or to direct the Warrant Agent to deliver, the Warrant Certificate to the Holder within three (3) Business Days of the Warrant Certificate Request Notice pursuant to the delivery instructions in the Warrant Certificate Request Notice (“Warrant Certificate Delivery Date”). If the Company fails for any reason to deliver to the Holder the Warrant Certificate subject to the Warrant Certificate Request Notice by the Warrant Certificate Delivery Date, the Company shall pay to the Holder, in cash, as liquidated damages and not as a penalty, for each \$1,000 of Warrant Shares evidenced by such Warrant Certificate (based on the VWAP (as defined in the Warrants) of the Common Stock on the Warrant Certificate Request Notice Date), \$10 per Business Day for each Business Day after such Warrant Certificate Delivery Date until such Warrant Certificate is delivered or, prior to delivery of such Warrant Certificate, the Holder rescinds such Warrant Exchange. The Company covenants and agrees that, upon the date of delivery of the Warrant Certificate Request Notice, the Holder shall be deemed to be the holder of the Warrant Certificate and, notwithstanding anything to the contrary set forth herein, the Warrant Certificate shall be deemed for all purposes to contain all of the terms and conditions of the Warrants evidenced by such Warrant Certificate and the terms of this Agreement, other than Sections 3(c) and 9 herein, shall not apply to the Warrants evidenced by the Warrant Certificate. Notwithstanding anything herein to the contrary, the Warrant Agent shall act as warrant agent with respect to any physical Warrant Certificate requested and issued pursuant to this section.

Section 4. Form of Warrant Certificates. The Warrant Certificate, together with the form of election to purchase Common Stock (“Notice of Exercise”) and the form of assignment to be printed on the reverse thereof, shall be in the form of Exhibit 1 hereto.

Section 5. Countersignature and Registration. The Warrant Certificates shall be executed on behalf of the Company by its Chief Executive Officer or Chief Financial Officer, either manually or by facsimile signature, which signature shall be attested by the Secretary or an Assistant Secretary of the Company, either manually or by facsimile signature. The Warrant Certificates shall be countersigned by the Warrant Agent by original or facsimile signature and shall not be valid for any purpose unless so countersigned. In case any officer of the Company who shall have signed any of the Warrant Certificates shall cease to be such officer of the Company before countersignature by the Warrant Agent and issuance and delivery by the Company, such Warrant Certificates, nevertheless, may be countersigned by the Warrant Agent, issued and delivered with the same force and effect as though the person who signed such Warrant Certificate had not ceased to be such officer of the Company; and any Warrant Certificate may be signed on behalf of the Company by any person who, at the actual date of the execution of such Warrant Certificate, shall be a proper officer of the Company to sign such Warrant Certificate, although at the date of the execution of this Warrant Agreement any such person was not such an officer.

The Warrant Agent will keep or cause to be kept, at one of its offices, or at the office of one of its agents, books for registration and transfer of the Warrant Certificates issued hereunder. Such books shall show the names and addresses of the respective Holders of the Warrant Certificates, the number of warrants evidenced on the face of each of such Warrant Certificate and the date of each of such Warrant Certificate; provided that the Holders of the Warrant Certificates have provided to the Warrant Agent in writing all such information regarding the Holders. The Warrant Agent will create a special account for the issuance of Warrant Certificates.

Section 6. Transfer, Split Up, Combination and Exchange of Warrant Certificates; Mutilated, Destroyed, Lost or Stolen Warrant Certificates. With respect to the Global Warrant, subject to the provisions of the Warrant Certificate and the last sentence of this first paragraph of Section 6 and subject to applicable law, rules or regulations, or any “stop transfer” instructions the Company may give to the Warrant Agent, at any time after the closing date of the Offering, and at or prior to the Close of Business on the Termination Date (as such term is defined in the Warrant Certificate), any Warrant Certificate or Warrant Certificates or Global Warrant or Global Warrants may be transferred, split up, combined or exchanged for another Warrant Certificate or Warrant Certificates or Global Warrant or Global Warrants, entitling the Holder to purchase a like number of shares of Common Stock as the Warrant Certificate or Warrant Certificates or Global Warrant or Global Warrants surrendered then entitled such Holder to purchase. Any Holder desiring to transfer, split up, combine or exchange any Warrant Certificate or Global Warrant shall make such request in writing delivered to the Warrant Agent, and shall surrender the Warrant Certificate or Warrant Certificates to be transferred, split up, combined or exchanged at the principal office of the Warrant Agent, provided that no such surrender is applicable to the Holder of a Global Warrant. Any requested transfer of Warrants, whether in book-entry form or certificate form, shall be accompanied by reasonable evidence of authority of the party making such request that may be required by the Warrant Agent. Thereupon the Warrant Agent shall, subject to the last sentence of this first paragraph of Section 6, countersign and deliver to the Person entitled thereto a Warrant Certificate or Warrant Certificates, as the case may be, as so requested. The Company may require payment from the Holder of a sum sufficient to cover any tax or governmental charge that may be imposed in connection with any transfer, split up, combination or exchange of Warrant Certificates. The Company shall compensate the Warrant Agent per the fee schedule mutually agreed upon by the parties hereto and provided separately on the date hereof.

Upon receipt by the Company and the Warrant Agent of evidence reasonably satisfactory to them of the loss, theft, destruction or mutilation of a Warrant Certificate, and, in case of loss, theft or destruction, of indemnity or security in customary form and amount, and reimbursement to the Company and the Warrant Agent of all reasonable expenses incidental thereto, and upon surrender to the Warrant Agent and cancellation of the Warrant Certificate if mutilated, the Warrant Agent shall, on behalf of the Company, countersign and deliver a new Warrant Certificate of like tenor to the Holder in lieu of the Warrant Certificate so lost, stolen, destroyed or mutilated. The Warrant Agent may charge the Holder an administrative fee for processing the replacement of lost Warrant Certificates, which shall be charged only once in instances where a single surety bond obtained covers multiple certificates. The Warrant Agent may receive compensation from the surety companies or surety agents for administrative services provided to them. The Company agrees to secure a bond on behalf of the Holder in connection with the replacement of such Warrant Certificates, if requested by the Warrant Agent.

Section 7. Exercise of Warrants; Exercise Price; Termination Date.

(a) The Warrants shall be exercisable commencing on the Initial Exercise Date. The Warrants shall cease to be exercisable and shall terminate and become void, and all rights thereunder and under this Agreement shall cease, at or prior to the Close of Business on the Termination Date. Subject to the foregoing and to Section 7(b) below, the Holder of a Warrant may exercise the Warrant in whole or in part upon surrender of the Warrant Certificate, if required, with the executed Notice of Exercise and payment of the Exercise Price, which may be made, at the option of the Holder, by wire transfer or by certified or official bank check in United States dollars, to the Company at the principal office of the Company or to the office of one of its agents as may be designated by the Company from time to time. In the case of the Holder of a Global Warrant, the Holder shall deliver the executed Notice of Exercise and the payment of the Exercise Price as described herein. Notwithstanding any other provision in this Agreement, a holder whose interest in a Global Warrant is a beneficial interest in a Global Warrant held in book-entry form through the Depository (or another established clearing corporation performing similar functions), shall effect exercises by delivering to the Depository (or such other clearing corporation, as applicable) the appropriate instruction form for exercise, complying with the procedures to effect exercise that are required by the Depository (or such other clearing corporation, as applicable). No ink-original Notice of Exercise shall be required, nor shall any medallion guarantee (or other type of guarantee or notarization) of any Notice of Exercise be required.

(b) Upon receipt of a Notice of Exercise for a Cashless Exercise, the Company will promptly calculate and transmit to the Warrant Agent the number of Warrant Shares issuable in connection with such Cashless Exercise and deliver a copy of the Notice of Exercise to the Warrant Agent, which shall issue such number of Warrant Shares in connection with such Cashless Exercise.

(c) Upon the Warrant Agent's receipt of a Warrant Certificate at or prior to the Close of Business on the Termination Date set forth in such Warrant Certificate, with the executed Notice of Exercise, accompanied by payment of the Exercise Price for the shares to be purchased (other than in the case of a Cashless Exercise) and an amount equal to any applicable tax, governmental charge or expense reimbursement referred to in Section 6 by wire transfer, or by certified check or bank draft payable to the order of the Company (or, in the case of the Holder of a Global Warrant, the delivery of the executed Notice of Exercise and the payment of the Exercise Price (other than in the case of a Cashless Exercise) and any other applicable amounts as set forth herein), the Warrant Agent shall cause the Warrant Shares underlying such Warrant Certificate or Global Warrant to be delivered to or upon the order of the Holder of such Warrant Certificate or Global Warrant, registered in such name or names as may be designated by such Holder, no later than the Warrant Share Delivery Date (as such term is defined in the Warrant Certificate). If the Company is then a participant in the DWAC system of the Depository and either (A) there is an effective registration statement permitting the issuance of the Warrant Shares to or resale of the Warrant Shares by Holder or (B) the Warrant is being exercised via Cashless Exercise, then the certificates for Warrant Shares shall be transmitted by the Warrant Agent to the Holder by crediting the account of the Holder's broker with the Depository through its DWAC system. For the avoidance of doubt, if the Company becomes obligated to pay any amounts to any Holders pursuant to Section 2(d)(i) or 2(d)(iv) of the Warrant Certificate, such obligation shall be solely that of the Company and not that of the Warrant Agent. Notwithstanding anything else to the contrary in this Agreement, except in the case of a Cashless Exercise, if any Holder fails to duly deliver payment to the Warrant Agent of an amount equal to the aggregate Exercise Price of the Warrant Shares to be purchased upon exercise of such Holder's Warrant as set forth in Section 7(a) hereof by the Warrant Share Delivery Date, the Warrant Agent will not be obligated to deliver such Warrant Shares (via DWAC or otherwise) until following receipt of such payment, and the applicable Warrant Share Delivery Date shall be deemed extended by one day for each day (or part thereof) until such payment is delivered to the Warrant Agent. For purposes of Regulation SHO, a holder whose interest in the Warrant is a beneficial interest in a Global Warrant held in book-entry form through the Depository (or another established clearing corporation performing similar functions) shall be deemed to have exercised its interest in this Warrant upon instructing its broker that is a Participant to exercise its interest in the Warrant, provided that payment of the aggregate Exercise Price (other than in the case of a Cashless Exercise) is received on or prior to the Warrant Share Delivery Date.

(d) Intentionally Omitted.

(e) In case the Holder of any Warrant Certificate shall exercise fewer than all Warrants evidenced thereby, a new Warrant Certificate evidencing the number of Warrants equivalent to the number of Warrants remaining unexercised may be issued by the Warrant Agent to the Holder of such Warrant Certificate or to his duly authorized assigns in accordance with Section 2(d)(ii) of the Warrant Certificate, subject to the provisions of Section 6 hereof.

Section 8. Cancellation and Destruction of Warrant Certificates. All Warrant Certificates surrendered for the purpose of exercise, transfer, split up, combination or exchange shall, if surrendered to the Company or to any of its agents, be delivered to the Warrant Agent for cancellation or in canceled form, or, if surrendered to the Warrant Agent, shall be canceled by it, and no Warrant Certificates shall be issued in lieu thereof except as expressly permitted by any of the provisions of this Agreement. The Company shall deliver to the Warrant Agent for cancellation and retirement, and the Warrant Agent shall so cancel and retire, any other Warrant Certificate purchased or acquired by the Company otherwise than upon the exercise thereof. If requested in writing by the Company, the Warrant Agent shall deliver a copy of all cancelled certificates and confirmation of all canceled Warrant Certificates to the Company.

Section 9. Certain Representations; Reservation and Availability of Shares of Common Stock or Cash.

(a) This Agreement has been duly authorized, executed and delivered by the Company and, assuming due authorization, execution and delivery hereof by the Warrant Agent, constitutes a valid and legally binding obligation of the Company enforceable against the Company in accordance with its terms, and the Warrants have been duly authorized, executed and issued by the Company and, assuming due authentication thereof by the Warrant Agent pursuant hereto and payment therefor by the Holders as provided in the Registration Statement, constitute valid and legally binding obligations of the Company enforceable against the Company in accordance with their terms and entitled to the benefits hereof; in each case except as enforceability may be limited by bankruptcy, insolvency, reorganization, moratorium and other similar laws relating to or affecting creditors' rights generally or by general equitable principles (regardless of whether such enforceability is considered in a proceeding in equity or at law).

(b) As of the date hereof, prior to the offering, the authorized capital stock of the Company consists of (i) 90,000,000 shares of Common Stock authorized, of which 50,482,562 shares of Common Stock are issued and outstanding, and 4,215,238 shares of Common Stock are reserved for issuance upon exercise of the Warrants and stock options, and (ii) 10,000,000 shares of preferred stock are authorized, of which no shares are issued and outstanding. Except as disclosed in the Registration Statement, there are no other outstanding obligations, warrants, options or other rights to subscribe for or purchase from the Company any class of capital stock of the Company.

(c) The Company covenants and agrees that it will cause to be reserved and kept available out of its authorized and unissued shares of Common Stock or its authorized and issued shares of Common Stock held in its treasury, free from preemptive rights, the number of shares of Common Stock that will be sufficient to permit the exercise in full of all outstanding Warrants.

(d) The Warrant Agent will maintain books and records reasonably necessary to record the issuance of Common Stock upon the exercise of Warrants.

(e) The Company further covenants and agrees that it will pay when due and payable any and all federal and state transfer taxes and charges which may be payable in respect of the original issuance or delivery of the Warrant Certificates or certificates evidencing Common Stock upon exercise of the Warrants. The Company shall not, however, be required to pay any tax or governmental charge which may be payable in respect of any transfer involved in the transfer or delivery of Warrant Certificates or the issuance or delivery of certificates for Common Stock in a name other than that of the Holder of the Warrant Certificate evidencing Warrants surrendered for exercise or to issue or deliver any certificate for shares of Common Stock upon the exercise of any Warrants until any such tax or governmental charge shall have been paid (any such tax or governmental charge being payable by the Holder of such Warrant Certificate at the time of surrender) or until it has been established to the Company's reasonable satisfaction that no such tax or governmental charge is due.

Section 10. Common Stock Record Date. Each Person in whose name any certificate for shares of Common Stock is issued (or to whose broker's account is credited shares of Common Stock through the DWAC system) upon the exercise of Warrants shall for all purposes be deemed to have become the holder of record for the Common Stock represented thereby on, and such certificate shall be dated, the date on which submission of the Notice of Exercise was made, provided that the Warrant Certificate evidencing such Warrant is duly surrendered (but only if required herein) and payment of the Exercise Price (and any applicable transfer taxes) is received on or prior to the Warrant Share Delivery Date; provided, however, that if the date of submission of the Notice of Exercise is a date upon which the Common Stock transfer books of the Company are closed, such Person shall be deemed to have become the record holder of such shares on, and such certificate shall be dated, the next succeeding day on which the Common Stock transfer books of the Company are open.

Section 11. Adjustment of Exercise Price, Number of Shares of Common Stock or Number of the Company Warrants. The Exercise Price, the number of shares covered by each Warrant and the number of Warrants outstanding are subject to adjustment from time to time as provided in Section 3 of the Warrant Certificate. In the event that at any time, as a result of an adjustment made pursuant to Section 3 of the Warrant Certificate, the Holder of any Warrant thereafter exercised shall become entitled to receive any shares of capital stock of the Company other than shares of Common Stock, thereafter the number of such other shares so receivable upon exercise of any Warrant shall be subject to adjustment from time to time in a manner and on terms as nearly equivalent as practicable to the provisions with respect to the shares contained in Section 3 of the Warrant Certificate, and the provisions of Sections 7, 9 and 13 of this Agreement with respect to the shares of Common Stock shall apply on like terms to any such other shares. All Warrants originally issued by the Company subsequent to any adjustment made to the Exercise Price pursuant to the Warrant Certificate shall evidence the right to purchase, at the adjusted Exercise Price, the number of shares of Common Stock purchasable from time to time hereunder upon exercise of the Warrants, all subject to further adjustment as provided herein.

Section 12. Certification of Adjusted Exercise Price or Number of Shares of Common Stock. Whenever the Exercise Price or the number of shares of Common Stock issuable upon the exercise of each Warrant is adjusted as provided in Section 11 or 13, the Company shall (a) promptly prepare a certificate setting forth the Exercise Price of each Warrant as so adjusted, and a brief statement of the facts accounting for such adjustment, (b) promptly file with the Warrant Agent and with each transfer agent for the Common Stock a copy of such certificate and (c) instruct the Warrant Agent to send a brief summary thereof to each Holder of a Warrant Certificate.

Section 13. Fractional Shares of Common Stock.

(a) The Company shall not issue fractions of Warrants or distribute Warrant Certificates which evidence fractional Warrants. Whenever any fractional Warrant would otherwise be required to be issued or distributed, the actual issuance or distribution shall reflect a rounding of such fraction to the nearest whole Warrant (rounded up).

(b) The Company shall not issue fractions of shares of Common Stock upon exercise of Warrants or distribute stock certificates which evidence fractional shares of Common Stock. Whenever any fraction of a share of Common Stock would otherwise be required to be issued or distributed, the actual issuance or distribution in respect thereof shall be made in accordance with Section 2(d)(v) of the Warrant Certificate.

Section 14. Conditions of the Warrant Agent's Obligations. The Warrant Agent accepts its obligations herein set forth upon the terms and conditions hereof, including the following to all of which the Company agrees and to all of which the rights hereunder of the Holders from time to time of the Warrant Certificates shall be subject:

- (a) Compensation and Indemnification. The Company agrees promptly to pay the Warrant Agent the compensation detailed on Exhibit 2 hereto for all services rendered by the Warrant Agent and to reimburse the Warrant Agent for reasonable out-of-pocket expenses (including reasonable counsel fees) incurred without gross negligence or willful misconduct finally adjudicated to have been directly caused by the Warrant Agent in connection with the services rendered hereunder by the Warrant Agent. The Company also agrees to indemnify the Warrant Agent for, and to hold it harmless against, any loss, liability or expense incurred without gross negligence, or willful misconduct on the part of the Warrant Agent, finally adjudicated to have been directly caused by Warrant Agent hereunder, including the reasonable costs and expenses of defending against any claim of such liability. The Warrant Agent shall be under no obligation to institute or defend any action, suit, or legal proceeding in connection herewith or to take any other action likely to involve the Warrant Agent in expense, unless first indemnified to the Warrant Agent's satisfaction. The indemnities provided by this paragraph shall survive the resignation or discharge of the Warrant Agent or the termination of this Agreement. Anything in this Agreement to the contrary notwithstanding, in no event shall the Warrant Agent be liable under or in connection with the Agreement for indirect, special, incidental, punitive or consequential losses or damages of any kind whatsoever, including but not limited to lost profits, whether or not foreseeable, even if the Warrant Agent has been advised of the possibility thereof and regardless of the form of action in which such damages are sought, and the Warrant Agent's aggregate liability to the Company, or any of the Company's representatives or agents, under this Section 14(a) or under any other term or provision of this Agreement, whether in contract, tort, or otherwise, is expressly limited to, and shall not exceed in any circumstances, one years fees received by the Warrant Agent as fees and charges under this Agreement, but not including reimbursable expenses previously reimbursed to the Warrant Agent by the Company hereunder.

- (b) Agent for the Company. In acting under this Warrant Agreement and in connection with the Warrant Certificates, the Warrant Agent is acting solely as agent of the Company and does not assume any obligations or relationship of agency or trust for or with any of the Holders of Warrant Certificates or beneficial owners of Warrants.
- (c) Counsel. The Warrant Agent may consult with counsel satisfactory to it, which may include counsel for the Company, and the written advice of such counsel shall be full and complete authorization and protection in respect of any action taken, suffered or omitted by it hereunder in good faith and in accordance with the advice of such counsel.
- (d) Documents. The Warrant Agent shall be protected and shall incur no liability for or in respect of any action taken or omitted by it in reliance upon any Warrant Certificate, notice, direction, consent, certificate, affidavit, statement or other paper or document reasonably believed by it to be genuine and to have been presented or signed by the proper parties.
- (e) Certain Transactions. The Warrant Agent, and its officers, directors and employees, may become the owner of, or acquire any interest in, Warrants, with the same rights that it or they would have if it were not the Warrant Agent hereunder, and, to the extent permitted by applicable law, it or they may engage or be interested in any financial or other transaction with the Company and may act on, or as depository, trustee or agent for, any committee or body of Holders of Warrant Securities or other obligations of the Company as freely as if it were not the Warrant Agent hereunder. Nothing in this Warrant Agreement shall be deemed to prevent the Warrant Agent from acting as trustee under any indenture to which the Company is a party.
- (f) No Liability for Interest. Unless otherwise agreed with the Company, the Warrant Agent shall have no liability for interest on any monies at any time received by it pursuant to any of the provisions of this Agreement or of the Warrant Certificates.
- (g) No Liability for Invalidity. The Warrant Agent shall have no liability with respect to any invalidity of this Agreement or any of the Warrant Certificates (except as to the Warrant Agent's countersignature thereon).
- (h) No Responsibility for Representations. The Warrant Agent shall not be responsible for any of the recitals or representations herein or in the Warrant Certificates (except as to the Warrant Agent's countersignature thereon), all of which are made solely by the Company.
- (i) No Implied Obligations. The Warrant Agent shall be obligated to perform only such duties as are herein and in the Warrant Certificates specifically set forth and no implied duties or obligations shall be read into this Agreement or the Warrant Certificates against the Warrant Agent. The Warrant Agent shall not be under any obligation to take any action hereunder which may tend to involve it in any expense or liability, the payment of which within a reasonable time is not, in its reasonable opinion, assured to it. The Warrant Agent shall not be accountable or under any duty or responsibility for the use by the Company of any of the Warrant Certificates authenticated by the Warrant Agent and delivered by it to the Company pursuant to this Agreement or for the application by the Company of the proceeds of the Warrant Certificates. The Warrant Agent shall have no duty or responsibility in case of any default by the Company in the performance of its covenants or agreements contained herein or in the Warrant Certificates or in the case of the receipt of any written demand from a Holder of a Warrant Certificate with respect to such default, including, without limiting the generality of the foregoing, any duty or responsibility to initiate or attempt to initiate any proceedings at law.

Section 15. Purchase or Consolidation or Change of Name of Warrant Agent. Any corporation into which the Warrant Agent or any successor 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 or any successor Warrant Agent shall be party, or any corporation succeeding to the corporate trust business of the Warrant Agent or any successor Warrant Agent, shall be the successor to the Warrant Agent under this Agreement without the execution or filing of any paper or any further act on the part of any of the parties hereto, provided that such corporation would be eligible for appointment as a successor Warrant Agent under the provisions of Section 17. In case at the time such successor Warrant Agent shall succeed to the agency created by this Agreement any of the Warrant Certificates shall have been countersigned but not delivered, any such successor Warrant Agent may adopt the countersignature of the predecessor Warrant Agent and deliver such Warrant Certificates so countersigned; and in case at that time any of the Warrant Certificates shall not have been countersigned, any successor Warrant Agent may countersign such Warrant Certificates either in the name of the predecessor Warrant Agent or in the name of the successor Warrant Agent; and in all such cases such Warrant Certificates shall have the full force provided in the Warrant Certificates and in this Agreement.

In case at any time the name of the Warrant Agent shall be changed and at such time any of the Warrant Certificates shall have been countersigned but not delivered, the Warrant Agent may adopt the countersignature under its prior name and deliver Warrant Certificates so countersigned; and in case at that time any of the Warrant Certificates shall not have been countersigned, the Warrant Agent may countersign such Warrant Certificates either in its prior name or in its changed name; and in all such cases such Warrant Certificates shall have the full force provided in the Warrant Certificates and in this Agreement.

Section 16. Duties of Warrant Agent. The Warrant Agent undertakes the duties and obligations imposed by this Agreement upon the following terms and conditions, by all of which the Company, by its acceptance hereof, shall be bound:

(a) The Warrant Agent may consult with legal counsel reasonably acceptable to the Company (who may be legal counsel for the Company), and the opinion of such counsel shall be full and complete authorization and protection to the Warrant Agent as to any action taken or omitted by it in good faith and in accordance with such opinion.

(b) Whenever in the performance of its duties under this 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 certificate signed by the Chief Executive Officer or Chief Financial Officer of the Company; and such certificate shall be full authentication to the Warrant Agent for any action taken or suffered in good faith by it under the provisions of this Agreement in reliance upon such certificate.

(c) Subject to the limitation set forth in Section 14, the Warrant Agent shall be liable hereunder only for its own gross negligence or willful misconduct, or for a breach by it of this Agreement.

(d) The Warrant Agent shall not be liable for or by reason of any of the statements of fact or recitals contained in this Agreement or in the Warrant Certificates (except its countersignature thereof) by the Company or be required to verify the same, but all such statements and recitals are and shall be deemed to have been made by the Company only.

(e) The Warrant Agent shall not be under any responsibility in respect of the validity of this Agreement or the execution and delivery hereof (except the due execution hereof by the Warrant Agent) or in respect of the validity or execution of any Warrant Certificate (except its countersignature thereof); nor shall it be responsible for any breach by the Company of any covenant or condition contained in this Agreement or in any Warrant Certificate; nor shall it be responsible for the adjustment of the Exercise Price or the making of any change in the number of shares of Common Stock required under the provisions of Section 11 or 13 or responsible for the manner, method or amount of any such change or the ascertaining of the existence of facts that would require any such adjustment or change (except with respect to the exercise of Warrants evidenced by Warrant Certificates after actual notice of any adjustment of the Exercise Price); nor shall it by any act hereunder be deemed to make any representation or warranty as to the authorization or reservation of any shares of Common Stock to be issued pursuant to this Agreement or any Warrant Certificate or as to whether any shares of Common Stock will, when issued, be duly authorized, validly issued, fully paid and nonassessable.

(f) Each party hereto agrees that it will 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 other party hereto for the carrying out or performing by any party of the provisions of this Agreement.

(g) The Warrant Agent is hereby authorized to accept instructions with respect to the performance of its duties hereunder from the Chief Executive Officer or Chief Financial Officer of the Company, and to apply to such officers for advice or instructions in connection with its duties, and it shall not be liable and shall be indemnified and held harmless for any action taken or suffered to be taken by it in good faith in accordance with instructions of any such officer, provided Warrant Agent carries out such instructions without gross negligence or willful misconduct.

(h) The Warrant Agent and any shareholder, director, officer or employee of the Warrant Agent may buy, sell or deal in any of the Warrants or other securities of the Company or become pecuniarily interested in any transaction in which the Company may be interested, or contract with or lend money to the Company or otherwise act as fully and freely as though it were not Warrant Agent under this Agreement. Nothing herein shall preclude the Warrant Agent from acting in any other capacity for the Company or for any other legal entity.

(i) The Warrant Agent may execute and exercise any of the rights or powers hereby vested in it or perform any duty hereunder either itself or by or through its attorney or agents, and the Warrant Agent shall not be answerable or accountable for any act, default, neglect or misconduct of any such attorney or agents or for any loss to the Company resulting from any such act, default, neglect or misconduct, provided reasonable care was exercised in the selection and continued employment thereof.

Section 17. Change of Warrant Agent. The Warrant Agent may resign and be discharged from its duties under this Agreement upon 30 days' notice in writing sent to the Company and to the transfer agent of the Common Stock. The Company may remove the Warrant Agent or any successor Warrant Agent upon 30 days' notice in writing, sent to the Warrant Agent or successor Warrant Agent, as the case may be, and to each transfer agent of the Common Stock, and to the Holders of the Warrant Certificates. If the Warrant Agent shall resign or be removed or shall otherwise become incapable of acting, the Company shall appoint a successor to the Warrant Agent. If the Company shall fail to make such appointment within a period of 30 days after such removal or after it has been notified in writing of such resignation or incapacity by the resigning or incapacitated Warrant Agent or by the Holder of a Warrant Certificate (who shall, with such notice, submit his Warrant Certificate for inspection by the Company), then the Holder of any Warrant Certificate may apply to any court of competent jurisdiction for the appointment of a new Warrant Agent, provided that, for purposes of this Agreement, the Company shall be deemed to be the Warrant Agent until a new warrant agent is appointed. Any successor Warrant Agent, whether appointed by the Company or by such a court, shall be a corporation organized and doing business under the laws of the United States or of a state thereof, in good standing, which is authorized under such laws to exercise corporate trust powers and is subject to supervision or examination by federal or state authority and which has at the time of its appointment as Warrant Agent a combined capital and surplus of at least \$50,000,000. After appointment, the successor Warrant Agent shall be vested with the same powers, rights, duties and responsibilities as if it had been originally named as Warrant Agent without further act or deed; but the predecessor Warrant Agent shall deliver and transfer to the successor Warrant Agent any property at the time held by it hereunder, and execute and deliver any further assurance, conveyance, act or deed necessary for the purpose. Not later than the effective date of any such appointment, the Company shall file notice thereof in writing with the predecessor Warrant Agent and each transfer agent of the Common Stock, and mail a notice thereof in writing to the Holders of the Warrant Certificates. However, failure to give any notice provided for in this Section 17, or any defect therein, shall not affect the legality or validity of the resignation or removal of the Warrant Agent or the appointment of the successor Warrant Agent, as the case may be.

Section 18. Issuance of New Warrant Certificates. Notwithstanding any of the provisions of this Agreement or of the Warrants to the contrary, the Warrant Agent, on behalf of the Company may, at the Company's option, issue new Warrant Certificates evidencing Warrants in such form as may be approved by the Board of Directors to reflect any adjustment or change in the Exercise Price per share and the number or kind or class of shares of stock or other securities or property purchasable under the several Warrant Certificates made in accordance with the provisions of this Agreement.

Section 19. Notices. Notices or demands authorized by this Agreement to be given or made (i) by the Warrant Agent or by the Holder of any Warrant Certificate to or on the Company, (ii) subject to the provisions of Section 17, by the Company or by the Holder of any Warrant Certificate to or on the Warrant Agent or (iii) by the Company or the Warrant Agent to the Holder of any Warrant Certificate, shall be deemed given (a) on the date delivered, if delivered personally, (b) on the first Business Day following the deposit thereof with Federal Express or another recognized overnight courier, if sent by Federal Express or another recognized overnight courier, (c) on the fourth Business Day following the mailing thereof with postage prepaid, if mailed by registered or certified mail (return receipt requested), and (d) the date of transmission, if such notice or communication is delivered via facsimile or email attachment at or prior to 5:30 p.m. (New York City time) on a Business Day and (e) the next Business Day after the date of transmission, if such notice or communication is delivered via facsimile or email attachment on a day that is not a Business Day or later than 5:30 p.m. (New York City time) on any Business Day, in each case to the parties at the following addresses (or at such other address for a party as shall be specified by like notice):

(a) If to the Company, to:

Guardion Health Sciences, Inc.  
15150 Avenue of Science, Suite 200  
San Diego, California 92128  
Attention: Chief Executive Officer  
E-mail: mfavish@guardionhealth.com

with a copy (which shall not constitute notice) to:  
Sheppard, Mullin, Richter & Hampton LLP  
333 South Hope Street, 43rd Floor  
Los Angeles, California 90071  
Attention: David I. Sunkin  
E-mail: dsunkin@sheppardmullin.com

(b) If to the Warrant Agent, to:

VStock Transfer, LLC  
18 Lafayette Place  
Woodmere, NY 11598  
Attn: Warrant Department

For any notice delivered by email to be deemed given or made, such notice must be followed by notice sent by overnight courier service to be delivered on the next business day following such email, unless the recipient of such email has acknowledged via return email receipt of such email.

(c) If to the Holder of any Warrant Certificate, to the address of such Holder as shown on the registry books of the Company. Any notice required to be delivered by the Company to the Holder of any Warrant may be given by the Warrant Agent on behalf of the Company. Notwithstanding any other provision of this Agreement, where this Agreement provides for notice of any event to a Holder of any Warrant, such notice shall be sufficiently given if given to the Depository (or its designee) pursuant to the procedures of the Depository or its designee.

Section 20. Supplements and Amendments.

(a) The Company and the Warrant Agent may from time to time supplement or amend this Agreement without the approval of any Holders of Global Warrants in order to add to the covenants and agreements of the Company for the benefit of the Holders of the Global Warrants or to surrender any rights or power reserved to or conferred upon the Company in this Agreement, provided that such addition or surrender shall not adversely affect the interests of the Holders of the Global Warrants or Warrant Certificates in any material respect.

(b) In addition to the foregoing, with the consent of Holders of Warrants entitled, upon exercise thereof, to receive not less than a majority of the shares of Common Stock issuable thereunder, the Company and the Warrant Agent may modify this Agreement for the purpose of adding any provisions to or changing in any manner or eliminating any of the provisions of this Warrant Agreement or modifying in any manner the rights of the Holders of the Global Warrants; provided, however, that no modification of the terms (including but not limited to the adjustments described in Section 11) upon which the Warrants are exercisable or the rights of holders of Warrants to receive liquidated damages or other payments in cash from the Company or reducing the percentage required for consent to modification of this Agreement may be made without the consent of the Holder of each outstanding warrant certificate affected thereby; provided further, however, that no amendment hereunder shall affect any terms of any Warrant Certificate issued in a Warrant Exchange. As a condition precedent to the Warrant Agent's execution of any amendment, the Company shall deliver to the Warrant Agent a certificate from a duly authorized officer of the Company that states that the proposed amendment complies with the terms of this Section 20.

Section 21. Successors. All covenants and provisions of this 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 hereunder.

Section 22. Benefits of this Agreement. Nothing in this Agreement shall be construed to give any Person other than the Company, the Holders of Warrant Certificates and the Warrant Agent any legal or equitable right, remedy or claim under this Agreement. This Agreement shall be for the sole and exclusive benefit of the Company, the Warrant Agent and the Holders of the Warrant Certificates.

Section 23. Governing Law. This Agreement and each Warrant Certificate issued hereunder shall be governed by, and construed in accordance with, the laws of the State of New York without giving effect to the conflicts of law principles thereof.

Section 24. Counterparts. This Agreement may be executed in any number of 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.

Section 25. Captions. The captions of the sections of this Agreement have been inserted for convenience only and shall not control or affect the meaning or construction of any of the provisions hereof.

Section 26. Information. The Company agrees to promptly provide to the Holders of the Warrants any information it provides to the holders of the Common Stock, except to the extent any such information is publicly available on the EDGAR system (or any successor thereof) of the Securities and Exchange Commission.

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be duly executed as of the day and year first above written.

GUARDION HEALTH SCIENCES, INC.

By: /s/ Michael Favish

Name: Michael Favish

Title: Chief Executive Officer

VSTOCK TRANSFER, LLC

By: /s/ Shay Galam

Name: Shay Galam

Title: Compliance Officer

**Annex A: Form of Warrant Certificate Request Notice**

WARRANT CERTIFICATE REQUEST NOTICE

To: VStock Transfer, LLC, as Warrant Agent for Guardion Health Sciences, Inc. (the “Company”)

The undersigned Holder of Common Stock Purchase Warrants (“Warrants”) in the form of Global Warrants issued by the Company hereby elects to receive a Warrant Certificate evidencing the Warrants held by the Holder as specified below:

1. Name of Holder of Warrants in form of Global Warrants: \_\_\_\_\_
2. Name of Holder in Warrant Certificate (if different from name of Holder of Warrants in form of Global Warrants):  
\_\_\_\_\_
3. Number of Warrants in name of Holder in form of Global Warrants: \_\_\_\_\_
4. Number of Warrants for which Warrant Certificate shall be issued: \_\_\_\_\_
5. Number of Warrants in name of Holder in form of Global Warrants after issuance of Warrant Certificate, if any:  
\_\_\_\_\_
6. Warrant Certificate shall be delivered to the following address:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

The undersigned hereby acknowledges and agrees that, in connection with this Warrant Exchange and the issuance of the Warrant Certificate, the Holder is deemed to have surrendered the number of Warrants in form of Global Warrants in the name of the Holder equal to the number of Warrants evidenced by the Warrant Certificate.

[SIGNATURE OF HOLDER]

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

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

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

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

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

**Exhibit 1: Form of Warrant Certificate**

**SERIES B COMMON STOCK PURCHASE WARRANT**

**GUARDION HEALTH SCIENCES, INC.**

Warrant Shares: [\_\_\_\_\_] <sup>1</sup>

Initial Issuance Date: October 30, 2019

THIS SERIES B COMMON STOCK PURCHASE WARRANT (this “Warrant”) certifies that, for value received, \_\_\_\_\_ or its assigns (the “Holder”) is entitled, upon the terms and subject to the limitations on exercise and the conditions hereinafter set forth, at any time on or after the Initial Exercise Date and on or prior to 5:00 p.m. (New York City time) on the date that is five (5) years following the Initial Exercise Date (the “Termination Date”) but not thereafter, to subscribe for and purchase from Guardion Health Sciences, Inc., a Delaware corporation (the “Company”), up to \_\_\_\_\_ shares (as subject to adjustment hereunder, the “Warrant Shares”) of Common Stock. The purchase price of one share of Common Stock under this Warrant shall be equal to the Exercise Price, as defined in Section 2(b). This Warrant shall initially be issued and maintained in the form of a security held in book-entry form and the Depository Trust Company or its nominee (“DTC”) shall initially be the sole registered holder of this Warrant, subject to the Holder’s right to elect to receive a Warrant in certificated form pursuant to the terms of the Warrant Agent Agreement, in which case this sentence shall not apply.

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

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

“Amendment” means any amendment to the Company’s Amended Certificate of Incorporation to increase the number of shares of authorized Common Stock (or effect a reverse stock split of the Common Stock), which would result in the Company having a sufficient number of authorized and unreserved shares of Common Stock to satisfy its obligation to reserve for issuance upon exercise of this Warrant at least a number of shares of Common Stock equal to 100% of the number of shares of Common Stock as shall from time to time be necessary to effect the exercise of all of this Warrant then outstanding without regard to any limitation on exercise included herein.

“Bid Price” 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, the bid price of the Common Stock for the time in question (or the nearest preceding date) on the Trading Market on which the Common Stock is then listed or quoted as reported by Bloomberg L.P. (based on a Trading Day from 9:30 a.m. (New York City time) to 4:02 p.m. (New York City time)), (b) if OTCQB or OTCQX is not a Trading Market, the volume weighted average price of the Common Stock for such date (or the nearest preceding date) on OTCQB or OTCQX as applicable, (c) if the Common Stock is not then listed or quoted for trading on OTCQB or OTCQX and if prices for the Common Stock are then reported on the Pink Open Market (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 Holders of a majority in interest of the Warrants then outstanding and reasonably acceptable to the Company, the fees and expenses of which shall be paid by the Company.

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

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<sup>1</sup> Up to 24,500,000 shares of common stock.

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

“Common Stock” means the common stock of the Company, par value \$0.001 per share, and any other class of securities into which such securities may hereafter be reclassified or changed.

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

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

“Initial Exercise Date” means the date that the Company announces that it has received Stockholder Approval and the Amendment to the Company’s Amended Certificate of Incorporation shall have become effective.

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

“Registration Statement” means the Company’s registration statement on Form S-1 (File No. 333-234322).

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

“Stockholder Approval” means such time as the Company’s stockholders have approved an Amendment.

“Subsidiary” means any subsidiary of the Company and shall, where applicable, also include any direct or indirect subsidiary of the Company formed or acquired after the date hereof.

“Trading Day” means a day on which the Common Stock is traded on a Trading Market.

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

“Transfer Agent” means VStock Transfer, LLC, the current transfer agent of the Company with a mailing address of 8 Lafayette Place, Woodmere, New York 11598, a phone number of (212) 828-8436 and an email address of shay@vstock.com, and any successor transfer agent of the Company.

“VWAP” means, for any date, the price determined by the first of the following clauses that applies: (a) if the Common Stock is then listed or quoted on a Trading Market, the daily volume weighted average price of the Common Stock for such date (or the nearest preceding date) on the Trading Market on which the Common Stock is then listed or quoted as reported by Bloomberg L.P. (based on a Trading Day from 9:30 a.m. (New York City time) to 4:02 p.m. (New York City time)), (b) if OTCQB or OTCQX is not a Trading Market, the volume weighted average price of the Common Stock for such date (or the nearest preceding date) on OTCQB or OTCQX as applicable, (c) if the Common Stock is not then listed or quoted for trading on OTCQB or OTCQX and if prices for the Common Stock are then reported on the Pink Open Market (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 holders of a majority in interest of the Warrants then outstanding and reasonably acceptable to the Company, the fees and expenses of which shall be paid by the Company.

“Warrant Agent Agreement” means that certain warrant agent agreement, dated on or about the Initial Exercise Date, between the Company and the Warrant Agent.

“Warrant Agent” means the Transfer Agent and any successor warrant agent of the Company.

“Warrants” means this Warrant and other Common Stock purchase warrants issued by the Company pursuant to the Registration Statement.

Section 2. Exercise.

a) Exercise of Warrant. Subject to the provisions of Section 2(e) herein, exercise of the purchase rights represented by this Warrant may be made, in whole or in part, at any time or times on or after the Initial Exercise Date and on or before the Termination Date by delivery to the Company or Warrant Agent of a duly executed facsimile copy or PDF copy submitted by e-mail (or e-mail attachment) of the Notice of Exercise in the form annexed hereto (the “Notice of Exercise”). Within the earlier of (i) two (2) Trading Days and (ii) the number of Trading Days comprising the Standard Settlement Period (as defined in Section 2(d)(i) herein) following the date of exercise as aforesaid, the Holder shall deliver the aggregate Exercise Price for the Warrant Shares specified in the applicable Notice of Exercise by wire transfer or cashier’s check drawn on a United States bank unless the cashless exercise procedure specified in Section 2(c) below is specified in the applicable Notice of Exercise. No ink-original Notice of Exercise shall be required, nor shall any medallion guarantee (or other type of guarantee or notarization) of any Notice of Exercise be required. Notwithstanding anything herein to the contrary, the Holder shall not be required to physically surrender this Warrant to the Company or the Warrant Agent until the Holder has purchased all of the Warrant Shares available hereunder and the Warrant has been exercised in full, in which case, the Holder shall surrender this Warrant to the Company or Warrant Agent for cancellation within three (3) Trading Days of the date on which the final Notice of Exercise is delivered to the Company. Partial exercises of this Warrant resulting in purchases of a portion of the total number of Warrant Shares available hereunder shall have the effect of lowering the outstanding number of Warrant Shares purchasable hereunder in an amount equal to the applicable number of Warrant Shares purchased. The Holder and the Company shall maintain records showing the number of Warrant Shares purchased and the date of such purchases. The Company or Warrant Agent shall deliver any objection to any Notice of Exercise within one (1) Trading Day of receipt of such notice. **The Holder and any assignee, by acceptance of this Warrant, acknowledge and agree that, by reason of the provisions of this paragraph, following the purchase of a portion of the Warrant Shares hereunder, the number of Warrant Shares available for purchase hereunder at any given time may be less than the amount stated on the face hereof.**

Notwithstanding the foregoing in this Section 2(a), a Holder whose interest in this Warrant is a beneficial interest in certificate(s) representing this Warrant held in book-entry form through DTC (or another established clearing corporation performing similar functions), shall effect exercises made pursuant to this Section 2(a) by delivering to DTC (or such other clearing corporation, as applicable) the appropriate instruction form for exercise, complying with the procedures to effect exercise that are required by DTC (or such other clearing corporation, as applicable), subject to a Holder’s right to elect to receive a Warrant in certificated form pursuant to the terms of the Warrant Agent Agreement, in which case this sentence shall not apply. Notwithstanding anything to the contrary contained herein, a beneficial holder of the Warrant shall have all of the rights and remedies of the “Holder” hereunder.

b) Exercise Price. The exercise price per share of Common Stock under this Warrant shall be **\$0.342**, subject to adjustment hereunder (the “Exercise Price”).

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

(A) = as applicable: (i) the VWAP on the Trading Day immediately preceding the date of the applicable Notice of Exercise if such Notice of Exercise is (1) both executed and delivered pursuant to Section 2(a) hereof on a day that is not a Trading Day or (2) both executed and delivered pursuant to Section 2(a) hereof on a Trading Day prior to the opening of “regular trading hours” (as defined in Rule 600(b)(68) of Regulation NMS promulgated under the federal securities laws) on such Trading Day, (ii) at the option of the Holder, either (y) the VWAP on the Trading Day immediately preceding the date of the applicable Notice of Exercise or (z) the Bid Price of the Common Stock on the principal Trading Market as reported by Bloomberg L.P. as of the time of the Holder’s execution of the applicable Notice of Exercise if such Notice of Exercise is executed during “regular trading hours” on a Trading Day and is delivered within two (2) hours thereafter (including until two (2) hours after the close of “regular trading hours” on a Trading Day) pursuant to Section 2(a) hereof or (iii) the VWAP on the date of the applicable Notice of Exercise if the date of such Notice of Exercise is a Trading Day and such Notice of Exercise is both executed and delivered pursuant to Section 2(a) hereof after the close of “regular trading hours” on such Trading Day;

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

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

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

d) Mechanics of Exercise.

i. Delivery of Warrant Shares Upon Exercise. The Company shall cause the Warrant Shares purchased hereunder to be transmitted by the Transfer Agent to the Holder by crediting the account of the Holder's or its designee's balance account with The Depository Trust Company through its Deposit or Withdrawal at Custodian system ("DWAC") if the Company is then a participant in such system and either (A) there is an effective registration statement permitting the issuance of the Warrant Shares to or resale of the Warrant Shares by the Holder or (B) this Warrant is being exercised via cashless exercise, and otherwise by physical delivery of a certificate, registered in the Company's share register in the name of the Holder or its designee, for the number of Warrant Shares to which the Holder is entitled pursuant to such exercise to the address specified by the Holder in the Notice of Exercise by the date that is the earliest of: (i) two (2) Trading Days after the delivery to the Company or the Warrant Agent of the Notice of Exercise, (ii) one (1) Trading Day after delivery of the aggregate Exercise Price to the Company and (iii) the number of Trading Days comprising the Standard Settlement Period after the delivery to the Company of the Notice of Exercise (such date, the "Warrant Share Delivery Date"), provided, that in no event will the Warrant Share Delivery Date be prior the Holder's delivery of the aggregate Exercise Price to the Company. Upon delivery of the Notice of Exercise, the Holder shall be deemed for all corporate purposes to have become the holder of record of the Warrant Shares with respect to which this Warrant has been exercised, irrespective of the date of delivery of the Warrant Shares, provided that payment of the aggregate Exercise Price (other than in the case of a cashless exercise) is received within the earlier of (i) two (2) Trading Days and (ii) the number of Trading Days comprising the Standard Settlement Period following delivery of the Notice of Exercise. If the Company fails for any reason to deliver to the Holder the Warrant Shares subject to a Notice of Exercise by the Warrant Share Delivery Date, the Company shall pay to the Holder, in cash, as liquidated damages and not as a penalty, for each \$1,000 of Warrant Shares subject to such exercise (based on the VWAP of the Common Stock on the date of the applicable Notice of Exercise), \$10 per Trading Day (increasing to \$20 per Trading Day on the fifth (5th) Trading Day after such liquidated damages begin to accrue) for each Trading Day after such Warrant Share Delivery Date until such Warrant Shares are delivered or Holder rescinds such exercise. Notwithstanding the foregoing, the Warrant Agent shall not, in any event, be subject to, or responsible for, liquidated damages as contemplated by this Section 2(d)(i). The Company agrees to maintain a transfer agent that is a participant in the FAST program so long as this Warrant remains outstanding and exercisable. As used herein, "Standard Settlement Period" means the standard settlement period, expressed in a number of Trading Days, on the Company's primary Trading Market with respect to the Common Stock as in effect on the date of delivery of the Notice of Exercise.

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

iii. Rescission Rights. If the Company fails to cause the Transfer Agent to transmit to the Holder the Warrant Shares pursuant to Section 2(d)(i) by the Warrant Share Delivery Date, then the Holder will have the right to rescind such exercise.

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

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

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

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

e) Holder's Exercise Limitations. The Company shall not effect any exercise of this Warrant, and a Holder shall not have the right to exercise any portion of this Warrant, pursuant to Section 2 or otherwise, to the extent that after giving effect to such issuance after exercise as set forth on the applicable Notice of Exercise, the Holder (together with the Holder's Affiliates, and any other Persons acting as a group together with the Holder or any of the Holder's Affiliates (such Persons, "Attribution Parties")), would beneficially own in excess of the Beneficial Ownership Limitation (as defined below). For purposes of the foregoing sentence, the number of shares of Common Stock beneficially owned by the Holder and its Affiliates and Attribution Parties shall include the number of shares of Common Stock issuable upon exercise of this Warrant with respect to which such determination is being made, but shall exclude the number of shares of Common Stock which would be issuable upon (i) exercise of the remaining, nonexercised portion of this Warrant beneficially owned by the Holder or any of its Affiliates 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 the Holder or any of its Affiliates or Attribution Parties. Except as set forth in the preceding sentence, for purposes of this Section 2(e), beneficial ownership shall be calculated in accordance with Section 13(d) of the Exchange Act and the rules and regulations promulgated thereunder, it being acknowledged by the Holder that the Company is not representing to the Holder that such calculation is in compliance with Section 13(d) of the Exchange Act and the Holder is solely responsible for any schedules required to be filed in accordance therewith. To the extent that the limitation contained in this Section 2(e) applies, the determination of whether this Warrant is exercisable (in relation to other securities owned by the Holder together with any Affiliates and Attribution Parties) and of which portion of this Warrant is exercisable shall be in the sole discretion of the Holder, and the submission of a Notice of Exercise shall be deemed to be the Holder's determination of whether this Warrant is exercisable (in relation to other securities owned by the Holder together with any Affiliates and Attribution Parties) and of which portion of this Warrant is exercisable, in each case subject to the Beneficial Ownership Limitation, and the Company shall have no obligation to verify or confirm the accuracy of such determination. In addition, a determination as to any group status as contemplated above shall be determined in accordance with Section 13(d) of the Exchange Act and the rules and regulations promulgated thereunder. For purposes of this Section 2(e), in determining the number of outstanding shares of Common Stock, a Holder may rely on the number of outstanding shares of Common Stock as reflected in (A) the Company's most recent periodic or annual report filed with the Commission, as the case may be, (B) a more recent public announcement by the Company or (C) a more recent written notice by the Company or the Transfer Agent setting forth the number of shares of Common Stock outstanding. Upon the written or oral request of a Holder, the Company shall within one Trading Day confirm orally and in writing to the Holder the number of shares of Common Stock then outstanding. In any case, the number of outstanding shares of Common Stock shall be determined after giving effect to the conversion or exercise of securities of the Company, including this Warrant, by the Holder or its Affiliates or Attribution Parties since the date as of which such number of outstanding shares of Common Stock was reported. The "Beneficial Ownership Limitation" shall be [4.99% /9.99%] of the number of shares of the Common Stock outstanding immediately after giving effect to the issuance of shares of Common Stock issuable upon exercise of this Warrant. The Holder, upon notice to the Company, may increase or decrease the Beneficial Ownership Limitation provisions of this Section 2(e), provided that the Beneficial Ownership Limitation in no event exceeds 9.99% of the number of shares of the Common Stock outstanding immediately after giving effect to the issuance of shares of Common Stock upon exercise of this Warrant held by the Holder and the provisions of this Section 2(e) shall continue to apply. Any increase in the Beneficial Ownership Limitation will not be effective until the 61<sup>st</sup> day after such notice is delivered to the Company. The provisions of this paragraph shall be construed and implemented in a manner otherwise than in strict conformity with the terms of this Section 2(e) to correct this paragraph (or any portion hereof) which may be defective or inconsistent with the intended Beneficial Ownership Limitation herein contained or to make changes or supplements necessary or desirable to properly give effect to such limitation. The limitations contained in this paragraph shall apply to a successor holder of this Warrant.

f) Issuance Restrictions. The Company may not issue any shares of Common Stock upon exercise of this Warrant unless and until such date that the Company has obtained the Stockholder Approval and the Amendment to the Company's Amended Certificate of Incorporation shall have become effective.

g) Authorized Shares. As soon as practicable following the Initial Issuance Date, the Company shall hold an annual or special meeting of stockholders (the “Stockholder Meeting”) for the purpose of obtaining the Stockholder Approval of the Company’s stockholder to amend the Company’s Amended Certificate of Incorporation to increase the number of shares of authorized Common Stock (or effect a reverse stock split of the Common Stock), which would result in the Company having a sufficient number of authorized and unreserved shares of Common Stock to satisfy its obligation to reserve for issuance upon exercise of the Warrants at least a number of shares of Common Stock equal to 100% of the number of shares of Common Stock as shall from time to time be necessary to effect the exercise of all of Warrants then outstanding without regard to any limitation on exercise included therein. The Stockholder Meeting shall be held no later than sixty (60) days following the Initial Issuance Date. The Company shall use its reasonable best efforts to obtain Stockholder Approval of the Amendment and shall cause the Board of Directors of the Company to recommend to the stockholder that they approve such items. If, despite the Company’s reasonable best efforts the Amendment is not effected on or prior to January 2, 2020, the Company shall cause an additional stockholder meeting to be held every three (3) months thereafter until such Stockholder Approval is obtained. Immediately upon receipt of Stockholder Approval the Company shall file the Amendment with the Secretary of State of the State of Delaware; provided, however, that if Stockholder Approval is obtained for an amendment to the Company’s Amended Certificate of Incorporation to both effect an increase in the authorized number of shares of Common Stock and effect a reverse stock split, the Company shall only be required to immediately effect the increase in the authorized number of shares of Common Stock to the extent such increase would provide a sufficient number of shares to provide for the issuance of the Warrant Shares issuable upon the exercise of all Warrants, without regard to any limitation on exercise included herein or therein.

### Section 3. Certain Adjustments.

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

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

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

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

e) [Reserved.]

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

g) Notice to Holder.

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

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

Section 4. Transfer of Warrant.

a) Transferability. This Warrant and all rights hereunder are transferable, in whole or in part, upon surrender of this Warrant at the principal office of the Company or its designated agent, together with a written assignment of this Warrant substantially in the form attached hereto duly executed by the Holder or its agent or attorney and funds sufficient to pay any transfer taxes payable upon the making of such transfer. Upon such surrender and, if required, such payment, the Company shall execute and deliver a new Warrant or Warrants in the name of the assignee or assignees, as applicable, and in the denomination or denominations specified in such instrument of assignment, and shall issue to the assignor a new Warrant evidencing the portion of this Warrant not so assigned, and this Warrant shall promptly be cancelled. The Warrant Agent may require a medallion guarantee (or other type of guarantee or notarization) to effectuate an assignment or transfer of this Warrant. In order to effectuate a transfer (in whole or in part) of this Warrant, the Holder shall surrender this Warrant to the Company or the Warrant Agent within three (3) Trading Days of the date on which the Holder delivers an assignment form to the Company assigning this Warrant in full. This Warrant, if properly assigned in accordance herewith, may be exercised by a new holder for the purchase of Warrant Shares without having a new Warrant issued.

b) New Warrants. If this Warrant is not held in global form through DTC (or any successor depository), this Warrant may be divided or combined with other Warrants upon presentation hereof at the aforesaid office of the Company, together with a written notice specifying the names and denominations in which new Warrants are to be issued, signed by the Holder or its agent or attorney. Subject to compliance with Section 4(a), as to any transfer which may be involved in such division or combination, the Company shall execute and deliver a new Warrant or Warrants in exchange for the Warrant or Warrants to be divided or combined in accordance with such notice. All Warrants issued on transfers or exchanges shall be dated the initial issuance date of this Warrant and shall be identical with this Warrant except as to the number of Warrant Shares issuable pursuant thereto.

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

Section 5. Miscellaneous.

a) No Rights as Stockholder Until Exercise; No Settlement in Cash. This Warrant does not entitle the Holder to any voting rights, dividends or other rights as a stockholder of the Company prior to the exercise hereof as set forth in Section 2(d)(i), except as expressly set forth in Section 3. Without limiting the rights of a Holder to receive Warrant Shares on a "cashless exercise," and to receive the cash payments contemplated pursuant to Sections 2(d)(i) and 2(d)(iv), In no event, including if the Company is for any reason unable to issue and deliver Warrant Shares upon exercise of this Warrant as required pursuant to the terms hereof, shall the Company be required to net cash settle an exercise of this Warrant or cash settle in any other form.

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

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

d) Authorized Shares.

The Company covenants that, during the period the Warrant is outstanding, it will reserve from its authorized and unissued Common Stock a sufficient number of shares to provide for the issuance of the Warrant Shares upon the exercise of any purchase rights under this Warrant provided that prior to the Initial Exercise Date the foregoing covenant shall not require the Company to reserve shares of Common Stock in excess of that number then authorized and available for issuance under the Company's Amended Certificate of Incorporation. The Company further covenants that its issuance of this Warrant shall constitute full authority to its officers who are charged with the duty of issuing the necessary Warrant Shares upon the exercise of the purchase rights under this Warrant. The Company will take all such reasonable action as may be necessary to assure that such Warrant Shares may be issued as provided herein without violation of any applicable law or regulation, or of any requirements of the Trading Market upon which the Common Stock may be listed. The Company covenants that all Warrant Shares which may be issued upon the exercise of the purchase rights represented by this Warrant will, upon exercise of the purchase rights represented by this Warrant and payment for such Warrant Shares in accordance herewith, be duly authorized, validly issued, fully paid and nonassessable and free from all taxes, liens and charges created by the Company in respect of the issue thereof (other than taxes in respect of any transfer occurring contemporaneously with such issue).

Except and to the extent as waived or consented to by the Holder, the Company shall not by any action, including, without limitation, amending its certificate of incorporation or through any reorganization, transfer of assets, consolidation, merger, dissolution, issue or sale of securities or any other voluntary action, avoid or seek to avoid the observance or performance of any of the terms of this Warrant, but will at all times in good faith assist in the carrying out of all such terms and in the taking of all such actions as may be necessary or appropriate to protect the rights of Holder as set forth in this Warrant against impairment. Without limiting the generality of the foregoing, the Company will (i) not increase the par value of any Warrant Shares above the amount payable therefor upon such exercise immediately prior to such increase in par value, (ii) take all such action as may be necessary or appropriate in order that the Company may validly and legally issue fully paid and nonassessable Warrant Shares upon the exercise of this Warrant and (iii) use commercially reasonable efforts to obtain all such authorizations, exemptions or consents from any public regulatory body having jurisdiction thereof, as may be, necessary to enable the Company to perform its obligations under this Warrant.

Before taking any action which would result in an adjustment in the number of Warrant Shares for which this Warrant is exercisable or in the Exercise Price, the Company shall obtain all such authorizations or exemptions thereof, or consents thereto, as may be necessary from any public regulatory body or bodies having jurisdiction thereof.

e) Governing Law. All questions concerning the construction, validity, enforcement and interpretation of this Warrant shall be governed by and construed and enforced in accordance with the internal laws of the State of New York, without regard to the principles of conflicts of law thereof. Each party agrees that all legal proceedings concerning the interpretations, enforcement and defense of the transactions contemplated by this Warrant (whether brought against a party hereto or their respective affiliates, directors, officers, shareholders, partners, members, employees or agents) shall be commenced exclusively in the state and federal courts sitting in the City of New York. Each party hereby irrevocably submits to the exclusive jurisdiction of the state and federal courts sitting in the City of New York, Borough of Manhattan for the adjudication of any dispute hereunder or in connection herewith or with any transaction contemplated hereby or discussed herein, and hereby irrevocably waives, and agrees not to assert in any suit, action or proceeding, any claim that it is not personally subject to the jurisdiction of any such court, that such suit, action or proceeding is improper or is an inconvenient venue for such proceeding. Each party hereby irrevocably waives personal service of process and consents to process being served in any such suit, action or proceeding by mailing a copy thereof via registered or certified mail or overnight delivery (with evidence of delivery) to such party at the address in effect for notices to it under this Warrant and agrees that such service shall constitute good and sufficient service of process and notice thereof. Nothing contained herein shall be deemed to limit in any way any right to serve process in any other manner permitted by law. If either party shall commence an action, suit or proceeding to enforce any provisions of this Warrant, the prevailing party in such action, suit or proceeding shall be reimbursed by the other party for their reasonable attorneys' fees and other costs and expenses incurred with the investigation, preparation and prosecution of such action or proceeding. Notwithstanding the foregoing, nothing in this paragraph shall limit or restrict the federal district court in which a Holder may bring a claim under the federal securities laws.

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

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

h) Notices. Any and all notices or other communications or deliveries to be provided by the Holders hereunder including, without limitation, any Notice of Exercise, shall be in writing and delivered personally, by facsimile or e-mail, or sent by a nationally recognized overnight courier service, addressed to the Company, at 15150 Avenue of Science, Suite 200, San Diego, California 92128, Attention: Chief Executive Officer, facsimile number (858) 605-9055, E-mail: mfavish@guardionhealth.com, or such other facsimile number, email address or address as the Company may specify for such purposes by notice to the Holders. Any and all notices or other communications or deliveries to be provided by the Company hereunder shall be in writing and delivered personally, by facsimile or e-mail, or sent by a nationally recognized overnight courier service addressed to each Holder at the facsimile number, e-mail address or address of such Holder appearing on the books of the Company. Any notice or other communication or deliveries hereunder shall be deemed given and effective on the earliest of (i) the time of transmission, if such notice or communication is delivered via facsimile at the facsimile number or via e-mail at the e-mail address set forth in this Section prior to 5:30 p.m. (New York City time) on any date, (ii) the next Trading Day after the time of transmission, if such notice or communication is delivered via facsimile at the facsimile number or via e-mail at the e-mail address set forth in this Section on a day that is not a Trading Day or later than 5:30 p.m. (New York City time) on any Trading Day, (iii) the second Trading Day following the date of mailing, if sent by U.S. nationally recognized overnight courier service, or (iv) upon actual receipt by the party to whom such notice is required to be given. To the extent that any notice provided hereunder constitutes, or contains, material, non-public information regarding the Company or any Subsidiaries, the Company shall simultaneously file such notice with the Commission pursuant to a Current Report on Form 8-K.

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

j) Remedies. The Holder, in addition to being entitled to exercise all rights granted by law, including recovery of damages, will be entitled to specific performance of its rights under this Warrant. The Company agrees that monetary damages would not be adequate compensation for any loss incurred by reason of a breach by it of the provisions of this Warrant and hereby agrees to waive and not to assert the defense in any action for specific performance that a remedy at law would be adequate.

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

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

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

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

o) Warrant Agent Agreement. If this Warrant is held in global form through DTC (or any successor depository), this Warrant is issued subject to the Warrant Agent Agreement. To the extent any provision of this Warrant conflicts with the express provisions of the Warrant Agent Agreement, the provisions of this Warrant shall govern and be controlling.

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*(Signature Page Follows)*

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

**GUARDION HEALTH SCIENCES, INC.**

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

**NOTICE OF EXERCISE**

TO: GUARDION HEALTH SCIENCES, INC.

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

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

in lawful money of the United States; or

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

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

\_\_\_\_\_

The Warrant Shares shall be delivered to the following DWAC Account Number:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

[SIGNATURE OF HOLDER]

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

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

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

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

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

**ASSIGNMENT FORM**

*(To assign the foregoing Warrant, execute this form and supply required information. Do not use this form to purchase shares.)*

FOR VALUE RECEIVED, the foregoing Warrant and all rights evidenced thereby are hereby assigned to

Name:

(Please Print)

Address:

(Please Print)

Phone Number:

\_\_\_\_\_

Email Address:

\_\_\_\_\_

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

Holder's Signature:

Holder's Address:

[Signature Guarantee]

**Exhibit 2**  
**Warrant Agent Compensation**



## **Guardion Health Sciences Announces Pricing of \$8.2 Million Underwritten Public Offering**

**San Diego, CA – October 28, 2019** – Guardion Health Sciences, Inc. (“Guardion” or the “Company”) (Nasdaq: GHSI), announced the pricing of an underwritten public offering of 24,000,000 shares of its common stock (or pre-funded warrants to purchase common stock in lieu thereof) and Series B warrants to purchase up to 24,000,000 shares of the Company’s common stock. Each share of common stock (or pre-funded warrants to purchase common stock in lieu thereof) is being sold together with one Series B warrant to purchase one share of common stock at a combined price to the public of \$0.342 per share and Series B warrant. The shares of common stock or pre-funded warrants and the accompanying Series B warrants are being sold together in this offering, but will be issued separately and will be immediately separable upon issuance. Gross proceeds, before underwriting discounts and commissions and estimated offering expenses, are expected to be approximately \$8.2 million.

The Series B warrants will be exercisable at a price of \$0.342 per share of common stock, and will only be exercisable if Guardion effectuates an amendment to its certificate of incorporation (as described below). The Series B warrants will expire five years from the date on which the Series B warrants become initially exercisable. The offering is expected to close on or about Wednesday October 30, 2019, subject to customary closing conditions.

Currently, Guardion does not have a sufficient number of authorized shares of common stock to issue the shares of common stock issuable upon the exercise of the Series B warrants. As a result, the Series B warrants will become exercisable only after Guardion effectuates an amendment to its certificate of incorporation to either (i) increase the number of authorized shares of its common stock or (ii) implement a reverse stock split with respect to the shares of its common stock. There can be no assurance that Guardion’s stockholders will approve a charter amendment, or as to when, if ever, the, holders of the Series B warrants will be able to exercise the Series B warrants.

Maxim Group LLC and WallachBeth Capital, LLC are acting as joint-bookrunning managers in connection with the offering.

Guardion also has granted to the underwriters a 45-day option to purchase up to an additional 3,600,000 shares of common stock /or Series B warrants to purchase up to 3,600,000 shares of common stock, at the public offering price less discounts and commissions.

The offering is being conducted pursuant to Guardion’s registration statement on Form S-1 (File No. 333-234322 ) previously filed with and subsequently declared effective by the Securities and Exchange Commission (“SEC”) on October 28, 2019. A final prospectus relating to the offering will be filed with the SEC and will be available on the SEC’s website at <http://www.sec.gov>. Electronic copies of the final prospectus relating to this offering, when available, may be obtained from Maxim Group LLC, 405 Lexington Avenue, 2nd Floor, New York, NY 10174, at (212) 895-3745. Before investing in this offering, interested parties should read in their entirety the registration statement that the Company has filed with the SEC, which provides additional information about the Company and this offering.

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

#### **About Guardian Health Sciences, Inc.**

Guardion is an ocular health sciences company that develops, formulates and distributes conditionspecific medical foods supported by evidence-based protocols, with an initial medical food product, Lumega-Z<sup>®</sup>, that addresses a depleted macular protective pigment, a known risk factor for agerelated macular degeneration (“AMD”) and a significant component of functional vision performance. Guardion Health Sciences, Inc. has also developed a proprietary medical device, the MapcatSF<sup>®</sup>, which accurately measures the macular pigment density, therefore providing the only two-pronged evidence-based protocol for the treatment of a depleted macular protective pigment. Information and risk factors with respect to Guardion and its business, including its ability to successfully develop and commercialize its proprietary products and technologies, may be obtained in the Company’s filings with the SEC at [www.sec.gov](http://www.sec.gov).

#### **About VectorVision<sup>®</sup>**

VectorVision<sup>®</sup>, operating through a wholly-owned subsidiary of the Company, specializes in the standardization of contrast sensitivity, glare sensitivity, low contrast acuity, and ETDRS acuity vision testing. Its patented standardization system provides the practitioner or researcher the ability to delineate very small changes in visual capability, either as compared to the population or from visit to visit. VectorVision<sup>®</sup>’s CSV-1000 device is considered the standard of care for clinical trials.

#### **Forward-Looking Statement Disclaimer**

With the exception of the historical information contained in this news release, the matters described herein may contain forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended. Statements preceded by, followed by or that otherwise include the words “believes,” “expects,” “anticipates,” “intends,” “projects,” “estimates,” “plans” and similar expressions or future or conditional verbs such as “will,” “should,” “would,” “may” and “could” are generally forwardlooking in nature and not historical facts, although not all forward-looking statements include the foregoing. The forward-looking statements include statements regarding the proposed amendment to the Company’s certificate of incorporation to either increase the number of authorized shares of common stock or implement a reverse stock split with respect to the shares of common stock . These statements involve unknown risks and uncertainties that may individually or materially impact the matters discussed herein for a variety of reasons that are outside the control of the Company, including, but not limited to, the Company’s ability to secure stockholder approval to the proposed amendment to the Company’s certificate of incorporation, the Company’s ability to raise sufficient financing to implement its business plan, the Company’s ability to successfully develop and commercialize its proprietary products and technologies and statements regarding the proposed public offering. Readers are cautioned not to place undue reliance on these forward-looking statements, as actual results could differ materially from those described in the forward-looking statements contained herein. Readers are urged to read the risk factors set forth in the Company’s filings with the SEC, which are available at the SEC’s website ([www.sec.gov](http://www.sec.gov)). The Company disclaims any intention or obligation to update or revise any forward-looking statements, whether as a result of new information, future events or otherwise.

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### **Guardion Health Sciences Closes \$8.4 Million Underwritten Public Offering**

**San Diego, CA – October 30, 2019** – Guardion Health Sciences, Inc. (“Guardion” or the “Company”) (Nasdaq: GHSI), today announced the closing of its previously announced underwritten public offering of 24,500,000 shares of its common stock (or pre-funded warrants to purchase common stock in lieu thereof) and Series B warrants to purchase up to 24,500,000 shares of the Company’s common stock. Each share of common stock or pre-funded warrant was sold together with one Series B warrant to purchase one share of common stock at a combined price to the public of \$0.342 per share and warrant. The shares of common stock or pre-funded warrants and the accompanying Series B warrants were sold together in this offering, but were issued separately and were immediately separable upon issuance. Gross proceeds, before underwriting discounts and commissions and estimated offering expenses were approximately \$8.4 million.

The Series B warrants will be exercisable at a price of \$0.342 per share of common stock, and will only be exercisable if Guardion effectuates an amendment to its certificate of incorporation (as described below). The Series B warrants will expire five years from the date on which the Series B warrants become initially exercisable.

Currently, Guardion does not have a sufficient number of authorized shares of common stock to issue the shares of common stock issuable upon the exercise of the Series B warrants. As a result, the Series B warrants will become exercisable only after Guardion effectuates an amendment to its certificate of incorporation to either (i) increase the number of authorized shares of its common stock or (ii) implement a reverse stock split with respect to the shares of its common stock. There can be no assurance that Guardion’s stockholders will approve a charter amendment, or as to when, if ever, the, holders of the Series B warrants will be able to exercise the Series B warrants.

Maxim Group LLC and WallachBeth Capital, LLC acted as joint-bookrunning managers in connection with the offering.

Guardion also has granted to the underwriter a 45-day option to purchase up to an additional 3,675,000 shares of common stock and/or Series B warrants to purchase up to 3,675,000 shares of common stock, at the public offering price less discounts and commissions.

The offering was conducted pursuant to the Company’s registration statement on Form S-1 (File No. 333-234322) previously filed with and subsequently declared effective by the Securities and Exchange Commission (“SEC”) on October 28, 2019. A final prospectus relating to the offering has been filed with the SEC and is available on the SEC’s website at <http://www.sec.gov>. Electronic copies of the final prospectus relating to this offering may be obtained from Maxim Group LLC, 405 Lexington Avenue, 2nd Floor, New York, NY 10174, at (212) 895-3745.

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

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### **About Guardian Health Sciences, Inc.**

Guardion is an ocular health sciences company that develops, formulates and distributes conditionspecific medical foods supported by evidence-based protocols, with an initial medical food product, Lumega-Z<sup>®</sup>, that addresses a depleted macular protective pigment, a known risk factor for agerelated macular degeneration (“AMD”) and a significant component of functional vision performance. Guardian Health Sciences, Inc. has also developed a proprietary medical device, the MapcatSF<sup>®</sup>, which accurately measures the macular pigment density, therefore providing the only two-pronged evidence-based protocol for the treatment of a depleted macular protective pigment. Information and risk factors with respect to Guardian and its business, including its ability to successfully develop and commercialize its proprietary products and technologies, may be obtained in the Company’s filings with the SEC at [www.sec.gov](http://www.sec.gov).

### **About VectorVision<sup>®</sup>**

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