

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

FORM 8-K

CURRENT REPORT

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

Date of Report (Date of earliest event reported): February 12, 2025

HEARTBEAM, INC.

(Exact name of Registrant as specified in its charter)

Delaware

(State or other jurisdiction
of incorporation)

001-41060

(Commission File Number)

47-4881450

(IRS Employer
Identification No.)

2118 Walsh Avenue, Suite 210
Santa Clara, CA 95050

(Address of principal executive offices, including zip code)

(408) 899-4443

(Registrant's telephone number, including area code)

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

- Written communication 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:

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common Stock	BEAT	NASDAQ
Warrant	BEATW	NASDAQ

Indicate by check mark whether the registrant is an emerging growth company as defined in Rule 405 of the Securities Act of 1933 (17 CFR §230.405) or Rule 12b-2 of the Securities Exchange Act of 1934 (17 CFR §240.12b-2).

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.

Item 1.01 Entry into a Material Definitive Agreement.

On February 12, 2025, HeartBeam, Inc. (the "Company") entered into an Underwriting Agreement (the "Underwriting Agreement") with Public Ventures, LLC dba MDB Capital (the "Underwriter"), relating to a firm commitment underwritten offering (the "Offering") of 5,882,353 shares (the "Shares") of common stock of the Company, par value \$0.0001 per share ("Common Stock"), at a public offering price of \$1.70 per share. The Offering closed on February 14, 2025 (the "Closing Date"), resulting in gross proceeds to the Company of approximately \$10 million, before deducting underwriting discounts, commissions and offering expenses.

In connection with the Offering, the Company has filed with the Securities and Exchange Commission (the "Commission") under the Securities Act of 1933, as amended (the "Securities Act") a preliminary prospectus, dated December 23, 2024 (the "Preliminary Prospectus Supplement"), an Issuer Free Writing Prospectus, dated January 8, 2025 (the "FWP"), and a Final Prospectus Supplement, dated February 13, 2025 (the "Final Prospectus", together with the Preliminary Prospectus and the FWP, the "Prospectus"), relating to a Registration Statement on Form S-3 (File No. 333-269520) (the "Registration Statement"), with respect to the Offering of the Shares. The Registration Statement was previously filed with the Commission on February 2, 2023 and declared effective by the Commission on February 10, 2023.

Pursuant to the Underwriting Agreement, as partial compensation for its services, the Company issued to the Underwriter on the Closing Date, warrants (the "Underwriter Warrants") to purchase an aggregate of 588,235 shares of Common Stock, representing 10% of the Shares issued on the Closing Date. The Underwriter Warrants will be exercisable, in whole or in part, commencing on February 9, 2026 and expiring on February 14, 2030, at an initial exercise price per share of Common Stock of \$2.125, which is equal to 125% of the public offering price.

Pursuant to the Underwriting Agreement, each of the Company's directors and executive officers entered into "lock-up" agreements with the Underwriter that, subject to certain exceptions, prohibit, without the prior written consent of the Underwriter, the sale, transfer or other disposition of securities of the Company for a period of 180 days after the Closing Date (the "Lock-Up Period"). Pursuant to the Underwriting Agreement, except with respect to certain exempt issuances, the Company is prohibited from issuing Common Stock or Common Stock equivalents during the Lock-Up Period and from engaging in certain variable rate transactions for a period of 12 months from the Closing Date.

The foregoing description of the Underwriting Agreement and the Underwriter Warrants is not complete and is qualified in its entirety by reference to the full text of the Underwriting Agreement and the Underwriter Warrants, copies of which are filed herewith as Exhibits 1.1 and 4.1, respectively, to this Current Report on Form 8-K and is

incorporated herein by reference.

A copy of the legal opinion of Lucosky Brookman, LLP relating to the Shares is attached hereto as Exhibit 5.1.

This Current Report on Form 8-K shall not constitute an offer to sell or the solicitation of an offer to buy the securities discussed herein, nor shall there be any offer, solicitation, or sale of the securities in any state in which such offer, solicitation or sale would be unlawful prior to registration or qualification under the securities laws of any such state.

Item 8.01 Other Events.

The Company issued a press release announcing the pricing of the Offering on February 13, 2025. A copy of the press release is attached hereto as Exhibit 99.1 and is incorporated herein by reference.

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Item 9.01 Financial Statements and Exhibits

(d) Exhibits

The following exhibits are filed with this report:

Exhibit Number	Exhibit Description
1.1	Underwriting Agreement, dated as of February 12, 2025, between the Company and Public Ventures, LLC dba MDB Capital
4.1	Form of Underwriter Warrants
5.1	Opinion of Lucosky Brookman, LLP
23.1	Consent of Lucosky Brookman, LLP (included in Exhibit 5.1)
99.1	Press Release dated February 13, 2025 regarding the pricing of the Offering of Common Stock
104	Cover Page Interactive Data File (embedded within the Inline XBRL document)

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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.

HeartBeam, Inc.

Date: February 14, 2025

By: /s/ Timothy Cruickshank

Name: Timothy Cruickshank

Title: Chief Financial Officer

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5,882,353 SHARES OF COMMON STOCK

HEARTBEAM, INC.

UNDERWRITING AGREEMENT

February 12, 2025

Public Ventures, LLC (d/b/a MDB Capital)
14135 Midway Road, Suite G-150
Addison, TX 75001

Ladies and Gentlemen:

The undersigned, HeartBeam, Inc., a company incorporated under the laws of Delaware (the “Company”), hereby confirms its agreement (this “Agreement”) with Public Ventures, LLC d/b/a MDB Capital, as the underwriter (including others acting as an underwriter, then together, the “Underwriters” and each, an “Underwriter” that are named in Schedule I hereto and in which case Public Ventures, LLC is acting as representative and therefore referred to herein as the “Representative,” and if there are no Underwriters other than the Representative, references to multiple Underwriters shall be disregarded and the term Representative as used herein shall have the same meaning as the Underwriter) on the terms and conditions set forth herein.

It is understood that the Underwriters are to make a public offering of the Public Securities (as defined below) as soon as the Representative deems it advisable to do so. The Public Securities are to be initially offered to the public at the public offering prices set forth in the Prospectus Supplement (as defined below).

It is further understood that you will act as the Representative for the Underwriters in the Offering (as defined below) and sale of the Closing Securities (as defined below) and, if any, the Option Securities (as defined below) in accordance with this Agreement.

**ARTICLE I.
DEFINITIONS**

1.1 Definitions. In addition to the terms defined elsewhere in this Agreement, for all purposes of this Agreement, the following terms have the meanings set forth in this Section 1.1:

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

“BHCA” shall have the meaning ascribed to such term in Section 3.1(hh).

“Board of Directors” means the board of directors of the Company.

“Business Day” means any day other than Saturday, Sunday or other day on which commercial banks in The City of New York are authorized or required by law to remain closed; provided, however, for clarification, commercial banks shall not be deemed to be authorized or required by law to remain closed due to “stay at home”, “shelter-in-place”, “non-essential employee” or any other similar orders or restrictions or the closure of any physical branch locations at the direction of any governmental authority so long as the electronic funds transfer systems (including for wire transfers) of commercial banks in The City of New York generally are open for use by customers on such day.

“CERCLA” shall have the meaning ascribed to such term in Section 3.1(oo).

“Closing” means the closing of the purchase and sale of the Closing Securities pursuant to Section 2.1.

“Closing Date” means the hour and the date on the Trading Day on which all conditions precedent to (i) the Underwriters’ obligations to pay the Closing Purchase Price and (ii) the Company’s obligations to deliver the Closing Securities, in each case, have been satisfied or waived, but in no event later than 10:00 a.m. (New York City time) on the second (2nd) Trading Day following the date hereof or at such earlier time as shall be agreed upon by the Representative and the Company.

“Closing Purchase Price” shall have the meaning ascribed to such term in Section 2.1(b), which aggregate purchase price shall be net of the underwriting discounts and commissions.

“Closing Securities” shall have the meaning ascribed to such term in Section 2.1(a).

“Closing Shares” shall have the meaning ascribed to such term in Section 2.1(a).

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

“Common Stock” means the common stock of the Company, par value \$0.0001 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.

“Company Auditor” means Marcum LLP, with offices located at 730 Third Avenue, New York, NY 10017.

“Company Counsel” means Lucosky Brookman LLP, with offices 101 Wood Avenue South 5th Floor, Woodbridge, NJ 08830.

“Controlling Person” shall have the meaning ascribed to such term in Section 6.1.

“Effective Date” shall have the meaning ascribed to such term in Section 3.1(f).

“Engagement Agreement” shall have the meaning ascribed to such term in Section 7.2.

“Environmental Law” shall have the meaning ascribed to such term in Section 3.1(oo).

“ERISA” shall have the meaning ascribed to such term in Section 3.1(z).

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

“Execution Date” shall mean the date on which the parties execute and enter into this Agreement.

“Exempt Issuance” means the issuance of (a) shares of Common Stock, equity awards or other securities of the Company under any equity compensation plan or stock or option plan of the Company or pursuant to another type of arrangement for services rendered or to be rendered to the Company, duly adopted for such purpose by a majority of the Board of Directors (including, in the case of plans or arrangements relating to employee compensation, the consent of the majority of the non-employee members of the Board of Directors) or a majority of the members (who are the non-employee members) of a committee established for such purpose for services rendered or to be rendered to the Company; provided further that, subject to shareholder approval, the Company may increase the authorized shares of the 2022 Equity Incentive Plan, (b) securities upon the exercise or exchange of or conversion of or vesting of any 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 or to extend the term of such securities, and (c) 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 within 120 days following the Closing Date, and provided that any such issuance shall only be to a Person (or to the equity holders 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, unless approved by the Representative, which approval shall not be unreasonably withheld, conditioned or delayed, 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.

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“FCPA” means the Foreign Corrupt Practices Act of 1977, as amended.

“FDA” shall have the meaning ascribed to such term in Section 3.1(e).

“Federal Reserve” shall have the meaning ascribed to such term in Section 3.1(hh).

“FINRA” means the Financial Industry Regulatory Authority.

“GAAP” shall have the meaning ascribed to such term in Section 3.1(i).

“General Disclosure Package” means each Permitted Free Writing Prospectus, the Prospectus, any Preliminary Prospectus and all written communications, as defined in Rule 405, on, or hyperlinked from, www.ir.heartbeam.com.

“Golenbock” means Golenbock Eiseman Assor Bell & Peskoe LLP, with offices located at 711 Third Avenue, New York, New York 10017.

“Indebtedness” means (a) any liabilities for borrowed money or amounts owed in excess of \$100,000 (other than trade accounts payable incurred in the ordinary course of business), (b) all guaranties, endorsements and other contingent obligations in respect of indebtedness of others, whether or not the same are or should be reflected in the Company’s consolidated balance sheet (or the notes thereto), except guaranties by endorsement of negotiable instruments for deposit or collection or similar transactions in the ordinary course of business; and (c) the present value of any lease payments in excess of \$100,000 due under leases required to be capitalized in accordance with GAAP.

“Intellectual Property” shall have the meaning ascribed to such term in Section 3.1(o).

“Iran Sanctions” shall have the meaning ascribed to such term in Section 3.1(pp).

“IT Systems and Data” shall have the meaning ascribed to such term in Section 3.1(nn).

“Liens” means a lien, charge, pledge, security interest, encumbrance, right of first refusal, preemptive right or other restriction.

“Lock-Up Agreements” means the lock-up agreements that are delivered on the date hereof (i) by each of the Company’s officers and directors and each of the Company’s shareholders actually and beneficially holding 5% or more shares of Common Stock, in the form of Exhibit A attached hereto.

“Material Adverse Effect” means (i) a material adverse effect on the legality, validity or enforceability of any Transaction Document, (ii) a material adverse effect on the results of operations, assets, business, prospects or condition (financial or otherwise) of the Company and the Subsidiaries, taken as a whole or (iii) a material adverse effect on the Company’s ability to perform in any material respect on a timely basis its obligations under any Transaction Document.

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“Money Laundering Laws” shall have the meaning ascribed to such term in Section 3.1(ii).

“OFAC” shall have the meaning ascribed to such term in Section 3.1(ff).

“Offering” shall have the meaning ascribed to such term in Section 2.1(c).

“Option Closing Date” shall have the meaning ascribed to such term in Section 2.2(c).

“Option Closing Purchase Price” shall have the meaning ascribed to such term in Section 2.2(b), which aggregate purchase price shall be net of the underwriting discounts and commissions.

“Option Securities” shall have the meaning ascribed to such term in Section 2.2(a).

“Option Shares” shall have the meaning ascribed to such term in Section 2.2(a).

“Over-Allotment Option” shall have the meaning ascribed to such term in Section 2.2(a).

“Permitted Free Writing Prospectus” shall have the meaning ascribed to such term in Section 4.2(d).

“Permit” shall have the meaning ascribed to such term in Section 3.1(e).

“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.

“Preliminary Prospectus” means any preliminary prospectus supplement relating to the Public Securities included in the Registration Statement or filed with the Commission pursuant to Rule 424(b) promulgated by the Commission pursuant to the Securities Act.

“Proceeding” means an action, claim, suit, investigation or proceeding (including, without limitation, an informal investigation or partial proceeding, such as a deposition), whether commenced or threatened.

“Prospectus” means the final base prospectus filed for the Registration Statement.

“Prospectus Supplement” means the final supplement to the Prospectus complying with Rule 424(b) promulgated by the Commission pursuant to the Securities Act that is filed with the Commission relating to the Offering.

“Public Securities” means, collectively, the Closing Securities and, if any, the Option Securities.

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“Registration Statement” means, collectively, the various parts of the registration statement prepared by the Company on Form S-3 (File No. 269520) with respect to the Public Securities, each as amended as of the date hereof, including the Prospectus, the Preliminary Prospectus, the Prospectus Supplement and all exhibits filed with or incorporated by reference into such registration statement, and includes any Rule 462(b) Registration Statement.

“Rule 405” shall have the meaning ascribed to such term in Section 3.1(k).

“Rule 424” means Rule 424 promulgated by the Commission pursuant to the Securities Act, as such Rule may be amended or interpreted from time to time, or any similar rule or regulation hereafter adopted by the Commission having substantially the same purpose and effect as such Rule.

“Rule 462(b) Registration Statement” means any registration statement prepared by the Company registering additional Public Securities, which was filed with the Commission on or prior to the date hereof and became automatically effective pursuant to Rule 462(b) promulgated by the Commission pursuant to the Securities Act.

“Sarbanes-Oxley Act” shall have the meaning ascribed to such term in Section 3.1(r).

“SEC Reports” shall have the meaning ascribed to such term in Section 3.1(i).

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

“Selected Dealer” shall have the meaning ascribed to such term in Section 6.1.

“Share Purchase Price” shall have the meaning ascribed to such term in Section 2.1(b).

“Subsidiary” means any significant subsidiary of the Company as defined in Article 1, Rule 1-02 of Regulation S-X promulgated by the Commission pursuant to the Securities Act.

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

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

“Transaction Documents” means this Agreement, the Lock-Up Agreements, the Warrant Agency Agreement, the Underwriter Warrant, and any other documents or agreements executed in connection with the transactions contemplated hereunder.

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“Transfer Agent” means VStock Transfer, LLC, 18 Lafayette Place, Woodmere, New York 11598, and any successor transfer agent of the Company.

“Underwriter Information” shall have the meaning ascribed to such term in Section 3.1(w).

“Underwriter Warrant” means that certain Underwriter Warrant, dated as of the Closing Date and the Option Closing Date, if any, issued by the Company to the Representative, in the form of Exhibit B attached hereto.

“Warrant Agency Agreement” means that certain Warrant Agency Agreement, dated on or about the date hereof, by and between the Company and VStock Transfer, LLC.

ARTICLE II. PURCHASE AND SALE

2.1 Closing.

(a) Upon the terms and subject to the conditions set forth herein, the Company agrees to sell in the aggregate 5,882,353 shares of Common Stock, and each Underwriter agrees to purchase, severally and not jointly, at the Closing, the number of shares of Common Stock (the “Closing Shares”) set forth opposite the name of such Underwriter on Schedule I hereof (the Closing Shares are sometimes referred to herein as the “Closing Securities”);

(b) The aggregate purchase price for the Closing Securities shall equal the amount set forth opposite the name of such Underwriter on Schedule I hereto (the “Closing Purchase Price”). The purchase price to the Underwriters for one share of Common Stock shall be \$1.54275 per share (the “Share Purchase Price”); and

(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 Section 2.3 deliverable at the Closing. Upon satisfaction of the covenants and conditions set forth in Sections 2.3 and 2.4, the Closing shall occur at the offices of counsel to the Underwriters or such other location as the Company and Representative shall mutually agree. The Public Securities are to be offered initially to the public at the public offering price set forth on the cover page of the Prospectus Supplement (the “Offering”).

2.2 Over-Allotment Option.

(a) For the purposes of covering any over-allotments in connection with the distribution and sale of the Closing Shares, the Representative is hereby granted an option (the “Over-Allotment Option”) to purchase, in the aggregate, up to 882,353 shares of Common Stock (the “Option Shares”) at the Share Purchase Price; provided that this option may be exercised by the Representative as to any number of Option Shares, as determined by the Representative, as offered by the Company to the public in the Offering.

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(b) In connection with an exercise of the Over-Allotment Option, the purchase price to be paid for the Option Securities is equal to the product of the Share Purchase Price multiplied by the number of Option Shares to be purchased (the aggregate purchase price to be paid on an Option Closing Date, the “Option Closing Purchase Price”).

(c) The Over-Allotment Option granted pursuant to this Section 2.2 may be exercised by the Representative as to all (at any time) or a lesser amount (from time to time) of the Option Securities within forty-five (45) days after 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 Representative. The Over-Allotment Option granted hereby may be exercised by the giving of oral notice to the Company from the Representative, which must be confirmed in writing by overnight mail or other electronic transmission setting forth the number of the Option Securities 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 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 Representative, at the offices of Golenbock or at such other place (including remotely by other electronic transmission) as shall be agreed upon by the Company and the Representative. 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 Securities specified in such notice. The Representative may cancel the Over-Allotment Option at any time prior to the expiration of the Over-Allotment option by written notice to the Company.

2.3 Deliveries. The Company shall deliver or cause to be delivered to each Underwriter (if applicable) the following:

(i) At the Closing Date, the Closing Securities and, as to each Option Closing Date, if any, the applicable Option Securities, which securities shall be delivered via The Depository Trust Company facilities or through the transfer agent for the Company, for the accounts of the several Underwriters;

(ii) At the Closing Date, a legal opinion of Company Counsel addressed to the Underwriters, including, without limitation, a negative assurance letter, in customary form reasonably acceptable to the Representative, and as to each Option Closing Date, if any, a bring-down opinion and negative assurance letter from Company Counsel in form and substance reasonably satisfactory to the Representative;

(iii) Contemporaneously herewith, a cold comfort letter addressed to the Underwriters and in form and substance satisfactory in all respects to the Representative from the Company Auditor dated, respectively, as of the date of this Agreement and a bring-down letter dated as of the Closing Date and each Option Closing Date, if any;

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(iv) On the Closing Date and on each Option Closing Date, the duly executed and delivered Officer’s Certificate, substantially in the form required by Exhibit C attached hereto;

(v) On the Closing Date and on each Option Closing Date, the duly executed and delivered Secretary’s Certificate, substantially in the form required by Exhibit D attached hereto;

(vi) Contemporaneously herewith, the duly executed and delivered Lock-Up Agreements; and

(vii) Contemporaneously herewith, a copy of the FINRA no objection letter issued upon the filing of the Registration Statement with FINRA and payment of the FINRA filing fee.

2.4 Closing Conditions. The respective obligations of the Underwriters hereunder in connection with the Closing and each Option Closing Date are subject to the following conditions being met:

(i) the accuracy in all material respects when made and on the Closing Date and the Option Closing Date, as the case may be, (other than representations and

warranties of the Company already qualified by materiality, which shall be true and correct in all respects) of the representations and warranties of the Company contained herein (unless as of a specific date therein, in which case they shall be accurate in all material respects as of such date);

(ii) all obligations, covenants and agreements of the Company required to be performed at or prior to the date in question shall have been performed;

(iii) the delivery by the Company of the items set forth in Section 2.3 of this Agreement;

(iv) The Registration Statement has become effective and at the Closing Date and each Option Closing Date, if any, no stop order suspending the effectiveness of the Registration Statement shall be in effect and no proceedings for such purpose shall be pending before or threatened by the Commission, and any requests for additional information on the part of the Commission (to be included in the Registration Statement or the Prospectus or otherwise) shall have been complied with to the satisfaction of the Commission and the Underwriter. A prospectus supplement containing Rule 430B Information shall have been filed with the Commission in the manner and within the period required by Rule 424(b) promulgated by the Commission pursuant to the Securities Act (without reliance on Rule 424(b)(8)) or a post-effective amendment providing such information shall have been promptly filed and declared effective in accordance with the requirements of Rule 430B promulgated by the Commission pursuant to the Securities Act. Any material required to be filed by the Company pursuant to Rule 433(d) promulgated by the Commission pursuant to the Securities Act shall have been timely filed with the Commission in accordance with such rule.

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(v) by the Execution Date, if required by FINRA, the Underwriters shall have received clearance from FINRA as to the amount of compensation allowable or payable to the Underwriters as described in the Registration Statement;

(vi) the Company shall have submitted a Notification: Listing of Additional Shares with Nasdaq with respect to the Closing Shares and the Option Shares to be sold at the Closing Date and shall have received no objection thereto from the Nasdaq Capital Market; and

(vii) prior to and on each of the Closing Date and each Option Closing Date, if any: (A) there shall have been no material adverse change or development involving a prospective material adverse change in the condition or prospects or the business activities, financial or otherwise, of the Company from the latest dates as of which such condition, prospect or business activity is set forth in the Registration Statement, the General Disclosure Package or the Prospectus Supplement; (B) no action, suit or proceeding, at law or in equity, shall have been pending or threatened against the Company or any Affiliate of the Company before or by any court or federal or state commission, board or other administrative agency wherein an unfavorable decision, ruling or finding may materially adversely affect the business, operations, prospects or financial condition or income of the Company, except as set forth in the Registration Statement, the General Disclosure Package or the Prospectus Supplement; (C) 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 (D) the Registration Statement 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 rules and regulations thereunder and shall conform in all material respects to the requirements of the Securities Act and the rules and regulations thereunder, and neither the Registration Statement 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.

ARTICLE III. REPRESENTATIONS AND WARRANTIES

3.1 Representations and Warranties of the Company. The Company represents and warrants to the Underwriters as of the Execution Date, as of the Closing Date and as of each Option Closing Date, if any, as follows:

(a) Subsidiaries. Each Subsidiary of the Company has been duly organized and is validly existing in good standing under the laws of the jurisdiction of its incorporation or organization, has corporate or similar power and authority to own, lease and operate its properties and to conduct its business as described in the Registration Statement, the General Disclosure Package or the Prospectus Supplement and is duly qualified to transact business and is in good standing in each jurisdiction in which such qualification is required, whether by reason of the ownership or leasing of property or the conduct of business, except where the failure to so qualify would not have a Material Adverse Effect. Except as otherwise disclosed in the Registration Statement, the General Disclosure Package or the Prospectus Supplement, all of the issued and outstanding capital stock or equity interests of each Subsidiary has been duly authorized and validly issued, is fully paid and non-assessable and is owned by the Company, directly or through Subsidiaries, free and clear of any material security interest, mortgage, pledge, lien, encumbrance, claim or equity. None of the outstanding shares of capital stock or equity interests of any Subsidiary was issued in violation of any preemptive or similar rights of any securityholder of such Subsidiary.

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(b) Organization; Qualification; Authorization. The Company has been duly organized and is validly existing as a corporation in good standing under the laws of the State of Delaware and has corporate power and authority to own, lease, and operate its properties and to conduct its business as described in the Registration Statement, the General Disclosure Package or the Prospectus Supplement and to enter into and perform its obligations under this Agreement, the other Transaction Documents, and the various other agreements required hereunder and thereunder to which it is a party; and the Company is duly qualified as a foreign corporation to transact business and is in good standing in each other jurisdiction in which such qualification is required, whether by reason of the ownership or leasing of property or the conduct of business, except for such jurisdictions where the failure to so qualify individually or in the aggregate would not have a Material Adverse Effect. All necessary corporate action has been duly and validly taken by the Company to authorize the execution, delivery and performance of each of this Agreement and the other Transaction Documents and the issuance and sale of the Common Stock. Each of this Agreement and the other Transaction Documents have been duly authorized, executed and delivered by the Company.

(c) No Violation or Default. Neither the Company nor any of its Subsidiaries is (i) in violation of its certificate or articles of incorporation, by-laws, certificate of limited partnership, agreement of limited partnership, certificate of formation, operating agreement or other organizational documents, (ii) in default under, and no event has occurred which, with notice or lapse of time, or both, would constitute a default under any bond, debenture, note, indenture, mortgage, deed of trust, loan agreement or other agreement or instrument evidencing an obligation for borrowed money or any other material agreement or instrument to which it is a party or by which it is bound or to which any of its properties or assets is subject, or (iii) in violation of any statute, law, rule, regulation, ordinance, directive, judgment, decree or order of any judicial, regulatory or other legal or governmental agency or body, foreign or domestic, except (in the case of clause (ii) or (iii) above) for violations or defaults that would not (individually or in the aggregate) reasonably be expected to have a Material Adverse Effect.

(d) No Conflicts. Neither the execution, delivery and performance of this Agreement or the other Transaction Documents by the Company nor the consummation of any of the transactions contemplated hereby (including, without limitation, the issuance and sale by the Company of the Public Securities) will: (i) give rise to a right to terminate or accelerate the due date of any payment due under, or conflict with or result in the breach of any term or provision of, or constitute a default (or an event which with notice or lapse of time or both would constitute a default) under, or require any consent or waiver under, or result in the execution or imposition

of any lien, charge or encumbrance upon any properties or assets of the Company or any of its Subsidiaries pursuant to the terms of any indenture, mortgage, deed of trust or other agreement or instrument evidencing an obligation for borrowed money or any other material agreement or instrument to which either of the Company or any of its Subsidiaries is a party or by which the Company or any of its Subsidiaries or any of their properties or businesses is bound, or any franchise, license, permit, judgment, decree, order, statute, rule or regulation applicable to either of the Company or any of its Subsidiaries, or (ii) violate any provision of certificate or articles of incorporation, by-laws, certificate of limited partnership, agreement of limited partnership, certificate of formation, operating agreement or other organizational documents of either of the Company or any of its Subsidiaries, except (A) in the case of clause (i) above, for violations or defaults that would not, individually or in the aggregate, reasonably be expected to have a Material Adverse Effect, and (B) for such consents or waivers which have already been obtained and are in full force and effect.

(e) Consents, Permits and Filings. Except as disclosed in the Registration Statement, the General Disclosure Package or the Prospectus Supplement, the Company and its Subsidiaries have made all filings, applications and submissions required by, possesses and is operating in compliance with, all approvals, licenses, certificates, certifications, clearances, consents, grants, exemptions, marks, notifications, orders, permits and other authorizations issued by, the appropriate local, federal, state or foreign governmental authority (including, without limitation, the United States Food and Drug Administration (the “FDA”), the United States Drug Enforcement Administration or any other foreign, federal, state, provincial, court or local government or regulatory authorities including self-regulatory organizations engaged in the regulation of clinical trials, pharmaceuticals, biologics or biohazardous substances or materials) necessary for the ownership or lease of their respective properties or to conduct its businesses as described in the Registration Statement, the General Disclosure Package or the Prospectus Supplement (collectively, “Permits”), except for such Permits the failure of which to possess, obtain or make the same would not have a Material Adverse Effect; the Company and its Subsidiaries are in compliance with the terms and conditions of all such Permits, except where the failure to be in compliance would not have a Material Adverse Effect; all of the Permits are valid and in full force and effect, except where any invalidity, individually or in the aggregate, would not be reasonably expected to have a Material Adverse Effect; and neither the Company nor any of its Subsidiaries has received any written notice relating to the limitation, revocation, cancellation, suspension, modification or non-renewal of any such Permit which, singly or in the aggregate, if the subject of an unfavorable decision, ruling or finding, would have a Material Adverse Effect, or has any reason to believe that any such license, certificate, permit or authorization will not be renewed in the ordinary course. To the extent required by applicable laws and regulations of the FDA, the Company or the applicable Subsidiary has submitted to the FDA an Investigational New Drug Application or amendment or supplement thereto for each clinical trial it has conducted or sponsored or is conducting or sponsoring; all such submissions were in material compliance with applicable laws and rules and regulations when submitted and no material deficiencies have been asserted by the FDA with respect to any such submissions.

The Company is not required to obtain any Permit, give any notice to, or make any filing or registration with, any court or other federal, state, local or other governmental authority or other Person in connection with the execution, delivery and performance by the Company of the Transaction Documents, other than: (i) the filing with the Commission of the Prospectus Supplement and (ii) such filings as are required to be made under applicable state securities laws, the rules and regulations of FINRA and the Nasdaq Capital Market.

(f) Registration Statement. The Company has filed with the Commission a “shelf” registration statement on Form S-3 under the Securities Act, which became effective on February 2, 2023 (the “Effective Date”), for the registration under the Securities Act of the Public Securities. At the time of such filing, the Company met the requirements of Form S-3 under the Securities Act. The Registration Statement meets the requirements set forth in Rule 415(a)(1)(x) under the Securities Act and complies with said Rule and the Prospectus Supplement will meet the requirements set forth in Rule 424(b) promulgated by the Commission pursuant to the Securities Act. The Company is eligible to use Form S-3 under the Securities Act and it meets the transaction requirements with respect to the aggregate market value of securities being sold pursuant to this Offering and during the twelve (12) months prior to the Offering, as set forth in General Instruction I.B.6 of Form S-3. Any reference in this Agreement to the Registration Statement, the Prospectus or the Prospectus Supplement shall be deemed to refer to and include the documents incorporated by reference therein pursuant to Item 12 of Form S-3 which were filed under the Exchange Act, on or before the date of this Agreement, or the issue date of the Prospectus or the Prospectus Supplement, as the case may be; and any reference in this Agreement to the terms “amend,” “amendment” or “supplement” with respect to the Registration Statement, the Prospectus or the Prospectus Supplement shall be deemed to refer to and include the filing of any document under the Exchange Act after the date of this Agreement, or the issue date of the Prospectus or the Prospectus Supplement, as the case may be, deemed to be incorporated therein by reference. All references in this Agreement to financial statements and schedules and other information which is “contained,” “included,” “described,” “referenced,” “set forth” or “stated” in the Registration Statement, the Prospectus or the Prospectus Supplement (and all other references of like import) shall be deemed to mean and include all such financial statements and schedules and other information which is or is deemed to be incorporated by reference in the Registration Statement, the Prospectus or the Prospectus Supplement, as the case may be. No stop order suspending the effectiveness of the Registration Statement or the use of the Prospectus or the Prospectus Supplement has been issued, and no proceeding for any such purpose is pending or has been initiated or, to the Company’s knowledge, is threatened by the Commission.

(g) Issuance of Securities. The Public Securities have been duly authorized for issuance and sale to the Underwriters or its nominees pursuant to this Agreement, and when the Public Securities have been issued and delivered by the Company pursuant to this Agreement against payment of the consideration set forth herein, the Public Shares will be validly issued, fully paid and non-assessable; and the issuance of the Public Securities is not subject to any preemptive or other similar rights of any securityholder of the Company. The Common Stock conform in all material respects to all statements relating thereto contained in the Registration Statement, the General Disclosure Package or the Prospectus Supplement and such description conforms in all material respects to the rights set forth in the instruments defining the same; and no holder of the Public Securities will be subject to personal liability by reason of being such a holder. The Underwriter Warrants have been duly authorized for issuance and sale to the Underwriters or its nominees and the Common Stock underlying the Underwriter Warrants, when issued in accordance with the terms of the Underwriter Warrants, will be validly issued, fully paid and non-assessable, and the issuance of the Underwriter Warrants is not be subject to any preemptive or similar rights of any securityholder of the Company.

(h) Capitalization. The capitalization of the Company is as set forth in the Registration Statement, the General Disclosure Package or the Prospectus Supplement. Except as disclosed in the Registration Statement, the General Disclosure Package or the Prospectus Supplement, the Company has not issued any capital stock since its most recently filed periodic report under the Exchange Act, other than pursuant to the exercise of stock options under the Company’s equity incentive plans or stock or option plans, the issuance of shares of Common Stock pursuant to the Company’s employee stock purchase plans or other stock plans and pursuant to the conversion and/or exercise of Common Stock Equivalents outstanding as of the date of the most recently filed periodic report under the Exchange Act. Except as disclosed in the Registration Statement, the General Disclosure Package or the Prospectus Supplement, no Person has any right of first refusal, preemptive right, right of participation, or any similar right to participate in the transactions contemplated by the Transaction Documents. Except as disclosed in the Registration Statement, the General Disclosure Package or the Prospectus Supplement, there are no outstanding options, warrants, scrip rights to subscribe to, calls or commitments of any character whatsoever relating to, or securities, rights or obligations convertible into or exercisable or exchangeable for, or giving any Person any right to subscribe for or acquire,

any shares of Common Stock, Common Stock Equivalents, or the capital stock of any Subsidiary, or contracts, commitments, understandings or arrangements by which the Company or any Subsidiary is or may become bound to issue additional shares of Common Stock or Common Stock Equivalents or the capital stock of any Subsidiary. The issuance and sale of the Public Securities will not obligate the Company or any Subsidiary to issue shares of Common Stock, Common Stock Equivalents or other securities to any Person (other than the Underwriters). Except as disclosed in or contemplated by the Registration Statement or the General Disclosure Package or the Prospectus Supplement, there are no outstanding securities or instruments of the Company or any Subsidiary with any provision that adjusts the exercise, conversion, exchange or reset price of such security or instrument upon an issuance of securities by the Company or any Subsidiary. Except as disclosed in or contemplated by the Registration Statement, the General Disclosure Package or the Prospectus Supplement, 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. Except as disclosed in the Registration Statement, the General Disclosure Package or the Prospectus Supplement, the Company does not have any stock appreciation rights or "phantom stock" plans or agreements or any similar plan or agreement. All of the outstanding shares of capital stock of the Company are duly authorized, validly issued, fully paid and nonassessable, have been issued in compliance with all federal and state securities laws, and none of such outstanding shares was issued in violation of any preemptive rights or similar rights to subscribe for or purchase securities. The authorized shares of the Company conform in all material respects to all statements relating thereto contained in the Registration Statement and the Prospectus. The offers and sales of the Company's securities 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, exempt from such registration requirements. 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, other than the Commission or FINRA. 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.

(i) SEC Reports; Financial Statements. The Company has filed all reports, schedules, forms, statements and other documents required to be filed by the Company under the Exchange Act, including pursuant to Section 13(a) or 15(d) thereof, for the twelve months 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, 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 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 financial statements of the Company included in the Registration Statement, the General Disclosure Package or the Prospectus Supplement comply in all material respects with applicable accounting requirements and the rules and regulations of the Commission with respect thereto as in effect at the time of filing. Such financial statements have been prepared in accordance with generally accepted accounting principles ("GAAP"), applied on a consistent basis during the periods involved, except as may be otherwise specified in such financial statements or the notes thereto and except that unaudited financial statements may not contain all footnotes required by GAAP, and fairly present in all material respects the financial position of the Company and its consolidated Subsidiaries as of and for the dates thereof and the results of operations and cash flows for the periods then ended, subject, in the case of unaudited statements, to normal, immaterial, year-end audit adjustments. The agreements and documents described in the Registration Statement, the General Disclosure Package or the Prospectus Supplement 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 rules and regulations thereunder to be described in the Registration Statement, the General Disclosure Package or the Prospectus Supplement 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 specifically referred to in the Registration Statement, the General Disclosure Package or the Prospectus Supplement, or (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 therefore may be brought. None of the agreements or instruments set forth in clause (i) of the previous sentence has been assigned by the Company, and neither the Company nor, to the Company's knowledge, any other party is in 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 default thereunder. To the Company's knowledge, 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 businesses, including, without limitation, those relating to environmental laws and regulations, except for such violations that would not, individually or in the aggregate, have a Material Adverse Effect.

(j) Material Changes; Undisclosed Events, Liabilities or Developments. Since the date of the latest audited financial statements included within the SEC Reports, except as specifically disclosed in a subsequent SEC Report filed prior to the date hereof or the Registration Statement, the General Disclosure Package or the Prospectus Supplement, (i) there has been no event, occurrence or development that has had or that could reasonably be expected to result in a Material Adverse Effect, (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, (v) the Company has not issued any equity securities to any officer, director or Affiliate, except pursuant to existing Company equity compensation plans or other stock plans and (vi) no officer or director of the Company has resigned from any position with the Company. 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 (1) 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 Registration Statement, the Disclosure Package or the Prospectus Supplement, the Company has not: (x) issued any securities or incurred any liability or obligation, direct or contingent, for borrowed money; or (y) declared or paid any dividend or made any other distribution on or in respect to its capital stock.

(k) Rule 405. At (i) the Effective Date, (ii) the earliest time after the Effective Date that the Company or another offering participant made a bona fide offer (within the meaning of Rule 164(h)(2) promulgated by the Commission pursuant to the Securities Act) of the Public Securities and (iii) the execution of this Agreement, the Company was not and is not an "ineligible issuer," as defined in Rule 405 promulgated by the Commission pursuant to the Securities Act ("Rule 405"), without taking account of any determination by the Commission pursuant to Rule 405 that it is not necessary that the Company be considered an ineligible issuer.

(l) No Litigation. Except as set forth in the Registration Statement, the General Disclosure Package or the Prospectus Supplement, there is no judicial, regulatory, arbitral or other legal or governmental proceeding or other litigation or arbitration, domestic or foreign, pending to which the Company or any of its Subsidiaries is a party or to which any property, operations or assets of the Company or any of its Subsidiaries is the subject. To the Company's knowledge, no such proceeding, litigation or arbitration is threatened or contemplated; and (i) there are no current or pending audits or investigations, actions, suits or proceedings by or before any foreign, federal state or local governmental authority that are required under the Securities Act to be described in the Registration Statement, the General Disclosure Package or the Prospectus Supplement that are not so described; and (ii) there are no contracts or other documents that are required under the Securities Act to be filed as exhibits to the Registration Statement, the General Disclosure Package or the Prospectus Supplement that are not so filed.

(m) Labor Relations. Neither the Company nor any of its Subsidiaries is involved in any labor dispute or, to the knowledge of the Company, is any such dispute threatened, which dispute would reasonably be expected to result in a Material Adverse Effect. The Company is not aware of any existing or imminent labor disturbance by the employees of any of its Subsidiaries, principal suppliers or contractors which would reasonably be expected to result in a Material Adverse Effect. The Company is not aware of any threatened or pending litigation between either of the Company or any of its Subsidiaries and any of its executive officers and has no reason to believe that such officers will not remain in the employment of the Company or its Subsidiaries, as the case may be.

(n) Title to Real and Personal Property. The Company and its Subsidiaries own or lease all such properties as are necessary and material to the conduct of its business as presently operated as described in the Registration Statement, the General Disclosure Package or the Prospectus Supplement. Except as set forth in the Registration Statement, the General Disclosure Package or the Prospectus Supplement, the Company and its Subsidiaries have good and marketable title in fee simple to all items of real property owned by them, good and valid title to all personal property described in the Registration Statement or Prospectus as being owned by them, in each case free and clear of all liens, encumbrances and claims, except those matters that (i) do not materially interfere with the use made and proposed to be made of such property by the Company and any of its Subsidiaries or (ii) would not, individually or in the aggregate, have a Material Adverse Effect. Except as disclosed in the Registration Statement, the General Disclosure Package or the Prospectus Supplement, any real or personal property described in the Registration Statement, the General Disclosure Package or the Prospectus Supplement as being leased by the Company and any of its Subsidiaries is held by them under valid, existing and enforceable leases, with such exceptions as are not material to, and do not interfere with, the use made and proposed to be made of such property and buildings by the Company and its Subsidiaries. Each of the properties of the Company and its Subsidiaries complies with all applicable codes, laws and regulations (including, without limitation, building and zoning codes, laws and regulations and laws relating to access to such properties), except if and to the extent disclosed in the Registration Statement, the General Disclosure Package and/or the Prospectus Supplement or except for such failures to comply that would not, individually or in the aggregate, reasonably be expected to interfere in any material respect with the use made and proposed to be made of such property by the Company and its Subsidiaries or otherwise have a Material Adverse Effect. None of the Company or its Subsidiaries has received from any foreign, federal, state or local governmental authorities any (x) notice of any condemnation of, or zoning change affecting, the properties of the Company and its Subsidiaries or (y) notice of any claim adverse to its ownership of any real or personal property or of any claim against the continued possession of any real property, whether owned or held under lease or sublease by the Company or its Subsidiaries, and the Company knows of no such condemnation or zoning change or adverse claim which is threatened, except for such that would not reasonably be expected to interfere in any material respect with the use made and proposed to be made of such property by the Company and its Subsidiaries or otherwise have a Material Adverse Effect, individually or in the aggregate.

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(o) Intellectual Property. Except as disclosed in the Registration Statement, the General Disclosure Package or the Prospectus Supplement, the Company and each of its Subsidiaries owns or possesses, and will continue to own or possess immediately following the Closing, legally enforceable rights to use all foreign and domestic patents, patent applications, trade and service marks, trade and service mark registrations, trade names, copyrights, licenses, inventions, trade secrets, technology, Internet domain names, know-how and other intellectual property (collectively, the "Intellectual Property") necessary for the conduct of their respective businesses as now conducted except to the extent that the failure to own, possess, license or otherwise hold adequate rights to use such Intellectual Property would not, individually or in the aggregate, have a Material Adverse Effect.

Except as disclosed in the Registration Statement, the General Disclosure Package or the Prospectus Supplement, (i) there are no rights of third parties to any such Intellectual Property owned by the Company and its Subsidiaries; (ii) to the Company's knowledge, there is no infringement by third parties of any such Intellectual Property; (iii) there is no pending or, to the Company's knowledge, threatened action, suit, proceeding or claim by others challenging the Company's and its Subsidiaries' rights in or to any such Intellectual Property, and the Company is unaware of any facts which could form a reasonable basis for any such action, suit, proceeding or claim; (iv) there is no pending or, to the Company's knowledge, threatened action, suit, proceeding or claim by others challenging the validity or scope of any such Intellectual Property; (v) there is no pending or, to the Company's knowledge, threatened action, suit, proceeding or claim by others that the Company and its Subsidiaries infringe or otherwise violate any patent, trademark, copyright, trade secret or other proprietary rights of others; (vi) to the Company's knowledge, there is no third-party U.S. patent or published U.S. patent application which contains claims for which an Interference Proceeding (as defined in 35 U.S.C. § 135) has been commenced against any patent or patent application described in the Prospectus as being owned by or licensed to the Company; and (vii) the Company and its Subsidiaries have complied with the terms of each agreement pursuant to which Intellectual Property has been licensed to the Company or such Subsidiary, and all such agreements are in full force and effect, except, in the case of any of clauses (i)-(vii) above, for any such infringement by third parties or any such pending or threatened suit, action, proceeding or claim as would not, individually or in the aggregate, result in a Material Adverse Effect.

(p) Insurance. The Company and its Subsidiaries carry or are entitled to the benefits of insurance, with financially sound and reputable insurers, in such amounts and covering such risks as is generally maintained by companies of established repute engaged in the same or similar business, and all such insurance is in full force and effect. The Company does not have any reason to believe that it or any of its Subsidiaries will not be able (A) to renew, if desired, its existing insurance coverage as and when such policies expire or (B) to obtain comparable coverage from similar institutions as may be necessary or appropriate to conduct its business as now conducted and not at a cost that is materially more significant. Since January 1, 2022, The Company has not been denied any insurance coverage that it has sought or for which it has applied.

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(q) Transactions With Affiliates and Employees. No transaction has occurred between or among either of the Company, its Subsidiaries and any of their officers or directors, or five percent stockholders or any affiliate or affiliates of any such officer or director or five percent stockholders that is required to be described in and is not described in the Registration Statement, the General Disclosure Package or the Prospectus Supplement.

(r) Sarbanes-Oxley. There is and has been no failure on the part of the Company or any of the Company's directors or officers, in their capacities as such, to comply in all material respects with any applicable provisions of the Sarbanes-Oxley Act of 2002 and all rules and regulations promulgated thereunder or implementing the provisions thereof (the "Sarbanes-Oxley Act") that are then in effect and with which the Company is required to comply. Each of the principal executive officer and the principal financial officer of the Company (or each former principal executive officer of the Company and each former principal financial officer of the Company as applicable) has made all certifications required by Sections 302 and 906 of the Sarbanes-Oxley Act with respect to all reports, schedules, forms, statements and other

documents required to be filed by it or furnished by it to the Commission. For purposes of the preceding sentence, “principal executive officer” and “principal financial officer” shall have the meanings given to such terms in the Sarbanes-Oxley Act. The Company has not, directly or indirectly, including through any Subsidiary, extended credit, arranged to extend credit, or renewed any extension of credit, in the form of a personal loan, to or for any executive officer of the Company or any of its Subsidiaries, or to or for any family member or affiliate of any director or executive officer of the Company or any of its Subsidiaries

(s) Disclosure Controls. The books, records and accounts of the Company and its Subsidiaries accurately and fairly reflect, in all material respects, the transactions in, and dispositions of, the assets of, and the results of operations of, the Company and its Subsidiaries. Except as disclosed in the Registration Statement, the General Disclosure Package or the Prospectus Supplement, the Company and such Subsidiaries maintain systems of 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 accordance 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. The Company is not aware of (x) any material weakness or significant deficiency in the design or operation of internal controls which could adversely affect the Company’s ability to record, process, summarize and report financial data or any material weaknesses in internal controls, except as disclosed in the Registration Statement, the General Disclosure Package or the Prospectus Supplement; or (y) any fraud, whether or not material, that involves management or other employees who have a role in the Company’s internal controls.

(t) Certain Fees. There are no claims, payments, issuances, arrangements or understandings for services in the nature of a finder’s, consulting or origination fee with respect to the introduction of the Company to the Underwriters or the sale of the Public Securities hereunder or any other arrangements, agreements, understandings, payments or issuances with respect to the Company that may affect the Underwriters’ compensation, as determined by the FINRA.

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(u) Investment Company Act. The Company is not and, after giving effect to the Offering, the sale of the Public Securities and the application of proceeds thereof as described in the General Disclosure Package or Prospectus Supplement, will not be required to register as an “investment company” within the meaning of the Investment Company Act of 1940, as amended.

(v) Listing and Maintenance Requirements. The Common Stock is registered pursuant to Section 12(b) of the Exchange Act, and the Company has taken no action designed to, or which to its knowledge is likely to have the effect of, terminating the registration of the Common Stock under the Exchange Act. The Company has not received any notification that the Commission is contemplating terminating such Exchange Act registration. Except as disclosed in the Registration Statement, the General Disclosure Package or the Prospectus Supplement, the Company has not, in the 12 months preceding the date hereof, received notice from any Trading Market on which the Common Stock is or has been listed or quoted to the effect that the Company is not in compliance with the listing or maintenance requirements of such Trading Market. Except as disclosed in the Registration Statement, the General Disclosure Package or the Prospectus Supplement, the Company is, and has no reason to believe that it will not in the foreseeable future continue to be, in compliance with all such listing and maintenance requirements of such Trading Market. The Common Stock is currently eligible for electronic transfer through the Depository Trust Company or another established clearing corporation and the Company is current in payment of the fees of the Depository Trust Company (or such other established clearing corporation) in connection with such electronic transfer.

(w) Disclosure: 10b-5. The Registration Statement (and any further documents to be filed with the Commission) contains all exhibits and schedules as required by the Securities Act. Each of the Registration Statement and any post-effective amendment thereto, if any, at the time it became effective, complied in all material respects with the Securities Act and the Exchange Act and the applicable rules and regulations under the Securities Act and did not and, as amended or supplemented, if applicable, will not, contain any untrue statement of a material fact or omit to state a material fact required to be stated therein or necessary to make the statements therein not misleading. The Preliminary Prospectus, Prospectus and the Prospectus Supplement, each as of its respective date, comply in all material respects with the Securities Act and the Exchange Act and the applicable rules and regulations. Each of the Preliminary Prospectus, Prospectus and the Prospectus Supplement, as amended or supplemented, did not and will not contain as of the date thereof any untrue statement of a material fact or omit to state a material fact necessary in order to make the statements therein, in light of the circumstances under which they were made, not misleading; provided that this representation and warranty shall not apply to statements made or statements omitted upon and in conformity with written information furnished to the Company with respect to the applicable Underwriters by or on behalf of the Representative expressly for use in the Registration Statement, Prospectus, Preliminary Prospectus or Prospectus Supplement, or any amendment or supplement thereto, with the understanding that the Representative has provided only the statements in the Underwriting section of the Registration Statement, the General Disclosure Package or Prospectus Supplement in the subheadings “Discretionary Accounts” and “Price Stabilization, Short Positions and Penalty Bids” and the second sentence of “Electronic Offer, Sale and Distribution of Securities” (the “**Underwriter Information**”). The SEC Reports, when they were filed with the Commission, conformed in all material respects to the requirements of the Exchange Act and the applicable rules and regulations, and none of such documents, when they were filed with the Commission, contained any untrue statement of a material fact or omitted to state a material fact necessary to make the statements therein (with respect to the SEC Reports incorporated by reference in the Preliminary Prospectus, Prospectus or Prospectus Supplement), in light of the circumstances under which they were made not misleading; and any further documents so filed and incorporated by reference in the Preliminary Prospectus, Prospectus or Prospectus Supplement, when such documents are filed with the Commission, will conform in all material respects to the requirements of the Exchange Act and the applicable rules and regulations, as applicable, and will not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements therein, in light of the circumstances under which they were made not misleading. There are no documents required to be filed with the Commission in connection with the transaction contemplated hereby that (x) have not been filed as required pursuant to the Securities Act or (y) will not be filed within the requisite time period. There are no contracts or other documents required to be described in the Preliminary Prospectus, Prospectus or Prospectus Supplement, or to be filed as exhibits or schedules to the Registration Statement, which have not been described or filed as required. The press releases disseminated by the Company during the twelve months preceding the date of this Agreement taken as a whole do not contain any untrue statement of a material fact or omit to state a material fact required to be stated therein or necessary in order to make the statements therein, in light of the circumstances under which they were made and when made, not misleading.

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(x) No Integrated Offering. 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 this Offering of the Public Securities to be integrated with prior offerings by the Company for purposes of any applicable shareholder approval provisions of any Trading Market on which any of the securities of the Company are listed or designated. Except as described in the Registration Statement, the General Disclosure Package or the Prospectus Supplement, the Company has not sold or issued any shares of Common Stock during the six-month period preceding the date of the Prospectus, including any sales pursuant to Rule 144A under, or Regulations D or S of, the Securities Act, other than shares issued pursuant to employee benefit plans, qualified stock options plans or other employee compensation plans or other stock plans or pursuant to outstanding options, rights or warrants. Neither the Company nor any of its affiliates (as such term is defined under Rule 144 of the Securities Act) has, prior to the date hereof, made any offer or sales of any securities which are required to be “integrated” pursuant to the Securities Act or the Rules with the offer and sale of the Public Securities pursuant to the Registration Statement.

(y) Solvency. Based on the consolidated financial condition of the Company as of the Closing Date, after giving effect to the receipt by the Company of the proceeds from the sale of the Public Securities hereunder, (i) the fair saleable value of the Company’s assets exceeds the amount that will be required to be paid on or in respect of the Company’s existing debts and other liabilities (including known contingent liabilities) as they mature, (ii) the Company’s assets do not constitute

unreasonably small capital to carry on its business as now conducted and as proposed to be conducted including its capital needs taking into account the particular capital requirements of the business conducted by the Company, consolidated and projected capital requirements and capital availability thereof, and (iii) the current cash flow of the Company, together with the proceeds the Company would receive, were it to liquidate all of its assets, after taking into account all anticipated uses of the cash, would be sufficient to pay all amounts on or in respect of its liabilities when such amounts are required to be paid. The Company does not intend to incur debts beyond its ability to pay such debts as they mature (taking into account the timing and amounts of cash to be payable on or in respect of its debt). The Company has no knowledge of any facts or circumstances which lead it to believe that it will file for reorganization or liquidation under the bankruptcy or reorganization laws of any jurisdiction within one year from the Closing Date. The Registration Statement, the General Disclosure Package or the Prospectus Supplement sets forth as of the date hereof all outstanding secured and unsecured Indebtedness of the Company or any Subsidiary, or for which the Company or any Subsidiary has commitments. Neither the Company nor any Subsidiary is in default with respect to any Indebtedness, which would have, individually or in the aggregate, a Material Adverse Effect.

(z) ERISA. The Company fulfilled its obligations, if any, under the minimum funding standards of Section 302 of the U.S. Employee Retirement Income Security Act of 1974 (“ERISA”) and the regulations and published interpretations thereunder with respect to each “plan” as defined in Section 3(3) of ERISA and such regulations and published interpretations in which its employees are eligible to participate and each such plan is in compliance in all material respects with the presently applicable provisions of ERISA and such regulations and published interpretations. No “Reportable Event” (as defined in 12 ERISA) has occurred with respect to any “Pension Plan” (as defined in ERISA) for which the Company could have any liability. The execution of the Transaction Documents and consummation of the Offering does not constitute a triggering event under any plan or any other employment contract, whether or not legally enforceable, which (either alone or upon the occurrence of any additional or subsequent event) will or may result in any payment (of severance pay or otherwise), acceleration, increase in vesting, or increase in benefits to any current or former participant, employee or director of the Company or any of its Subsidiaries.

(aa) Taxes. The Company and its Subsidiaries have filed all material federal, state, local and foreign tax returns which are required to be filed through the date hereof, which returns are true and correct in all material respects, or has received timely extensions thereof, and has paid all taxes shown on such returns and all assessments received by the Company to the extent that the same are material and have become due. There are no material tax audits or investigations pending; nor are there any material proposed additional tax assessments against either the Company or its Subsidiaries. The Company has no knowledge of any federal, state or other governmental tax deficiency, penalty or assessment which has been or might be asserted or threatened against it which would have a Material Adverse Effect.

(bb) Foreign Corrupt Practices. Neither the Company nor any other person associated with it or acting on its behalf including, without limitation, any director, officer, agent or employee of the Company or its Subsidiaries, has, directly or indirectly, while acting on behalf of the Company or its Subsidiaries: (i) used any corporate funds for unlawful contributions, gifts, entertainment or other unlawful expenses relating to political activity; (ii) made any unlawful payment to foreign or domestic government officials or employees or to foreign or domestic political parties or campaigns from corporate funds; (iii) violated any provision of the FCPA; or (iv) made any other unlawful payment.

(cc) Accountants. To the knowledge and belief of the Company, the Company Auditor (i) is an independent registered public accounting firm as required by the Exchange Act and (ii) shall express its opinion with respect to the financial statements to be included in the Company’s Annual Report for the fiscal year ending December 31, 2024. The Company Auditor has not, during the periods covered by the financial statements included in the Prospectus, provided to the Company any non-audit services, as such term is used in Section 10A(g) of the Exchange Act.

(dd) Intentionally omitted.

(ee) Intentionally omitted.

(ff) OFAC. Neither the Company nor any of its Subsidiaries, nor, to the knowledge of the Company, any director, officer, agent, employee or affiliate of the Company or its Subsidiaries is currently subject to any U.S. sanctions administered by the Office of Foreign Assets Control of the U.S. Treasury Department (“OFAC”); and the Company will not directly or indirectly use the proceeds of the Offering, or lend, contribute or otherwise make available such proceeds to its Subsidiaries or any 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.

(gg) U.S. Real Property Holding Corporation. The Company is not and has never been a U.S. real property holding corporation within the meaning of Section 897 of the Internal Revenue Code of 1986, as amended, and the Company shall so certify upon the Representative’s request.

(hh) Bank Holding Company Act. Neither the Company nor any of its Subsidiaries or Affiliates is subject to the Bank Holding Company Act of 1956, as amended (the “BHCA”) and to regulation by the Board of Governors of the Federal Reserve System (the “Federal Reserve”). Neither the Company nor any of its Subsidiaries or Affiliates owns or controls, directly or indirectly, five percent (5%) or more of the outstanding shares of any class of voting securities or twenty-five percent (25%) or more of the total equity of a bank or any entity that is subject to the BHCA and to regulation by the Federal Reserve. Neither the Company nor any of its Subsidiaries or Affiliates exercises a controlling influence over the management or policies of a bank or any entity that is subject to the BHCA and to regulation by the Federal Reserve.

(ii) Operations. The operations of the Company and its Subsidiaries are and have been conducted at all times in compliance with applicable financial record keeping and reporting requirements of the Currency and Foreign Transactions Reporting Act of 1970, as amended, the money laundering statutes of all jurisdictions to which the Company or its Subsidiaries are subject, the rules and regulations thereunder and any related or similar rules, regulations or guidelines, issued, administered or enforced by any governmental agency (collectively, the “Money Laundering Laws”) and no action, suit or proceeding by or before any court or governmental agency, authority or body or any arbitrator involving the Company or any of its Subsidiaries with respect to the Money Laundering Laws is pending or, to the knowledge of the Company, threatened.

(jj) D&O Questionnaires. All information contained in the questionnaires completed by each of the Company’s officers and directors and provided to the Underwriter as well as the biographies of such individuals in the Registration Statement is true and correct in all material respects and the Company has not become aware of any information that would cause the information disclosed in the questionnaires completed by the directors and officers to become inaccurate and incorrect in any material respect.

(kk) FINRA Affiliation. To the knowledge of the Company, no: (i) officer or director of the Company or its Subsidiaries, (ii) owner of 5% or more of the Company's unregistered securities or (iii) owner of any amount of the Company's unregistered securities acquired within the 180-day period prior to the date of the Preliminary Prospectus has any direct or indirect affiliation or association with any FINRA member. The Company will advise the Underwriter and its counsel if it becomes aware that any officer, director or stockholder of the Company or its Subsidiaries is or becomes an affiliate or associated person of a FINRA member participating in the Offering.

(ll) Officer's Certificate. Any certificate signed by any duly authorized officer of the Company and delivered to the Representative or Golenbock shall be deemed a representation and warranty by the Company to the Underwriters as to the matters covered thereby.

(mm) Board of Directors. The Board of Directors is comprised of the persons set forth in the SEC Reports. The qualifications of the persons serving as board members and the overall composition of the Board of Directors comply with the Sarbanes-Oxley Act and the rules promulgated thereunder applicable to the Company and the rules of the Trading Market. At least one member of the Board of Directors qualifies as a "financial expert" as such term is defined under the Sarbanes-Oxley Act and the rules promulgated thereunder and the rules of the Trading Market. In addition, except as disclosed in the Registration Statement, the General Disclosure Package or the Prospectus Supplement, at least a majority of the persons serving on the Board of Directors qualify as "independent" as defined under the rules of the Trading Market.

Except as disclosed in the Registration Statement, the General Disclosure Package or the Prospectus Supplement, the Board of Directors has validly established an audit committee whose composition satisfies, and upon completion of the Offering will satisfy, the requirements of Section 303A of the Nasdaq Listing Rules and the Board of Directors and/or the audit committee of the Board of Directors has adopted a charter that satisfies the requirements of Section 303A of the Nasdaq Listing Rules.

The Board of Directors has validly established a compensation committee whose composition satisfies, and upon completion of the Offering will satisfy, the requirements of Section 303A of the Nasdaq Listing Rules and the Board of Directors and/or the compensation committee of the Board of Directors has adopted a charter that satisfies the requirements of Section 303A of the Nasdaq Listing Rules.

The Board of Directors have adopted a claw back policy which meets the requirements of Nasdaq and filed the same with its SEC Reports.

(nn) Cyber Security. Except as may be included or incorporated by reference in the Registration Statement, the General Disclosure Package or the Prospectus Supplement, (i)(x) to the Company's knowledge, there has been no material security breach or other material compromise of or relating to any of the Company's or any Subsidiary's information technology and computer systems, networks, hardware, software, data (including the data of its respective customers, employees, suppliers, vendors and any third party data maintained by or on behalf of it), equipment or technology (collectively, "IT Systems and Data") and (y) the Company and the Subsidiaries have not been notified of, and has no knowledge of any event or condition that would reasonably be expected to result in, any material security breach or other material compromise to its IT Systems and Data; (ii) the Company and the Subsidiaries are presently in compliance with all applicable laws or statutes and all judgments, orders, rules and regulations of any court or arbitrator or governmental or regulatory authority, internal policies and contractual obligations relating to the privacy and security of IT Systems and Data and to the protection of such IT Systems and Data from unauthorized use, access, misappropriation or modification, except as would not, in the case of this clause (ii), individually or in the aggregate, result in a Material Adverse Effect; (iii) the Company and the Subsidiaries have implemented and maintained commercially reasonable safeguards to maintain and protect its material confidential information and the integrity, continuous operation, redundancy and security of all IT Systems and Data; and (iv) the Company and the Subsidiaries have implemented backup and disaster recovery technology consistent with industry standards and practices.

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(oo) Environmental Laws. Except as disclosed in the Registration Statement, the General Disclosure Package or the Prospectus Supplement: (i) the Company and each of its Subsidiaries is in compliance in all material respects with all applicable federal, state, local and foreign laws, rules, regulations, decisions and orders relating to the protection of human health and safety, the environment or hazardous or toxic substances or wastes, pollutants or contaminants ("Environmental Law") which are applicable to its business; (ii) the Company and each of its Subsidiaries has received and are in compliance with all Permits required of it under applicable Environmental Laws to conduct its business and is in compliance in all material respects with all terms and conditions of any such Permit; (iii) neither the Company nor any of its Subsidiaries has received any notice of any actual or potential liability for the investigation or remediation of any disposal or release of hazardous or toxic substances or wastes, pollutants or contaminants; (iv) to the knowledge of the Company, no facts currently exist that will require either Company or its Subsidiaries to make future material capital expenditures to comply with Environmental Laws; and (v) no property which is or has been owned, leased or occupied by either of the Company or its Subsidiaries has been designated as a "Superfund site" pursuant to the Comprehensive Environmental Response, Compensation of Liability Act of 1980, as amended (42 U.S.C. Section 9601, et. seq.) ("CERCLA"), or otherwise designated as a contaminated site under applicable state or local law. Neither the Company nor its Subsidiaries has been named as a "potentially responsible party" under CERCLA; except, in the case of any of clauses (i), (ii) or (iii) above, for any such failure to comply or failure to receive required Permits or liability as would not, individually or in the aggregate, have a Material Adverse Effect.

(pp) Iran Sanctions. Neither the Company nor any of its directors or officers or, to the knowledge of the Company, any agent, employee, affiliate or other person acting on behalf of the Company has engaged in any activities sanctionable under the Comprehensive Iran Sanctions, Accountability, and Divestment Act of 2010, the Iran Sanctions Act of 1996, the National Defense Authorization Act for Fiscal Year 2012, the Iran Threat Reduction and Syria Human Rights Act of 2012 or any Executive Order relating to any of the foregoing (collectively, and as each may be amended from time to time, the "Iran Sanctions"); and the Company will not knowingly, directly or indirectly use the proceeds of the Offering, or lend, contribute or otherwise make available such proceeds to any Subsidiary, joint venture partner or other person or entity, for the purpose of engaging in any activities sanctionable under the Iran Sanctions.

(qq) Statistical and Market Related Data. The statistical and market related data included in the Registration Statement, the General Disclosure Package or the Prospectus Supplement are based on or derived from sources that the Company believes to be reliable and accurate. The Company had a reasonable basis for, and made in good faith, each "forward-looking statement" (within the meaning of Section 27A of the Act or Section 21E of the Exchange Act) contained or incorporated by reference in the Registration Statement, the General Disclosure Package or the Prospectus Supplement.

(rr) Stabilization or Manipulation. Neither the Company nor any of its Subsidiaries has taken, nor will it take, directly or indirectly, any action designed to or which might reasonably be expected to cause or result in, or which has constituted or which might reasonably be expected to constitute, the stabilization or manipulation of the price of the Common Stock or any other security of the Company to facilitate the sale or resale of any of Public Securities.

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(ss) Prohibited Activities. Except as disclosed in the Registration Statement, the General Disclosure Package or the Prospectus Supplement, and as preapproved in accordance with the requirements set forth in Section 10A of the Exchange Act, the Auditors have not been engaged by the Company to perform any "prohibited activities" (as defined in Section 10A of the Exchange Act).

(tt) Off-Balance Sheet Arrangements. Except as disclosed in the Registration Statement or in the General Disclosure Package, there are no material off-balance sheet arrangements (as defined in Item 303 of Regulation S-K) that have or are reasonably likely to have a material current or future effect on the Company's financial condition, revenues or expenses, changes in financial condition, results of operations, liquidity, capital expenditures or capital resources.

(uu) No Payment of Net Proceeds to FINRA Members. None of the net proceeds of the Offering will be paid by the Company to any participating FINRA member or any affiliate or associate of any participating FINRA member, except as specifically authorized herein.

(vv) Compliance with Laws. Each of the Company and its Subsidiaries: (i) is and at all times has been in compliance with all statutes, rules, or regulations applicable to the ownership, testing, development, manufacture, packaging, processing, use, distribution, marketing, labeling, promotion, sale, offer for sale, storage, import, export or disposal of any product manufactured or distributed by the Company or its Subsidiaries ("Applicable Laws"), except as could not, individually or in the aggregate, reasonably be expected to result in a Material Adverse Effect; (ii) has not received any FDA Form 483, notice of adverse finding, warning letter, untitled letter or other correspondence or notice from the FDA or any other foreign, federal state or local governmental authority alleging or asserting noncompliance with any Applicable Laws or any Permits or amendments thereto required by any such Applicable Laws ("Authorizations"); (iii) possesses all material Authorizations and such Authorizations are valid and in full force and effect and are not in material violation of any term of any such Authorizations; (iv) has not received notice of any claim, action, suit, proceeding, hearing, enforcement, investigation, arbitration or other action from any foreign, federal state or local governmental authority or third party alleging that any product operation or activity is in violation of any Applicable Laws or Authorizations and has no knowledge that any such governmental authority or third party is considering any such claim, litigation, arbitration, action, suit, investigation or proceeding; (v) has not received notice that any foreign, federal state or local governmental authority has taken, is taking or intends to take action to limit, suspend, modify or revoke any Authorizations and has no knowledge that any such governmental authority is considering such action; (vi) has filed, obtained, maintained or submitted all material reports, documents, forms, notices, applications, records, claims, submissions and supplements or amendments as required by any Applicable Laws or Authorizations and that all such reports, documents, forms, notices, applications, records, claims, submissions and supplements or amendments were complete and correct on the date filed (or were corrected or supplemented by a subsequent submission); and (vii) has not, either voluntarily or involuntarily, initiated, conducted, or issued or caused to be initiated, conducted or issued, any recall, market withdrawal or replacement, safety alert, post-sale warning, "dear healthcare provider" letter, or other notice or action relating to the alleged lack of safety or efficacy of any product or any alleged product defect or violation and, to the Company's knowledge, no third party has initiated, conducted or intends to initiate any such notice or action.

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(ww) Regulatory Filings. Except as disclosed in the Registration Statement, the General Disclosure Package and the Prospectus Supplement, neither the Company nor any of its Subsidiaries has failed to file with the applicable governmental authorities (including, without limitation, the FDA, or any foreign, federal, state, provincial or local governmental authority performing functions similar to those performed by the FDA) any required filing, declaration, listing, registration, report or submission, except for such failures that, individually or in the aggregate, would not have a Material Adverse Effect; except as disclosed in the Registration Statement, the General Disclosure Package or the Prospectus Supplement, all such filings, declarations, listings, registrations, reports or submissions were in compliance with applicable laws when filed and no deficiencies have been asserted by any applicable regulatory authority with respect to any such filings, declarations, listings, registrations, reports or submissions, except for any deficiencies that, individually or in the aggregate, would not have a Material Adverse Effect. The Company has operated and currently is, in all material respects, in compliance with the United States Federal Food, Drug, and Cosmetic Act, all applicable rules and regulations of the FDA and other federal, state, local and foreign governmental authority exercising comparable authority. The Company has no knowledge of any studies, tests or trials not described in the Prospectus the results of which reasonably call into question in any material respect the results of the studies, tests and trials described in the Registration Statement, the General Disclosure Package and/or the Prospectus Supplement.

(xx) Clinical Studies. The preclinical studies and tests and clinical trials described in the Registration Statement, the General Disclosure Package or the Prospectus Supplement were, and, if still pending, are being conducted in all material respects in accordance with the experimental protocols, procedures and controls pursuant to, where applicable, accepted professional and scientific standards for products or product candidates comparable to those being developed by the Company; the descriptions of such studies, tests and trials, and the results thereof, contained in the Registration Statement, the General Disclosure Package or the Prospectus Supplement are accurate and complete in all material respects; the Company is not aware of any tests, studies or trials not described in the Registration Statement, the General Disclosure Package or the Prospectus Supplement, the results of which reasonably call into question the results of the tests, studies and trials described in the Registration Statement, the General Disclosure Package or the Prospectus Supplement, as applicable; and the Company has not received any written notice or correspondence from the FDA or any federal, foreign, state or local governmental authority exercising comparable authority or any institutional review board or comparable authority requiring the termination, suspension, clinical hold or material modification of any tests, studies or trials.

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ARTICLE IV. OTHER AGREEMENTS OF THE PARTIES

4.1 Amendments to Registration Statement. The Company has delivered, or will as promptly as practicable deliver, to the Underwriters complete conformed copies of the Registration Statement and of each consent and certificate of experts, as applicable, filed as a part thereof, and conformed copies of the Registration Statement (without exhibits), the General Disclosure Package and the Prospectus Supplement, as amended or supplemented, in such quantities and at such places as an Underwriter reasonably requests. Neither the Company nor any of its directors and officers has distributed and none of them will distribute, prior to the Closing Date, any offering material in connection with the offering and sale of the Public Securities other than the the Registration Statement, the General Disclosure Package and Prospectus Supplement, and copies of the documents incorporated by reference therein. The Company shall not file any such amendment or supplement to which the Representative shall reasonably object in writing.

4.2 Federal Securities Laws.

(a) Compliance. During the time when the General Disclosure Package and Prospectus Supplement is required to be delivered under the Securities Act, the Company will use its commercially reasonable efforts to comply with all requirements imposed upon it by the Securities Act and the rules and regulations thereunder and the Exchange Act and the rules and regulations thereunder, as from time to time in force, so far as necessary to permit the continuance of sales of or dealings in the Public Securities in accordance with the provisions hereof and the General Disclosure Package and Prospectus Supplement. If at any time when the General Disclosure Package and Prospectus Supplement relating to the Public Securities is required to be delivered under the Securities Act, any event shall have occurred as a result of which, in the opinion of counsel for the Company or counsel for the Underwriters, the Prospectus, any Preliminary Prospectus, any Permitted Free Writing Prospectus or Prospectus Supplement, as then amended or supplemented, includes an untrue statement of a material fact or omits 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, or if it is necessary at any time to amend those documents to comply with the Securities Act, the Company will notify the Underwriters promptly and prepare and file with the Commission, subject to Section 4.1 hereof, an appropriate amendment or supplement in accordance with Section 10 of the Securities Act.

(b) Filing of Final Prospectus Supplement. The Company will file the Prospectus Supplement (in form and substance satisfactory to the Representative) with

the Commission pursuant to the requirements of Rule 424.

(c) Exchange Act Registration. For a period of two (2) years from the Execution Date, the Company will use its commercially reasonable efforts to maintain the registration of the Common Stock under the Exchange Act. The Company will not deregister the Common Stock under the Exchange Act without the prior written consent of the Representative, which consent shall not be unreasonably withheld, conditioned or delayed.

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(d) Free Writing Prospectuses. The Company represents and agrees that it has not made and will not make any offer relating to the Public Securities that would constitute an issuer free writing prospectus, as defined in Rule 433 of the rules and regulations under the Securities Act, without the prior written consent of the Representative. Any such free writing prospectus consented to by the Representative is herein referred to as a "Permitted Free Writing Prospectus". The Company represents that it will treat each Permitted Free Writing Prospectus as an "issuer free writing prospectus" as defined in Rule 405 under the Securities Act, and has complied and will comply with the applicable requirements of Rule 433 of the Securities Act, including timely Commission filing where required, legending and record keeping.

4.3 Delivery to the Underwriters of Prospectuses. The Company will deliver to the Underwriters, without charge, from time to time during the period when the Preliminary Prospectus, Prospectus and Prospectus Supplement is required to be delivered under the Securities Act or the Exchange Act such number of copies of each Preliminary Prospectus, Prospectus, Prospectus Supplement, and Permitted Free Writing Prospectus as the Underwriters may reasonably request, including exhibits, and all post-effective amendments thereto and copies of all exhibits filed therewith or incorporated therein by reference and all original executed consents of certified experts.

4.4 Effectiveness and Events Requiring Notice to the Underwriters. The Company will use its commercially reasonable efforts to cause the Registration Statement to remain effective with a current prospectus until nine (9) months from the Execution Date, and will notify the Underwriters 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 its 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 its 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, General Disclosure Package or Prospectus Supplement; (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 4.4 that, in the judgment of the Company, makes any statement of a material fact made in the Registration Statement, General Disclosure Package or Prospectus Supplement untrue or that requires the making of any changes in the Registration Statement or the Preliminary Prospectus, Prospectus and Prospectus Supplement 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 will use commercially reasonable efforts to obtain promptly the lifting of such order.

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4.5 Review of Financial Statements. For a period of five (5) years from the Execution Date, so long as the Common Stock is registered pursuant to the Exchange Act, the Company, at its expense, shall cause its regularly engaged independent registered public accountants to review (but not audit) the Company's financial statements for each of the first three (3) fiscal quarters prior to the announcement of quarterly financial information.

4.6 Expenses of the Offering.

(a) General Expenses Related to the Offering. The Company hereby agrees to pay on each of the Closing Date and each Option Closing Date, if any, to the extent not paid at the Closing Date, all reasonable, necessary and accountable out-of-pocket expenses incident to the performance of the obligations of the Company under this Agreement (except for those that FINRA regulation requires to be borne by a selling agent, placement agent or underwriter), including, but not limited to: (a) all filing fees and communication expenses relating to the registration of the Public Securities to be sold in the Offering (including the Option Securities) with the Commission; (b) all FINRA Public Offering Filing System fees associated with the review of the Offering by FINRA; all fees and expenses relating to the listing of such Closing Securities and Option Securities on the Trading Market and such other stock exchanges as the Company and the Representative together determine; (c) all fees, expenses and disbursements relating to the registration or qualification of such Public Securities under the "blue sky" securities laws of such states and other foreign jurisdictions as the Representative may reasonably designate (including, without limitation, all filing and registration fees, and the fees and expenses of Blue Sky counsel); (d) the costs of all mailing and printing of the underwriting documents (including, without limitation, the Underwriting Agreement, any Blue Sky Surveys and, if appropriate, any Agreement Among Underwriters, Selected Dealers' Agreement, Underwriters' Questionnaire and Power of Attorney), Registration Statements, prospectuses and all amendments, supplements and exhibits thereto and as many preliminary and final Prospectuses and Prospectus Supplements as the Representative may reasonably deem necessary; (e) the costs and expenses of the Company's public relations firm; (f) the costs of preparing, printing and delivering the Public Securities; (g) fees and expenses of the Transfer Agent for the Public Securities (including, without limitation, any fees required for same-day processing of any instruction letter delivered by the Company); (h) stock transfer and/or stamp taxes, if any, payable upon the transfer of securities from the Company to the Underwriters; (i) the fees and expenses of the Company's accountants; (j) the fees and expenses of the Company's legal counsel and other agents and representatives; and (k) the Underwriters' costs of mailing prospectuses to prospective investors. The Underwriters may deduct from the net proceeds of the Offering payable to the Company on the Closing Date, or each Option Closing Date, if any, the expenses set forth herein to be paid by the Company to the Underwriters, subject to the maximum amount permitted under Section 4.6(b).

4.7 Application of Net Proceeds. The Company will apply the net proceeds from the Offering received by it in a manner consistent with the application described under the caption "Use of Proceeds" in the Prospectus Supplement.

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4.8 Delivery of Earnings Statements to Security Holders. The Company will make generally available to its security holders as soon as practicable, but not later than the first day of the fifteenth full calendar month following the Execution Date, an earnings statement (which need not be certified by independent public or independent certified public accountants unless required by the Securities Act or the Rules and Regulations under the Securities Act, but which shall satisfy the provisions of Rule 158(a) under Section 11(a) of the Securities Act) covering a period of at least twelve consecutive months beginning after the Execution Date.

4.9 Stabilization. Neither the Company, nor, to its knowledge, any of its employees, directors or shareholders (without the consent of the Representative) has taken or will take, directly or indirectly, any action designed to or that has constituted or that might reasonably be expected to cause or result in, under 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.

4.10 Internal Controls. The Company shall use commercially reasonable efforts to 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.

4.11 Accountants. The Company shall continue to retain a nationally recognized independent certified public accounting firm for a period of at least five (5) years after the Execution Date. The Underwriters acknowledge that the Company Auditor is acceptable to the Underwriters.

4.12 FINRA. The Company shall advise the Underwriters (who shall make an appropriate filing with FINRA) if it is aware that any 10% or greater shareholder of the Company becomes an affiliate or associated person of an Underwriter.

4.13 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. Notwithstanding anything in this Agreement to the contrary, the Company acknowledges that the Underwriters may have financial interests in the success of the Offering that are not limited to the difference between the price to the public and the purchase price paid to the Company by the Underwriters for the shares and the Underwriters have no obligation to disclose, or account to the Company for, any of such additional financial interests. The Company hereby waives and releases, to the fullest extent permitted by law, any claims that the Company may have against the Underwriters with respect to any breach or alleged breach of fiduciary duty.

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4.14 Board Composition and Board Designations. While the Common Stock is listed on the Trading Market, the Company shall ensure that: (i) the qualifications of the persons serving as board members and the overall composition of the Board of Directors comply with the Sarbanes-Oxley Act and the rules promulgated thereunder and with the listing requirements of the Trading Market and (ii) if applicable, at least one member of the Board of Directors qualifies as a "financial expert" as such term is defined under the Sarbanes-Oxley Act and the rules promulgated thereunder.

4.15 Securities Laws Disclosure; Publicity. At the request of the Representative, by 8:30 a.m. (New York City time) on the date hereof, the Company shall issue a press release disclosing the material terms of the Offering. The Company and the Representative shall consult with each other in issuing any other press releases with respect to the Offering, and neither the Company nor any Underwriter shall issue any such press release nor otherwise make any such public statement without the prior written consent of the Company, with respect to any press release of such Underwriter, or without the prior written consent of such Underwriter, with respect to any press release of the Company, which consent shall not unreasonably be withheld or delayed, except if such disclosure is required by law in the reasonable judgment of the disclosing party's counsel, in which case the disclosing party shall promptly provide the other party with prior notice of such public statement or communication. The Company will not issue press releases or engage in any other publicity, without the Representative's prior written consent, for a period ending at 5:00 p.m. (New York City time) on the first Business Day following the 45th day following the Closing Date, other than normal and customary releases issued in the ordinary course of the Company's business or as otherwise permitted under the terms of this Section 4.15.

4.16 Shareholder Rights Plan. No claim will be made or enforced by the Company or, with the consent of the Company, any other Person, that any Underwriter of the Public Securities is an "Acquiring Person" under any control share acquisition, business combination, poison pill (including any distribution under a rights agreement) or similar anti-takeover plan or arrangement in effect or hereafter adopted by the Company, or that any Underwriter of Public Securities could be deemed to trigger the provisions of any such plan or arrangement, by virtue of receiving Public Securities.

4.17 Reservation of Common Stock. As of the date hereof, the Company has reserved and the Company shall continue to reserve and keep available at all times, free of preemptive rights, a sufficient number of shares of Common Stock for the purpose of enabling the Company to issue Option Securities pursuant to the Over-Allotment Option, including for the avoidance of doubt, the Common Stock underlying the Underwriter Warrant pursuant to the terms thereof for the reservation of shares of Common Stock.

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4.18 Listing of Common Stock. The Company hereby agrees to use commercially reasonable efforts to maintain the listing or quotation of the Common Stock (including the Closing Shares, the Option Shares, and the Common Stock underlying the Underwriter Warrant) on the Trading Market on which it is currently listed. The Company further agrees, if the Company applies to have the Common Stock traded on any other Trading Market, it will then include in such application all of the Closing Shares, Option Shares and the Common Stock underlying the Underwriter Warrant, and will take such other action as is necessary to cause all of such shares of Common Stock to be listed or quoted on such other Trading Market as promptly as possible. The Company will then take commercially reasonable efforts to continue the listing and trading of its Common Stock on a Trading Market and will comply in all respects with the Company's reporting, filing and other obligations under the bylaws or rules of the Trading Market. The Company agrees use commercially reasonable efforts to maintain the eligibility of the Common Stock for electronic transfer through the Depository Trust Company or another established clearing corporation, including, without limitation, by timely payment of fees to the Depository Trust Company or such other established clearing corporation in connection with such electronic transfer.

4.19 Reserved.

4.20 Subsequent Equity Sales.

(a) Unless mutually agreed upon in writing, by the Underwriter and the Company, from the date hereof until the twelve (12) month anniversary of the date hereof, neither the Company nor any Subsidiary shall issue, enter into any agreement to issue or propose or announce the issuance or proposed issuance of any shares of Common Stock or Common Stock Equivalents or file any registration statement or amendment or supplement thereto, including without limitation, in connection with any at-the-market or similar agreement but excluding that certain ATM Sales Agreement, dated as of May 2, 2024, by and between the Company and the Underwriter, other than (i) the Prospectus Supplement or any other amendments and supplements to the Registration Statement in connection with the Offering, (ii) a registration statement on Form S-8 or (iii) a registration statement covering the Common Stock underlying the Underwriter Warrants.

(b) Unless mutually agreed upon in writing, by the Underwriter and the Company, from the date hereof until the twelve (12) month anniversary of the date hereof, 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 regardless of whether shares pursuant to such agreement have actually been issued and regardless of whether such agreement is subsequently canceled. 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.

(c) Notwithstanding the foregoing, this Section 4.20 shall not apply in respect of an Exempt Issuance, except that no Variable Rate Transaction shall be an Exempt Issuance.

4.21 Research Independence. The Company acknowledges that each Underwriter's research analysts and research departments, if any, are required to be independent from their respective investment banking divisions and are subject to certain regulations and internal policies, and that such Underwriter's research analysts may hold and make statements or investment recommendations and/or publish research reports with respect to the Company and/or the Offering that differ from the views of its investment bankers. The Company hereby waives and releases, to the fullest extent permitted by law, any claims that the Company may have against such Underwriter with respect to any conflict of interest that may arise from the fact that the views expressed by their independent research analysts and research departments may be different from or inconsistent with the views or advice communicated to the Company by such Underwriter's investment banking divisions. The Company acknowledges that the Representative is a full service securities firm and as such from time to time, subject to applicable securities laws, may effect transactions for its own account or the account of its customers and hold long or short position in debt or equity securities of the Company.

ARTICLE V. DEFAULT BY UNDERWRITERS

If on the Closing Date or any Option Closing Date, if any, any Underwriter shall fail to purchase and pay for the portion of the Closing Securities or Option Securities, as the case may be, which such Underwriter has agreed to purchase and pay for on such date (otherwise than by reason of any default on the part of the Company), the Representative, or if the Representative is the defaulting Underwriter, the non-defaulting Underwriters, shall use their reasonable efforts to procure within 36 hours thereafter one or more of the other Underwriters, or any others, to purchase from the Company such amounts as may be agreed upon and upon the terms set forth herein, the Closing Securities or Option Securities, as the case may be, which the defaulting Underwriter or Underwriters failed to purchase. If during such 36 hours the Representative shall not have procured such other Underwriters, or any others, to purchase the Closing Securities or Option Securities, as the case may be, agreed to be purchased by the defaulting Underwriter or Underwriters, then (a) if the aggregate number of Closing Securities or Option Securities, as the case may be, with respect to which such default shall occur does not exceed 10% of the Closing Securities or Option Securities, as the case may be, covered hereby, the other Underwriters shall be obligated, severally, in proportion to the respective numbers of Closing Securities or Option Securities, as the case may be, which they are obligated to purchase hereunder, to purchase the Closing Securities or Option Securities, as the case may be, which such defaulting Underwriter or Underwriters failed to purchase, or (b) if the aggregate number of Closing Securities or Option Securities, as the case may be, with respect to which such default shall occur exceeds 10% of the Closing Securities or Option Securities, as the case may be, covered hereby, the Company or the Representative will have the right to terminate this Agreement without liability on the part of the non-defaulting Underwriters or of the Company except to the extent provided in Article VI hereof; provided that if the default occurs with respect to the Option Securities only, this Agreement may not be terminated by the Representative as to the Closing Securities. In the event of a default by any Underwriter or Underwriters, as set forth in this Article V, the applicable Closing Date may be postponed for such period, not exceeding seven days, as the Representative, or if the Representative is the defaulting Underwriter, the non-defaulting Underwriters, may determine in order that the required changes in the Prospectus or in any other documents or arrangements may be effected. The term "Underwriter" includes any Person substituted for a defaulting Underwriter. Any action taken under this Section shall not relieve any defaulting Underwriter from liability in respect of any default of such Underwriter under this Agreement.

ARTICLE VI. INDEMNIFICATION

6.1 Indemnification of the Underwriters. Subject to the conditions set forth below, the Company agrees to indemnify and hold harmless the Underwriters, and each dealer selected by each Underwriter that participates in the offer and sale of the Public Securities (each a "Selected Dealer") and each of their respective directors, officers and employees and each Person, if any, who controls such Underwriter or any Selected Dealer ("Controlling Person") within the meaning of Section 15 of the Securities Act or Section 20 of the Exchange Act, against any and all loss, liability, claim, damage and expense whatsoever (including but not limited to any and all legal or other expenses reasonably incurred in investigating, preparing or defending against any litigation, commenced or threatened, or any claim whatsoever, whether arising out of any action between such Underwriter and the Company or between such Underwriter and any third party or otherwise) to which they or any of them may become subject under the Securities Act, the Exchange Act or any other statute or at common law or otherwise or under the laws of foreign countries, arising out of or based upon any untrue statement or alleged untrue statement of a material fact contained in (i) any Permitted Free Writing Prospectus or Preliminary Prospectus, if any, the Registration Statement, the Prospectus or Prospectus Supplement (as from time to time each may be amended and supplemented); (ii) any materials or information provided to investors by, or with the approval of, the Company in connection with the marketing of the offering of the Public Securities, including any "road show" or investor presentations made to investors by the Company (whether in person or electronically); or (iii) any application or other document or written communication (in this Article VI, 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, Trading Market or any 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 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 written information furnished to the Company with respect to the applicable Underwriter by or on behalf of such Underwriter expressly for use in any Permitted Free Writing Prospectus or Preliminary Prospectus, if any, the Registration Statement, Prospectus or Prospectus Supplement, or any amendment or supplement thereto, or in any application, as the case may be. With respect to any untrue statement or omission or alleged untrue statement or omission made in a Preliminary Prospectus, if any, the indemnity agreement contained in this Section 6.1 shall not inure to the benefit of an Underwriter to the extent that any loss, liability, claim, damage or expense of such Underwriter results from the fact that a copy of the Prospectus and final Prospectus Supplement was not given or sent to the Person asserting any such loss, liability, claim or damage at or prior to the written confirmation of sale of the Public Securities to such Person as required by the Securities Act and the rules and regulations thereunder, and if the untrue statement or omission has been corrected in the Prospectus, unless such failure to deliver the Prospectus and final Prospectus Supplement was a result of non-compliance by the Company with its obligations under this Agreement. The Company agrees promptly to notify each Underwriter of the commencement of any litigation or proceedings against the Company or any of its officers, directors or Controlling Persons in connection with the issue and sale of the Public Securities or in connection with the Registration Statement, Prospectus and Prospectus Supplement.

6.2 Procedure. If any action is brought against an Underwriter, a Selected Dealer or a Controlling Person in respect of which indemnity may be sought against the

Company pursuant to Section 6.1, such Underwriter, Selected Dealer or Controlling Person, as the case may be, shall promptly notify the Company in writing of the institution of such action and the Company shall assume the defense of and may settle such action, including the employment and fees of counsel (subject to the reasonable approval of such Underwriter or Selected Dealer, or Controlling Person as the case may be) and payment of actual expenses. Such Underwriter, Selected Dealer or Controlling Person shall have the right to employ its or their own counsel in any such case, but the fees and expenses of such counsel shall be at the expense of such Underwriter, Selected Dealer or Controlling Person unless (a) the employment of such counsel at the expense of the Company shall have been authorized in writing by the Company in connection with the defense of such action, or (b) the Company shall not have employed counsel to have charge of the defense of such action within a reasonable time after receiving written notification of the applicable action by the Underwriter, Selected Dealer or Controlling Person, as the case may be, or (c) the named parties to any such proceeding (including any impleaded parties) include both the Company, on the one hand, and an Underwriter, Selected Dealer or Controlling Person, on the other hand, and representation of both parties by the same counsel would be inappropriate due to actual or potential differing interests between them, in any of which events set forth in clauses (a), (b) and (c) the reasonable fees and expenses of not more than one additional firm of attorneys (subject to the reasonable approval of the Company) selected by such Underwriter (in addition to local counsel), Selected Dealer and/or Controlling Person shall be borne by the Company. Notwithstanding anything to the contrary contained herein, if any Underwriter, Selected Dealer or Controlling Person shall assume the defense of such action as provided above, the Company shall have the right to approve the terms of any settlement of such action which approval shall not be unreasonably withheld.

6.3 Indemnification of the Company. Each Underwriter severally and not jointly agrees to indemnify and hold harmless the Company, its directors, officers and employees and agents 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 loss, liability, claim, damage and expense described in the foregoing indemnity from the Company to such Underwriter, as incurred, but only with respect to untrue statements or omissions, or alleged untrue statements or omissions made in any Permitted Free Writing Prospectus or Preliminary Prospectus, if any, the Registration Statement, Prospectus or Prospectus Supplement or any amendment or supplement thereto or in any application, in reliance upon, and in strict conformity with, written information furnished to the Company with respect to such Underwriter by or on behalf of such Underwriter expressly for use in such Permitted Free Writing Prospectus or Preliminary Prospectus, if any, the Registration Statement, Prospectus, or Prospectus Supplement or any amendment or supplement thereto or in any such application. For purposes of this Section 6.3, it is acknowledged that the information provided by the Underwriter or on behalf of the Underwriter is only the Underwriter Information. In case any action shall be brought against the Company or any other Person so indemnified based on any Permitted Free Writing Prospectus or Preliminary Prospectus, if any, the Registration Statement, Prospectus, or Prospectus Supplement or any amendment or supplement thereto or any application, and in respect of which indemnity may be sought against such 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 such Underwriter by the provisions of this Article VI. The Underwriters' obligations in this Section 6.3 to indemnify the Company are several in proportion to their respective underwriting obligations and not joint. Notwithstanding the provisions of this Section 6.3, no Underwriter shall be required to indemnify the Company or its directors, officers and employees and agents who control the Company within the meaning of Section 15 of the Securities Act or Section 20 of the Exchange Act for any amount in excess of the underwriting discounts and commissions applicable to the Public Securities purchased by such Underwriter.

6.4 Contribution.

(a) Contribution Rights. In order to provide for just and equitable contribution under the Securities Act in any case in which (i) any Person entitled to indemnification under this Article VI makes a claim for indemnification pursuant hereto but it is judicially determined (by the entry of a final judgment or decree by a court of competent jurisdiction and the expiration of time to appeal or the denial of the last right of appeal) that such indemnification may not be enforced in such case notwithstanding the fact that this Article VI provides for indemnification in such case, or (ii) contribution under the Securities Act, the Exchange Act or otherwise may be required on the part of any such Person in circumstances for which indemnification is provided under this Article VI, then, and in each such case, the Company and each Underwriter, severally and not jointly, shall contribute to the aggregate losses, liabilities, claims, damages and expenses of the nature contemplated by said indemnity agreement incurred by the Company and such Underwriter, as incurred, in such proportions that such Underwriter is responsible for that portion represented by the percentage that the underwriting discount appearing on the cover page of the Prospectus bears to the initial offering price appearing thereon and the Company is responsible for the balance; provided, that, no Person guilty of a fraudulent misrepresentation (within the meaning of Section 11(f) of the Securities Act) shall be entitled to contribution from any Person who was not guilty of such fraudulent misrepresentation. For purposes of this Section, each director, officer and employee of such Underwriter or the Company, as applicable, and each Person, if any, who controls such Underwriter or the Company, as applicable, within the meaning of Section 15 of the Securities Act shall have the same rights to contribution as such Underwriter or the Company, as applicable. Notwithstanding the provisions of this Section 6.4, no Underwriter shall be required to contribute any amount in excess of the underwriting discounts and commissions applicable to the Public Securities purchased by such Underwriter. The Underwriters' obligations in this Section 6.4 to contribute are several in proportion to their respective underwriting obligations and not joint.

(b) Contribution Procedure. Within fifteen days after receipt by any party to this Agreement (or its representative) of notice of the commencement of any action, suit or proceeding, such party will, if a claim for contribution in respect thereof is to be made against another party ("contributing party"), notify the contributing party of the commencement thereof, but the failure to so notify the contributing party will not relieve it from any liability which it may have to any other party other than for contribution hereunder. In case any such action, suit or proceeding is brought against any party, and such party notifies a contributing party or its representative of the commencement thereof within the aforesaid fifteen days, the contributing party will be entitled to participate therein with the notifying party and any other contributing party similarly notified. Any such contributing party shall not be liable to any party seeking contribution on account of any settlement of any claim, action or proceeding affected by such party seeking contribution without the written consent of such contributing party. The contribution provisions contained in this Section 6.4 are intended to supersede, to the extent permitted by law, any right to contribution under the Securities Act, the Exchange Act or otherwise available.

ARTICLE VII. MISCELLANEOUS

7.1 Termination.

(a) Termination Right. The Representative 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 its opinion will in the immediate future materially disrupt, general securities markets in the United States; or (ii) if trading on any Trading Market 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 the Representative's opinion, make it inadvisable to proceed with the delivery of the Public Securities, or (vii) if the Company is in material breach of any of its representations, warranties or covenants hereunder, or (viii) if the Representative shall have become aware after the date hereof of such a material adverse change in the conditions or prospects of the Company, or such adverse material change in general market conditions as in the Representative's 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.

(b) Reserved

(c) 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 Article VI shall not be in any way effected by such election or termination or failure to carry out the terms of this Agreement or any part hereof.

7.2 Entire Agreement. The Transaction Documents, together with the exhibits and schedules thereto, the Prospectus and the Prospectus Supplement (together with the other agreements and documents being delivered pursuant to or in connection with this Agreement), contain the entire understanding of the parties with respect to the subject matter hereof and thereof and supersede all prior agreements and understandings, oral or written, with respect to such matters, which the parties acknowledge have been merged into such documents, exhibits and schedules.

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7.3 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 time of transmission, if such notice or communication is delivered via 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 time of transmission, if such notice or communication is delivered via 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 on the signature pages attached hereto.

7.4 Amendments; Waivers. No provision of this Agreement may be waived, modified, supplemented or amended except in a written instrument signed, in the case of an amendment, by the Company and the Representative. No waiver of any default with respect to any provision, condition or requirement of this Agreement shall be deemed to be a continuing waiver in the future or a waiver of any subsequent default or a waiver of any other provision, condition or requirement hereof, nor shall any delay or omission of any party to exercise any right hereunder in any manner impair the exercise of any such right.

7.5 Headings. The headings herein are for convenience only, do not constitute a part of this Agreement and shall not be deemed to limit or affect any of the provisions hereof.

7.6 Successors and Assigns. This Agreement shall be binding upon and inure to the benefit of the parties and their successors and permitted assigns.

7.7 Governing Law. All questions concerning the construction, validity, enforcement and interpretation of the Transaction Documents 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 Proceedings concerning the interpretations, enforcement and defense of the transactions contemplated by this Agreement and any other Transaction Documents (whether brought against a party hereto or its 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 (including with respect to the enforcement of any of the Transaction Documents), and hereby irrevocably waives, and agrees not to assert in any Proceeding, any claim that it is not personally subject to the jurisdiction of any such court, that such 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 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 Agreement 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 a Proceeding to enforce any provisions of the Transaction Documents, then, in addition to the obligations of the Company under Article VI, the prevailing party in such Proceeding shall be reimbursed by the other party for its reasonable attorneys' fees and other costs and expenses incurred with the investigation, preparation and prosecution of such Proceeding.

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7.8 Survival. The representations and warranties contained herein shall survive the Closing and the Option Closing, if any, and the delivery of the Public Securities.

7.9 Execution. This Agreement may be executed in two or more counterparts, all of which when taken together shall be considered one and the same agreement and shall become effective when counterparts have been signed by each party and delivered to each other party, it being understood that the parties need not sign the same counterpart. In the event that any signature is delivered by e-mail delivery of a ".pdf" format data file, such signature shall create a valid and binding obligation of the party executing (or on whose behalf such signature is executed) with the same force and effect as if such ".pdf" signature page were an original thereof.

7.10 Severability. If any term, provision, covenant or restriction of this Agreement is held by a court of competent jurisdiction to be invalid, illegal, void or unenforceable, the remainder of the terms, provisions, covenants and restrictions set forth herein shall remain in full force and effect and shall in no way be affected, impaired or invalidated, and the parties hereto shall use their commercially reasonable efforts to find and employ an alternative means to achieve the same or substantially the same result as that contemplated by such term, provision, covenant or restriction. It is hereby stipulated and declared to be the intention of the parties that they would have executed the remaining terms, provisions, covenants and restrictions without including any of such that may be hereafter declared invalid, illegal, void or unenforceable.

7.11 Remedies. In addition to being entitled to exercise all rights provided herein or granted by law, including recovery of damages, the Underwriters and the Company will be entitled to specific performance under the Transaction Documents. The parties agree that monetary damages may not be adequate compensation for any loss incurred by reason of any breach of obligations contained in the Transaction Documents and hereby agree to waive and not to assert in any Action for specific performance of any such obligation the defense that a remedy at law would be adequate.

7.12 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 Business Day, then such action may be taken or such right may be exercised on the next succeeding Business Day.

7.13 Construction. The parties agree that each of them and/or their respective counsel have reviewed and had an opportunity to revise the Transaction Documents and, therefore, the normal rule of construction to the effect that any ambiguities are to be resolved against the drafting party shall not be employed in the interpretation of the Transaction Documents or any amendments thereto. In addition, each and every reference to share prices and shares of Common Stock in any Transaction Document shall be subject to adjustment for reverse and forward stock splits, stock dividends, stock combinations and other similar transactions of the Common Stock that occur after the date of this Agreement.

7.14 WAIVER OF JURY TRIAL, IN ANY PROCEEDING IN ANY JURISDICTION BROUGHT BY ANY PARTY AGAINST ANY OTHER PARTY ARISING OUT OF OR RELATING TO THIS AGREEMENT OR THE TRANSACTIONS CONTEMPLATED HEREBY, THE PARTIES EACH KNOWINGLY AND INTENTIONALLY, TO THE GREATEST EXTENT PERMITTED BY APPLICABLE LAW, HEREBY ABSOLUTELY, UNCONDITIONALLY,

(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 for that purpose, whereupon this letter shall constitute a binding agreement among the Company and the several Underwriters in accordance with its terms.

Very truly yours,

HEARTBEAM, INC.

By: /s/ Robert Eno
Name: Robert Eno
Title: Chief Executive Officer

Address for Notice:

HeartBeam, Inc., 2118 Walsh Avenue, Suite 210, Santa Clara, CA 95050, Attention: Tim Cruickshank, Email: [***]

Copy to (which will not serve as notice):

Lucosky Brookman LLP, 111 Broadway, Suite 807, New York, NY 10006, Attn: Soyoun Lee, Email: [***]

Accepted on the date first above written.

Public Ventures, LLC

As the Representative of the several Underwriters listed on Schedule I

By: Public Ventures, LLC

By: /s/ Anthony DiGiandomenico
Name: Anthony DiGiandomenico
Title: Head of Investment Banking

Address for Notice:

14135 Midway Road, Suite G-150
Addison, TX 75001
Attention: Anthony DiGiandomenico, Email: [***]

Copy to (which will not serve as notice):

Golenbock Eiseman Assor Bell & Peskoe LLP
711 Third Avenue, 17th Floor
New York City, New York 10017
Attention: Andrew D. Hudders, Email: [***]

SCHEDULE I

Schedule of Underwriters

Underwriters	Closing Shares	Closing Purchase Price
Public Ventures, LLC	5,882,353	\$ 9,075,000.09
Total	5,882,353	\$ 9,075,000.09

THIS WARRANT AND THE SECURITIES ISSUABLE UPON EXERCISE HEREOF HAVE NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933, AS AMENDED (THE "SECURITIES ACT"), OR ANY OTHER SECURITIES LAWS AND MAY NOT BE OFFERED FOR SALE, SOLD, TRANSFERRED, PLEDGED OR HYPOTHECATED IN THE ABSENCE OF (1) AN EFFECTIVE REGISTRATION STATEMENT COVERING SUCH SECURITIES UNDER THE SECURITIES ACT AND ANY OTHER APPLICABLE SECURITIES LAWS, OR (2) AN OPINION OF COUNSEL REASONABLY SATISFACTORY TO THE COMPANY THAT SUCH REGISTRATION IS NOT REQUIRED.

IN ADDITION, THIS WARRANT AND THE SECURITIES ISSUABLE UPON EXERCISE HEREOF MAY NOT BE SOLD, TRANSFERRED, ASSIGNED, PLEDGED, OR HYPOTHECATED, OR BE THE SUBJECT OF ANY HEDGING, SHORT SALE, DERIVATIVE, PUT, OR CALL TRANSACTION THAT WOULD RESULT IN THE EFFECTIVE ECONOMIC DISPOSITION OF SUCH SECURITIES BY ANY PERSON FOR A PERIOD OF THREE HUNDRED SIXTY (360) DAYS IMMEDIATELY FOLLOWING THE DATE OF THE PUBLIC OFFERING OF THE COMPANY'S SECURITIES PURSUANT TO REGISTRATION STATEMENT NO.: 333-269520 AS FILED WITH THE SECURITIES AND EXCHANGE COMMISSION, EXCEPT IN ACCORDANCE WITH FINRA RULE 5110(G)(2).

HEARTBEAM, INC.

UNDERWRITER WARRANT

588,235 shares of Common Stock

February 14, 2025

This UNDERWRITER WARRANT (this "Warrant") of HeartBeam, Inc., a corporation duly organized and validly existing under the laws of the State of Delaware (the "Company"), is being issued pursuant to that certain Underwriting Agreement, dated February 12, 2025 (the "Agreement"), between the Company and Public Ventures, LLC d/b/a MDB Capital relating to a firm commitment public offering (the "Offering") of securities of the Company pursuant to the Agreement.

FOR VALUE RECEIVED, the Company hereby grants to Public Ventures, LLC d/b/a MDB Capital and its permitted successors and assigns (collectively, the "Holder") the right to purchase from the Company up to 588,235 shares (such shares underlying this Warrant, the "Warrant Shares") of common stock, \$0.0001 par value, of the Company (the "Common Stock"), at a per share purchase price equal to \$2.125 (the "Exercise Price"), subject to the terms, conditions and adjustments set forth below in this Warrant.

1. Date of Warrant Exercise. This Warrant shall become exercisable three hundred sixty (360) days after the Base Date (the "Exercise Date"). As used in this Warrant, the term "Base Date" shall mean February 14, 2025. Except as permitted by applicable rules of the Financial Industry Regulatory Authority, Inc. ("FINRA"), this Warrant and the underlying Warrant Shares shall not be sold, transferred, assigned, pledged, or hypothecated, or be the subject of any hedging, short sale, derivative, put, or call transaction that would result in the effective economic disposition of the securities by any person prior to the date that is three hundred sixty (360) days immediately following the Base Date pursuant to FINRA Rule 5110(e)(1), except as permitted under FINRA Rule 5110(e)(2).

2. Expiration of Warrant. This Warrant shall expire on the five (5) year anniversary of the Base Date (the "Expiration Date").

3. Exercise of Warrant. This Warrant shall be exercisable pursuant to the terms of this Section 3.

3.1 Manner of Exercise.

(a) This Warrant may only be exercised by the Holder hereof on or after the Exercise Date and on or prior to the Expiration Date, in accordance with the terms and conditions hereof, in whole or in part (but not as to fractional shares) with respect to any portion of this Warrant, during the Company's normal business hours on any day other than a Saturday or a Sunday or a day on which commercial banking institutions in New York, New York are authorized by law to be closed (a "Business Day"), by surrender of this Warrant to the Company at its office maintained pursuant to Section 10.2(a) hereof, accompanied by a written exercise notice in the form attached as Exhibit A to this Warrant duly executed by the Holder, together with the payment of the aggregate Exercise Price for the number of Warrant Shares purchased upon exercise of this Warrant. Upon surrender of this Warrant, the Company shall cancel this Warrant document and shall, in the event of partial exercise, replace it with a new Warrant document in accordance with Section 3.3.

(b) Except as provided for in Section 3.1(c) below, each exercise of this Warrant must be accompanied by payment in full of the aggregate Exercise Price in cash by check or wire transfer in immediately available funds for the number of Warrant Shares being purchased by the Holder upon such exercise.

(c) The aggregate Exercise Price for the number of Warrant Shares being purchased may also, in the sole discretion of the Holder, be paid in full or in part on a "cashless basis" at the election of the Holder in the form of Warrant Shares withheld by the Company from the Warrant Shares otherwise to be received upon exercise of this Warrant having an aggregate Fair Market Value on the date of exercise equal to the aggregate Exercise Price of the Warrant Shares being purchased on a "cashless" basis by the Holder.

For purposes of this Warrant, the term "Fair Market Value" means with respect to a particular date, the average closing price of the Common Stock for the five (5) Trading Days immediately preceding the applicable exercise herein as officially reported by the principal securities exchange on which the Common Stock is then listed or admitted to trading, or, if the Common Stock is not listed or admitted to trading on any securities exchange as determined in good faith by resolution of the Board of Directors of the Company, based on the best information available to it. For purposes of this Warrant, (i) the term "Trading Day" means a day on which the Common Stock is traded on a Trading Market, and (ii) the term "Trading Market" means any of the following markets or exchanges on which the Common Stock is listed or quoted for trading on the date in question: the NYSE American, the Nasdaq Capital Market, the Nasdaq Global Market, the Nasdaq Global Select Market, the New York Stock Exchange, OTCQB or OTCQX (or any successors to any of the foregoing).

To illustrate a cashless exercise of this Warrant under Section 3.1(c) (or for a portion thereof for which cashless exercise treatment is requested), the calculation of such exercise shall be as follows:

$$X = Y (A-B)/A$$

where:

X = the number of Warrant Shares to be issued to the Holder (rounded to the nearest whole share).

Y = the number of Warrant Shares with respect to which this Warrant is being exercised.

A = the Fair Market Value of the Common Stock.

B = the Exercise Price.

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(d) For purposes of Rule 144 and sub-section (d)(3)(ii) thereof, it is intended, understood, and acknowledged that the Common Stock issuable upon exercise of this Warrant in a cashless exercise transaction as described in Section 3.1(c) above shall be deemed to have been acquired at the time this Warrant was issued. Moreover, it is intended, understood, and acknowledged that the holding period for the Common Stock issuable upon exercise of this Warrant in a cashless exercise transaction as described in Section 3.1(c) above shall be deemed to have commenced on the date this Warrant was issued.

3.2 When Exercise Effective. Each exercise of this Warrant shall be deemed to have been effected immediately prior to the close of business on the Business Day on which this Warrant shall have been duly surrendered to the Company, and, at such time, the Holder in whose name any certificate or certificates for Warrant Shares shall be issuable upon exercise as provided in Section 3.3 hereof shall be deemed to have become the holder or holders of record thereof of the number of Warrant Shares purchased upon exercise of this Warrant.

3.3 Delivery of Common Stock Certificates and New Warrant. As soon as reasonably practicable after each exercise of this Warrant, in whole or in part, and in any event within three (3) Business Days thereafter, the Company, at its expense (including the payment by it of any applicable issue taxes), will cause to be issued in the name of and delivered to the Holder hereof or, subject to Sections 9 and 10 hereof, as the Holder (upon payment by the Holder of any applicable transfer taxes) may direct:

(a) a book-entry statement (with appropriate restrictive legends, as applicable) for the number of duly authorized, validly issued, fully paid and non-assessable Warrant Shares to which the Holder shall be entitled upon exercise; and

(b) in case exercise is in part only, a new Warrant document of like tenor, dated the date hereof, for the remaining number of Warrant Shares issuable upon exercise of this Warrant after giving effect to the partial exercise of this Warrant (including the delivery of any Warrant Shares as payment of the Exercise Price for such partial exercise of this Warrant).

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3.4 Beneficial Ownership Limitation. The Company shall not effect any exercise of this Warrant, and the Holder shall not have the right to exercise any portion of this Warrant, pursuant to Section 3 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 (as such term is defined in Rule 405 promulgated under the Securities Act), 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 such 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, non-exercised portion of such Warrant beneficially owned by the Holder or any of its Affiliates or Attribution Parties and (ii) exercise or conversion of the unexercised or non-converted portion of any other securities of the Company (including, without limitation, any other securities of the Company which would entitle the holder thereof to acquire at any time shares of 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, shares of Common Stock ("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 3.4, beneficial ownership shall be calculated in accordance with Section 13(d) of the Securities Exchange Act of 1934, as amended (the "Exchange Act"), and the rules and regulations promulgated thereunder, it being acknowledged by 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 3.4 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 3.4, in determining the number of outstanding shares of Common Stock, the 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 Securities and Exchange Commission (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 the Holder, the Company shall within two (2) Trading Days confirm orally and in writing to the Holder the number of shares of Common Stock then outstanding. In any case, the number of outstanding shares of Common Stock shall be determined after giving effect to the conversion or exercise of securities of the Company, including such 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% 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 3.4, 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 3.4 shall continue to apply. Any increase in the Beneficial Ownership Limitation will not be effective until the 61st 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 3.4 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.

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4. Certain Adjustments. For so long as this Warrant is outstanding:

4.1 Mergers or Consolidations. If at any time after the date hereof there shall be a capital reorganization (other than a combination or subdivision of Common Stock otherwise provided for herein) resulting in a reclassification to or change in the terms of securities issuable upon exercise of this Warrant (a "Reorganization"), or a merger or consolidation of the Company with another corporation, association, partnership, organization, business, individual, government or political subdivision thereof or a governmental agency (a "Person" or the "Persons") (other than (i) a merger with another Person which does not result in any reclassification or change in the terms of securities issuable upon exercise of this Warrant or (ii) a merger effected exclusively for the purpose of changing the name or domicile of the Company) (a "Merger"), then, as a part of

such Reorganization or Merger, lawful provision and adjustment shall be made so that the Holder shall thereafter be entitled to receive, upon exercise of this Warrant, the number of shares of stock or any other equity or debt securities or property receivable upon such Reorganization or Merger by a holder of the number of shares of Common Stock which might have been purchased upon exercise of this Warrant immediately prior to such Reorganization or Merger. In any such case, appropriate adjustment shall be made in the application of the provisions of this Warrant with respect to the rights and interests of the Holder after the Reorganization or Merger to the end that the provisions of this Warrant (including adjustment of the Exercise Price then in effect and the number of Warrant Shares) shall be applicable after that event, as near as reasonably may be, in relation to any shares of stock, securities, property or other assets thereafter deliverable upon exercise of this Warrant. The provisions of this Section 4.1 shall similarly apply to successive Reorganizations and/or Mergers.

4.2 Splits and Subdivisions; Dividends. 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 or the Public Warrants (as defined in the Agreement)), (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 4.2 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.

5. No Impairment. The Company will not, by amendment of its certificate of incorporation or by-laws or through any consolidation, merger, reorganization, transfer of assets, 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 of the terms and in the taking of all actions necessary or appropriate in order to protect the rights of the Holder against impairment.

6. Notice as to Adjustments. With respect to each adjustment pursuant to Section 4 of this Warrant, the Company, at its expense, will promptly compute the adjustment or re-adjustment in accordance with the terms of this Warrant and furnish the Holder with a certificate certified and confirmed by the Secretary or Chief Financial Officer of the Company setting forth, in reasonable detail, the event requiring the adjustment or re-adjustment and the amount of such adjustment or re-adjustment, the method of calculation thereof and the facts upon which the adjustment or re-adjustment is based, and the Exercise Price and the number of Warrant Shares or other securities purchasable hereunder after giving effect to such adjustment or re-adjustment, which report shall be mailed by first class mail, postage prepaid, or emailed to the Holder.

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7. Reservation of Shares. The Company shall, solely for the purpose of effecting the exercise of this Warrant, at all times during the term of this Warrant, reserve and keep available out of its authorized shares of Common Stock, free from all taxes, liens and charges with respect to the issue thereof and not subject to preemptive rights of shareholders of the Company, such number of its shares of Common Stock as shall from time to time be sufficient to effect in full the exercise of this Warrant. If at any time the number of authorized but unissued shares of Common Stock shall not be sufficient to effect in full the exercise of this Warrant, in addition to such other remedies as shall be available to Holder, the Company will promptly take such corporate action as may, in the opinion of its counsel, be necessary to increase the number of authorized but unissued shares of Common Stock to such number of shares as shall be sufficient for such purposes, including without limitation, using its Reasonable Commercial Efforts (as defined below) to obtain the requisite shareholder approval necessary to increase the number of authorized shares of Common Stock. The Company hereby represents and warrants that all shares of Common Stock issuable upon proper exercise of this Warrant shall be duly authorized and, when issued and paid for upon proper exercise, shall be validly issued, fully paid and nonassessable.

8. Registration and Listing.

8.1 Definition of Registrable Securities; Majority. As used herein, the term “**Registrable Securities**” means any shares of Common Stock issuable upon the exercise of this Warrant until the date (if any) on which such shares shall have been transferred or exchanged and new certificates for them not bearing a legend restricting further transfer shall have been delivered by the Company and subsequent disposition of the shares shall not require registration or qualification under the Securities Act or any similar state law then in force. For purposes of this Warrant, the term “**Majority Holders**” shall mean in excess of fifty percent (50%) of the then outstanding Warrant Shares.

8.2 Demand Registration Rights.

(a) To the extent the Company does not maintain an effective registration statement for the Warrant Shares, for a period of five (5) years from the Base Date, the Holder shall be entitled to, upon written demand, one (1) (“**Demand Notice**”) of the Majority Holders, agrees to register on one occasion all of the Registrable Securities (a “**Demand Right**”). On such occasion, the Company will file a registration statement or a post-effective amendment to the registration statement covering the Registrable Securities within forty-five (45) days after receipt of a Demand Notice and use its Reasonable Commercial Efforts to have such registration statement or post-effective amendment declared effective as soon as possible thereafter; provided, however, that the Company shall not be required to comply with a Demand Notice if the Company has filed a registration statement with respect to which the Holder is entitled to piggyback registration rights pursuant to Section 8.3 hereof and either: (i) the Holder has elected to participate in the offering covered by such registration statement or (ii) if such registration statement relates to an underwritten primary offering of securities of the Company, until the offering covered by such registration statement has been withdrawn or until thirty (30) days after such offering is consummated. The demand for registration may be made at any time during a period commencing 180 days after the Base Date and ending on the fifth year of the Base Date. The Company covenants and agrees to give written notice of its receipt of any Demand Notice to all other registered Holders of the Warrants and/or the Registrable Securities within ten days from the date of the receipt of any such Demand Notice.

(b) The fees and expenses attendant to registering the Registrable Securities pursuant to Section 8.2(a) shall be borne as set forth in Section 8.6. For the avoidance of doubt, the holders of Registrable Securities shall pay any and all underwriting commissions and the expenses of any legal counsel selected by them to represent them in connection with the sale of the Registrable Securities, except as set forth in Section 8.6. The Company agrees to use its Reasonable Commercial Efforts to qualify or register the Registrable Securities in such states as are reasonably requested by the Majority Holder(s); provided, however, that in no event shall the Company be required to register the Registrable Securities in a state in which such registration would cause (i) the Company to be obligated to register, license or qualify to do business in such state, submit to general service of process in such state or would subject the Company to taxation as a foreign corporation doing business in such jurisdiction or (ii) the principal stockholders of the Company to be obligated to escrow their shares of capital stock of the Company. The Company shall keep any registration statement or post-effective amendment filed pursuant to the Demand Right granted under Section 8.2(a) to remain effective for a period of nine consecutive months from the effective date of such registration statement or post-effective amendment. The Holders shall only use the prospectuses provided by the Company to sell the Registrable Securities covered by such registration statement, and will immediately cease to use any prospectus furnished by the Company if the Company advises the Holder that such prospectus may no longer be used due to a material misstatement or omission. Notwithstanding the provisions of this Section 8.2(b), the Holder shall be entitled to a demand registration under this Section on only one (1) occasion and such demand registration right shall terminate in accordance with Section 8.2(a) and FINRA Rule 5110(g)(8)(C).

8.3 Incidental Registration Rights.

(a) If during the period of five (5) years after the Base Date, the Company proposes to register any of its securities under the Securities Act (other than in connection with a transaction contemplated by Rule 145(a) promulgated under the Securities Act or pursuant to registration on Form S-4 or S-8 or any successor forms) whether for its own account or for the account of any holder or holders of its shares other than Registrable Securities (any shares of such holder or holders (but not those of the Company and not Registrable Securities) with respect to any registration are referred to herein as, “**Other Shares**”), the Company shall at each such time give prompt (but not less than thirty (30) days prior to the anticipated effectiveness thereof) written notice to the holders of Registrable Securities of its intention to do so. The holders of Registrable Securities shall exercise the “piggy-back” rights provided herein by giving written notice within ten (10) days after the receipt of any such notice (which request shall specify the Registrable Securities intended to be disposed of by such holder). Except as set forth in Section 8.3(b), the Company will use its Reasonable Commercial Efforts to effect the registration under the Securities Act of all of the Registrable Securities which the Company has been so requested to register by such holder, to the extent required to permit the disposition of the Registrable Securities so to be registered, by inclusion of such Registrable Securities in the registration statement which covers the securities which the Company proposes to register. In connection with such registration, Company will file a registration statement with the Commission on Form S-3 or other appropriate form if necessary to comply with General Instruction I.B.6. of Form S-3 and Commission interpretations thereof. The Company will pay all Registration Expenses in connection with each registration of Registrable Securities pursuant to this Section 8.3, but the holders of Registrable Securities shall pay any and all underwriting commissions and the expenses of any legal counsel selected by them to represent them in connection with the sale of the Registrable Securities, except as set forth in Section 8.6.

(b) If the Company at any time proposes to register any of its securities under the Securities Act as contemplated by this Section 8.3 and such securities are to be distributed by or through one or more underwriters or a registered broker dealer, the Company will, if requested by a holder of Registrable Securities, use its Reasonable Commercial Efforts to arrange for such underwriters or registered broker dealer to include all the Registrable Securities to be offered and sold by such holder among the securities to be distributed by such underwriters or registered broker dealer, provided that if the managing underwriter or registered broker dealer of such offering shall inform the Company its belief (including as statement of the basis of that belief and the approximate number of Registrable Securities to be removed and the number of any other shares included in the offering by persons other than the Company and whether or not they are being cut back and by what amount, and the shares to be offered by the Company) that inclusion in such registration statement and/or distribution of all or a specified number of such securities proposed to be distributed by such underwriters or registered broker dealer would interfere with the successful marketing of the securities being distributed by such underwriters or registered broker dealer, then the Company may, upon written notice to the holders of the Registrable Securities, reduce pro rata in accordance with the number of shares of Common Stock desired to be included in such registration statement and/or distribution (if and to the extent stated by such managing underwriter or registered broker dealer to be necessary to eliminate such effect) the number of such Registrable Securities the registration and/or distribution of which shall have been requested by each holder thereof.

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8.4 Registration Procedures. Whenever the holders of Registrable Securities have properly requested that any Registrable Securities be registered pursuant to the terms of this Warrant, the Company shall use its Reasonable Commercial Efforts to effect the registration for the resale of such Registrable Securities in accordance with the intended method of disposition thereof, and pursuant thereto the Company shall, as expeditiously as possible,:

(a) prepare and file with the SEC a registration statement with respect to such Registrable Securities and use its Reasonable Commercial Efforts to cause such registration statement to become effective;

(b) notify such holders of the effectiveness of each registration statement filed hereunder and prepare and file with the SEC such amendments and supplements to such registration statement and the prospectus used in connection therewith as may be necessary to (i) keep such registration statement effective and the prospectus included therein usable for a period commencing on the date that such registration statement is initially declared effective by the SEC and ending on the earlier of (A) the date when all Registrable Securities covered by such registration statement have been sold pursuant to the registration statement or cease to be Registrable Securities, or (B) nine months from the effective date of the registration statement; and (ii) comply with the provisions of the Securities Act with respect to the disposition of all securities covered by such registration statement during such period in accordance with the intended methods of disposition by the sellers thereof set forth in such registration statement;

(c) [RESERVED];

(d) use its Reasonable Commercial Efforts to register or qualify such Registrable Securities under such other securities or blue sky laws of such jurisdictions as such holders reasonably request and do any and all other acts and things which may be reasonably necessary to enable such holders to consummate the disposition in such jurisdictions of the Registrable Securities owned by such holders; provided, however, that the Company shall not be required to: (i) qualify generally to do business in any jurisdiction where it would not otherwise be required to qualify but for this subparagraph; (ii) subject itself to taxation in any such jurisdiction; or (iii) consent to general service of process in any such jurisdiction;

(e) notify such holders, at any time when a prospectus relating thereto is required to be delivered under the Securities Act, of the happening of any event as a result of which the prospectus included in such registration statement contains an untrue statement of a material fact or omits any material fact necessary to make the statements therein, in light of the circumstances in which they are made, not materially misleading, and, at the reasonable request of such holders, the Company shall prepare a supplement or amendment to such prospectus so that, as thereafter delivered to the purchasers of such Registrable Securities, such prospectus shall not contain an untrue statement of a material fact or omit to state any material fact necessary to make the statements therein, in light of the circumstances in which they are made, not materially misleading;

(f) provide a transfer agent and registrar for all such Registrable Securities not later than the effective date of such registration statement;

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(g) make available for inspection by any underwriter participating in any disposition pursuant to such registration statement, and any attorney, accountant or other agent retained by any such underwriter, all financial and other records, pertinent corporate documents and properties of the Company, and cause the Company's officers, directors, managers, employees and independent accountants to supply all information reasonably requested by any such underwriter, attorney, accountant or agent in connection with such registration statement;

(h) otherwise comply with all applicable rules and regulations of the SEC, and make available to its security holders, as soon as reasonably practicable, an earnings statement of the Company, which earnings statement shall satisfy the provisions of Section 11(a) of the Securities Act and, at the option of the Company, Rule 158 thereunder;

(i) in the event of the issuance of any stop order suspending the effectiveness of a registration statement, or of any order suspending or preventing the use of any related prospectus or suspending the qualification of any Registrable Securities included in such registration statement for sale in any jurisdiction, the Company shall use its Reasonable Commercial Efforts promptly to obtain the withdrawal of such order; and

(j) if the offering is underwritten, use its Reasonable Commercial Efforts to furnish on the date that Registrable Securities are delivered to the underwriters for sale pursuant to such registration, an opinion dated such date of counsel representing the Company for the purposes of such registration, addressed to the underwriters covering such issues as are customarily addressed in opinions to underwriters in public offerings and reasonably required by such underwriters.

8.5 Listing. The Company shall secure the listing of the Common Stock underlying this Warrant upon each national securities exchange or automated quotation system upon which shares of Common Stock are then listed or quoted (subject to official notice of issuance) and shall maintain such listing of shares of Common Stock. The Company shall at all times comply in all material respects with the Company's reporting, filing and other obligations under the by-laws or rules of the Nasdaq Capital Market (or such other national securities exchange or market on which the Common Stock may then be listed, as applicable).

8.6 Expenses. The Company shall pay all Registration Expenses relating to the registration and listing obligations set forth in this Section 8. For purposes of this Warrant, the term "**Registration Expenses**" means: (a) all registration, filing and FINRA fees, (b) all reasonable fees and expenses of complying with securities or blue sky laws, (c) all word processing, duplicating and printing expenses, (d) the fees and disbursements of counsel for the Company and of its independent public accountants, including the expenses of any special audits or "cold comfort" letters required by or incident to such performance and compliance, and (e) fees and disbursements of one counsel for the selling holders of Registrable Securities up to \$5,000. Registration Expenses shall not include any underwriting discounts and commissions which may be incurred in the sale of any Registrable Securities and transfer taxes of the selling holders of Registrable Securities.

8.7 Information Provided by Holders. Any holder of Registrable Securities included in any registration shall furnish to the Company such information as the Company may reasonably request in writing, including, but not limited to, a completed and executed questionnaire requesting information customarily sought of selling security holders, to enable the Company to comply with the provisions hereof in connection with any registration referred to in this Warrant. The Holder agrees to suspend all sales of Registrable Securities pursuant to a registration statement filed under Section 8.3 in the event the Company notifies Holder pursuant to Section 8.4(e) that the prospectus relating thereto is no longer current and will not resume sales under such registration statement until advised by the Company that the prospectus has been appropriately supplemented or amended.

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8.8 Net Cash Settlement. Notwithstanding anything herein to the contrary, in no event will the Holder hereof be entitled to receive a net-cash settlement as liquidated damages in lieu of physical settlement in shares of Common Stock, regardless of whether the Common Stock underlying this Warrant is registered pursuant to an effective registration statement; provided, however, that the foregoing will not preclude the Holder from seeking other remedies at law or equity for breaches by the Company of its registration obligations hereunder.

9. Restrictions on Transfer.

9.1 Restrictive Legends. This Warrant and each Warrant issued upon transfer or in substitution for this Warrant pursuant to Section 10 hereof, each certificate for Common Stock issued upon the exercise of this Warrant and each Warrant issued upon transfer or in substitution for this Warrant pursuant to Section 10 hereof and each certificate issued upon the transfer of any such Common Stock shall be transferable only upon satisfaction of the conditions specified in this Section 9. Each of the foregoing securities shall be stamped or otherwise imprinted with a legend reflecting the restrictions on transfer set forth herein and any restrictions required under the Securities Act or other applicable securities laws.

9.2 Notice of Proposed Transfer. Prior to any transfer of any securities which are not registered under an effective registration statement under the Securities Act ("**Restricted Securities**"), which transfer may only occur if there is an exemption from the registration provisions of the Securities Act and all other applicable securities laws, the Holder will give written notice to the Company of the Holder's intention to effect a transfer (and shall describe the manner and circumstances of the proposed transfer). The following provisions shall apply to any proposed transfer of Restricted Securities:

(i) If in the opinion of counsel for the Holder reasonably satisfactory to the Company the proposed transfer may be effected without registration of the Restricted Securities under the Securities Act (which opinion shall state in detail the basis of the legal conclusions reached therein), the Holder shall thereupon be entitled to transfer the Restricted Securities in accordance with the terms of the notice delivered by the Holder to the Company. Each certificate representing the Restricted Securities issued upon or in connection with any transfer shall bear the restrictive legends required by Section 9.1 hereof.

(ii) If the opinion called for in clause (i) above is not delivered, the Holder shall not be entitled to transfer the Restricted Securities until either: (x) receipt by the Company of a further notice from such Holder pursuant to the foregoing provisions of this Section 9.2 and fulfillment of the provisions of clause (i) above, or (y) such Restricted Securities have been effectively registered under the Securities Act.

9.3 Certain Other Transfer Restrictions. Notwithstanding any other provision of this Warrant: (a) prior to the Exercise Date, this Warrant or the Restricted Securities thereunder may only be transferred or assigned to the persons permitted under FINRA Rule 5110(g), and (b) subject at all times to FINRA Rule 5110(g), no opinion of counsel shall be necessary for a transfer of Restricted Securities by the holder thereof to any Person employed by or owning equity in the Holder, if the transferee agrees in writing to be subject to the terms hereof to the same extent as if the transferee were the original purchaser hereof and such transfer is permitted under applicable securities laws.

9.4 Termination of Restrictions. Except as set forth in Section 9.3 hereof and subject at all times to FINRA Rule 5110(g), the restrictions imposed by this Section 9 upon the transferability of Restricted Securities shall cease and terminate as to any particular Restricted Securities: (a) which shall have been effectively registered under the Securities Act, or (b) when, in the opinion of counsel for the Company, such restrictions are no longer required in order to insure compliance with the Securities Act or Section 10 hereof. Whenever such restrictions shall cease and terminate as to any Restricted Securities, the Holder thereof shall be entitled to receive from the Company, without expense (other than applicable transfer taxes, if any), new securities of like tenor not bearing the applicable legends required by Section 9.1 hereof.

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10. Ownership, Transfer, Sale and Substitution of Warrant

10.1 Ownership of Warrant. The Company may treat any Person in whose name this Warrant is registered in the Warrant Register (as defined below) maintained pursuant to Section 10.2(b) hereof as the owner and holder thereof for all purposes, notwithstanding any notice to the contrary, except that, if and when any Warrant is properly assigned in blank, the Company may (but shall not be obligated to) treat the bearer thereof as the owner of such Warrant for all purposes, notwithstanding any notice to the contrary. Subject to Sections 9 and 10 hereof, this Warrant, if properly assigned, may be exercised by a new holder without a new Warrant first having been issued.

10.2 Office; Exchange of Warrant

(a) The Company will maintain its principal office at the location identified in the prospectus relating to the Offering or at such other offices as set forth in the Company's most current filing (as of the date notice is to be given) under Exchange Act, or as the Company otherwise notifies the Holder.

(b) The Company shall cause to be kept at its office maintained pursuant to Section 10.2(a) hereof a warrant register for the registration and transfer of this Warrant (the “**Warrant Register**”). The name and address of the holder of this Warrant, the transfers thereof and the name and address of the transferee of this Warrant shall be registered in such Warrant Register. The Person in whose name this Warrant shall be so registered shall be deemed and treated as the owner and holder thereof for all purposes of this Warrant, and the Company shall not be affected by any notice or knowledge to the contrary.

(c) Upon the surrender of this Warrant, properly endorsed, for registration of transfer or for exchange at the office of the Company maintained pursuant to Section 10.2(a) hereof, the Company at its expense will (subject to compliance with Section 9 hereof, if applicable) execute and deliver to or upon the order of the Holder thereof a new Warrant of like tenor, in the name of such holder or as such holder (upon payment by such holder of any applicable transfer taxes) may direct, calling in the aggregate on the face thereof for the number of shares of Common Stock called for on the face of this Warrant so surrendered (after giving effect to any previous adjustment(s) to the number of Warrant Shares).

10.3 Replacement of Warrant. Upon receipt of evidence reasonably satisfactory to the Company of the loss, theft, destruction or mutilation of this Warrant and, in the case of any such loss, theft or destruction of this Warrant, upon delivery of indemnity reasonably satisfactory to the Company in form and amount or, in the case of any mutilation, upon surrender of this Warrant for cancellation at the office of the Company maintained pursuant to Section 10.2(a) hereof, the Company will execute and deliver, in lieu thereof, a new Warrant of like tenor and dated the date hereof.

10.4 Opinions. In connection with the sale of the Warrant Shares by Holder, if the Company’s counsel reasonably determines such opinion is appropriate, the Company agrees to cooperate with the Holder, and at the Company’s expense, to have its counsel provide any legal opinions required to remove the restrictive legends from the Warrant Shares in connection with a sale, transfer or legend removal request of Holder.

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11. Redemption. For the avoidance of doubt, the Company shall not be permitted to redeem this Warrant.

12. No Rights or Liabilities as Stockholder. No Holder shall be entitled to vote or receive dividends or distributions or be deemed the holder of any equity securities which may at any time be issuable on the exercise hereof, nor shall anything contained herein be construed to confer upon the Holder, as such, any of the rights of a stockholder of the Company or any right to vote for the election of directors or upon any matter submitted to stockholders at any meeting thereof, or to give or withhold consent to any corporate action (whether upon any recapitalization, issuance of stock, reclassification of stock, change of par value, consolidation, merger, conveyance, or otherwise) or to receive notice of meetings, or to receive dividends or distributions, or to share in the assets of the Company in the event of a liquidation, dissolution or the winding up of the Company, until this Warrant shall have been exercised and the shares of Common Stock purchasable upon the exercise hereof shall have become deliverable, as provided herein.

13. Notices. Any notice or other communication in connection with this Warrant shall be given in writing and directed to the parties hereto as follows: (a) if to the Holder, at the address of the holder in the Warrant Register, or (b) if to the Company, to the attention of its Chief Executive Officer at its office maintained pursuant to Section 10.2(a) hereof; *provided*, that the exercise of this Warrant shall also be effected in the manner provided in Section 3 hereof. Notices shall be deemed properly delivered and received when delivered to the notice party (i) if personally delivered, upon receipt or refusal to accept delivery, (ii) if sent via email, the date of transmission if sent on a Business Day prior to 5:30 p.m. (New York City time), or the next Business Day if sent on a day that is not a Business Day or at or after 5:30 p.m. (New York City time) on a Business Day, (iii) if sent by a commercial overnight courier for delivery on the next Business Day, on the first Business Day after deposit with such courier service, or (iv) if sent by registered or certified mail, five (5) Business Days after deposit thereof in the U.S. mail.

14. Payment of Taxes. The Company will pay all documentary stamp taxes attributable to the issuance of shares of Common Stock underlying this Warrant upon exercise of this Warrant; *provided, however*; that the Company shall not be required to pay any tax which may be payable in respect of any transfer involved in the transfer or registration of this Warrant or any certificate for shares of Common Stock underlying this Warrant in a name other than that of the Holder. The Holder is responsible for all other tax liability that may arise as a result of holding or transferring this Warrant or receiving shares of Common Stock underlying this Warrant upon exercise hereof.

15. Miscellaneous. This Warrant and any term hereof may be changed, waived, discharged or terminated only by an instrument in writing signed by the party against which enforcement of the change, waiver, discharge or termination is sought, or with the written consent of the Company and the holders of outstanding Underwriter Warrants (as defined in the Agreement) then exercisable for a majority of the shares of Common Stock issuable upon exercise of all outstanding Underwriter Warrants. This Warrant shall be construed and enforced in accordance with and governed by the laws of the State of New York. Each of the parties consents to the exclusive jurisdiction of the Federal or state courts whose districts encompass any part of the County of New York located in the City of New York, New York in connection with any dispute arising under this Agreement and hereby waives, to the maximum extent permitted by law, any objection, including any objection based on *forum non conveniens*, to the bringing of any such proceeding in such jurisdictions. Each party to this Agreement irrevocably consents to the service of process in any such proceeding by any manner permitted by law. The section headings in this Warrant are for purposes of convenience only and shall not constitute a part hereof. When used herein, the term “**Reasonable Commercial Efforts**” means, with respect to the applicable obligation of the Company, reasonable commercial efforts for similarly situated, publicly-traded companies. 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 Business Day, then such action may be taken or such right may be exercised on the next succeeding Business Day.

[Signature page follows]

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IN WITNESS WHEREOF, the Company has caused this Underwriter Warrant to be duly executed as of the date first above written.

HEARTBEAM, INC.

By: /s/ Robert Eno
Name: Robert Eno
Title: Chief Executive Officer

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To HEARTBEAM, INC.:

The undersigned registered holder of the within Warrant hereby irrevocably exercises the Warrant pursuant to Section 3.1 of the Warrant with respect to [] Warrant Shares, at an exercise price of \$[] per share, and requests that the certificates for such Warrant Shares be issued, subject to Sections 9 and 10, in the name of and delivered to:

The undersigned is hereby making payment for the Warrant Shares in the following manner:
[check one]

by cash in accordance with Section 3.1(b) of the Warrant

via cashless exercise in accordance with Section 3.1(c) of the Warrant in the following manner:

The undersigned hereby represents and warrants that it is, and has been since its acquisition of the Warrant, the record and beneficial owner of the Warrant.

The undersigned is an "accredited investor" as defined in Regulation D promulgated under the Securities Act of 1933, as amended.

Dated:

Print or Type Name

(Signature must conform in all respects to name of holder as specified on the face of Warrant)

(Street Address)

(City) (State) (Zip Code)

**EXHIBIT B
FORM OF ASSIGNMENT**

[To be executed only upon transfer of Warrant]

For value received, the undersigned registered holder of the within Warrant hereby sells, assigns and transfers unto _____ [include name and addresses] the rights represented by the Warrant to purchase _____ shares of Common Stock of HEARTBEAM, INC. to which the Warrant relates, and appoints _____, the undersigned's attorney to make such transfer on the books of HEARTBEAM, INC. maintained for the purpose, with full power of substitution in the premises.

Dated:

(Signature must conform in all respects to name of holder as specified on the face of Warrant)

(Street Address)

(City) (State) (Zip Code)

Signed in the presence of:

(Signature of Transferee)

(Street Address)

(City) (State) (Zip Code)

Signed in the presence of:

February 14, 2025

HeartBeam, Inc.
2118 Walsh Avenue, Suite 210
Santa Clara, CA 95050

RE: Registration Statement on Form S-3

Ladies and Gentlemen:

We have acted as counsel to HeartBeam, Inc., a Delaware corporation (the “**Company**”), in connection with the above-referenced registration statement filed with the U.S. Securities and Exchange Commission (the “**SEC**”) on February 2, 2023 and declared effective by the Commission on February 10, 2023 (File No. 333-269520) (the “**Registration Statement**”), a preliminary prospectus, dated December 23, 2024 (the “**Preliminary Prospectus Supplement**”), an Issuer Free Writing Prospectus, dated January 8, 2025 (the “**FWP**”), and a Final Prospectus Supplement, dated February 13, 2025 (the “**Final Prospectus**”, together with the Preliminary Prospectus and the FWP, the “**Prospectus**”), relating to the offering and sale by the Company of 5,882,353 shares (the “**Shares**”) of common stock of the Company, par value \$0.0001 per share (the “**Common Stock**”), having an aggregate offering price of \$10,000,000, pursuant to that certain Underwriting Agreement (the “**Underwriting Agreement**”) dated February 12, 2025, between the Company and Public Ventures, LLC dba MDB Capital. The Shares are covered by the Registration Statement, and we understand that the Shares are to be offered and sold in the manner described in the Prospectus. This opinion is being delivered at the request of the Company and in accordance with the requirements of Item 601(b)(5) of Regulation S-K promulgated by the Commission.

For purposes of this opinion, we have examined such documents and reviewed such questions of law as we have considered necessary and appropriate for the purposes of our opinion set forth below. In rendering our opinion, we have assumed the authenticity of all documents submitted to us as originals, the genuineness of all signatures and the conformity to authentic originals of all documents submitted to us as copies. We have also assumed the legal capacity for all purposes relevant hereto of all natural persons and, with respect to all parties to agreements or instruments relevant hereto other than the Company, that such parties had the requisite power and authority (corporate or otherwise) to execute, deliver and perform such agreements or instruments, that such agreements or instruments have been duly authorized by all requisite action (corporate or otherwise), executed and delivered by such parties and that such agreements or instruments are the valid, binding and enforceable obligations of such parties. As to questions of fact material to our opinions, we have relied upon certificates of officers of the Company and of public officials.

Based upon and subject to the foregoing, we are of the opinion that the Shares have been duly authorized and, when issued and sold by the Company and delivered by the Company against receipt of the purchase price therefor, in the manner contemplated by the Prospectus and the Underwriting Agreement, will be validly issued, fully paid and non-assessable.

The opinions expressed herein are limited to the laws of the General Corporation Law of the State of Delaware and the laws of the State of New York, as currently in effect, and no opinion is expressed with respect to any other laws or any effect that such other laws may have on the opinions expressed herein.

We consent to the filing of this opinion with the SEC as Exhibit 5.1 to the Company’s Current Report on Form 8-K filed on February 14, 2025, which is incorporated by reference in the Prospectus. We also consent to the reference of our firm under the caption “Legal Matters” in the Prospectus and in each case in any amendment or supplement thereto. In giving this consent, we do not thereby admit that we are in the category of persons whose consent is required under Section 7 and Section 11 of the Securities Act of 1933, as amended, or the rules and regulations of the SEC promulgated thereunder.

Very truly yours,

Lucasky Brookman LLP

February 13, 2025

**HeartBeam Announces Pricing of \$10.0 Million Underwritten Public Offering of Common Stock**

- *HeartBeam system was recently cleared by the U.S. Food and Drug Administration (FDA) for comprehensive arrhythmia assessment*
- *510(k) application submitted to the FDA for the Company's groundbreaking 12-lead electrocardiogram (ECG) synthesis software*
- *Funding is part of the Company's strategic plan focusing on key growth milestones and preparation for U.S. commercialization*

SANTA CLARA, Calif.--(BUSINESS WIRE)-- **HeartBeam, Inc.** (NASDAQ: BEAT), a medical technology company focused on transforming cardiac care by providing powerful personalized insights, today announced that it has priced its public offering of 5,882,353 shares of HeartBeam's common stock at \$1.70 per share. HeartBeam expects to close the offering, subject to market and other conditions, on or about February 14, 2025.

HeartBeam expects gross proceeds of \$10.0 million from the offering, before deducting the underwriting discount and commissions and offering expenses.

MDB Capital is acting as the underwriter for the offering and Paulson Investment Company LLC participated as a selected dealer.

The funding supports the Company's strategic plan, focusing on key growth milestones and preparation for U.S. commercialization. The Company intends to use the net proceeds from the offering for commercial-readiness activities; investments into key R&D, clinical, and regulatory projects; working capital; and other general corporate purposes.

Additionally, HeartBeam has granted the underwriter a 45-day option to purchase up to 882,353 additional shares of common stock to cover over-allotments.

The offering will be made only by means of a written prospectus and prospectus supplement that form a part of the registration statement. A preliminary prospectus supplement and accompanying prospectus relating to the offering has been filed with the SEC and is available on the SEC's website at www.sec.gov. A copy of the final prospectus supplement and accompanying prospectus, when available, may be obtained by contacting: MDB Capital, 14135 Midway Road, G-150, Addison, Texas 75001, by telephone at (945) 262- 9010 or by email at community@mdb.com.

This press release does not constitute an offer to sell, or the solicitation of an offer to buy, the shares of common stock, nor will there be any sale of the shares of common stock in any state or other jurisdiction in which such offer, solicitation or sale is not permitted.

About HeartBeam, Inc.

HeartBeam, Inc. (NASDAQ: BEAT) is a medical technology company dedicated to transforming the detection and monitoring of critical cardiac conditions. The Company is creating the first ever cable-free synthesized 12-lead ECG capable of capturing the heart's electrical signals from three distinct directions. This platform technology is designed for portable devices that can be used wherever the patient is to deliver actionable heart intelligence. Physicians will be able to identify cardiac health trends and acute conditions and direct patients to the appropriate care – all outside of a medical facility, thus redefining the future of cardiac health management. The Company holds 13 US and 4 international issued patents related to technology enablement. For additional information, visit HeartBeam.com.

Forward-Looking Statements

All statements in this release that are not based on historical fact are "forward-looking statements." While management has based any forward-looking statements included in this release on its current expectations, the information on which such expectations were based may change. Forward-looking statements involve inherent risks and uncertainties which could cause actual results to differ materially from those in the forward-looking statements, as a result of various factors including those risks and uncertainties described in the Risk Factors and in Management's Discussion and Analysis of Financial Condition and Results of Operations sections of our Forms 10-K, 10-Q and other reports filed with the SEC and available at www.sec.gov. We urge you to consider those risks and uncertainties in evaluating our forward-looking statements. We caution readers not to place undue reliance upon any such forward-looking statements, which speak only as of the date made. Except as otherwise required by the federal securities laws, we disclaim any obligation or undertaking to publicly release any updates or revisions to any forward-looking statement contained herein (or elsewhere) to reflect any change in our expectations with regard thereto or any change in events, conditions or circumstances on which any such statement is based.

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