

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

**FORM 8-K**

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

Date of report (Date of earliest event reported): **October 6, 2022**

**Avenue Therapeutics, Inc.**

(Exact Name of Registrant as Specified in Charter)

**Delaware**  
(State or Other Jurisdiction  
of Incorporation)

**001-38114**  
(Commission File Number)

**47-4113275**  
(IRS Employer Identification No.)

**2 Gansevoort Street, 9th Floor**  
**New York, New York 10014**  
(Address of Principal Executive Offices)

**(781) 652-4500**  
(Registrant's telephone number, including area code)

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

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

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

Title of Class	Trading Symbol(s)	Exchange Name
Common Stock	ATXI	Nasdaq Capital Market

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

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.**

***Underwriting Agreement; Warrant Agent Agreement***

On October 6, 2022, Avenue Therapeutics, Inc. (the “**Company**”) entered into an Underwriting Agreement (the “**Underwriting Agreement**”) with Aegis Capital Corp., as underwriter (the “**Underwriter**”), related to the Company’s underwritten public offering (the “**Offering**”) of 2,652,065 units (“**Units**”) and 984,300 pre-funded units (“**Pre-funded Units**”). Each Unit consisted of one share (a “**Share**”) of the Company’s common stock, par value \$0.0001 per share (“**Common Stock**”), and one warrant to purchase one share of Common Stock (each, a “**Warrant**” and, collectively, the “**Warrants**”), and each Pre-funded Unit consisted of one pre-funded warrant to purchase one share of Common Stock (each, a “**Pre-funded Warrant**” and collectively, the “**Pre-funded Warrants**”) and one Warrant. The Units were sold at a price of \$3.30 per Unit, and the Pre-Funded Units were sold at a price of \$3.2999 (\$3.30 less \$0.0001, the exercise price of the Pre-funded Warrants).

The Warrants are immediately exercisable upon issuance and are exercisable for a period of five years after the issuance date. The Shares, the Pre-funded Warrants and the Warrants were immediately separable upon issuance and were issued separately. The Underwriter was granted a 45-day option to purchase up to an aggregate of (i) 545,454 additional Shares and/or Pre-funded Units, representing 15% of the Shares and Pre-funded Warrants sold in the Offering, and/or (ii) Warrants to purchase 545,454 additional Shares, representing 15% of the Warrants sold in the Offering, which it initially exercised, in part, electing to purchase 545,454 Warrants at a purchase price of \$0.01 per Warrant. The Company consummated the transactions contemplated by the Offering and the Underwriting Agreement on October 11, 2022. Prior to the closing date of the Offering, investors in certain of the Pre-funded Warrants, pursuant to the terms thereof, elected to exercise 949,900 Pre-funded Warrants. Accordingly, at the closing, the Company issued 949,900 fewer Pre-funded Warrants and, in lieu thereof, the corresponding 949,900 shares of Common Stock.

The Company estimates the net proceeds from the Offering to be \$10.4 million, after deducting underwriting discounts and commissions and estimated offering expenses payable by the Company.

In connection with the Offering, the Company entered into the following agreements, forms of which were previously filed as exhibits to the Company's Registration Statement on Form S-1 (File No. 333-267206) initially filed with the U.S. Securities and Exchange Commission (the "SEC") on August 31, 2022, as amended (the "Registration Statement"):

- the Underwriting Agreement, a copy of which is attached as Exhibit 1.1 hereto and incorporated in this Item 1.01 by reference;
- the Warrant, a copy of which form of Warrant is attached as Exhibit 4.1 hereto and incorporated in this Item 1.01 by reference;
- the Pre-funded Warrant, a copy of which form of Pre-funded Warrant is attached as Exhibit 4.2 hereto and incorporated in this Item 1.01 by reference; and
- a Warrant Agent Agreement, dated October 6, 2022, by and among the Company and VStock Transfer, LLC, a copy of which is attached as Exhibit 4.3 hereto and incorporated in this Item 1.01 by reference.

#### Item 8.01 Other Events.

##### *Nasdaq Compliance*

As previously disclosed, the Company had been notified by the Staff of the Listing Qualifications Department (the "Staff") of The Nasdaq Stock Market LLC ("Nasdaq") that it was not in compliance with Nasdaq Listing Rule 5550(b)(1), which requires a company to maintain a minimum of \$2.5 million in stockholders' equity (the "Stockholders' Equity Requirement"), nor did it meet the alternatives of market value of listed securities or net income from continuing operations. Under a decision by a Nasdaq Hearings Panel (the "Panel"), the Company has until October 31, 2022 to demonstrate compliance with the Stockholders' Equity Requirement. As a result of the closing of the Offering, taking into account the net proceeds thereof, the Company believes that, as of the date of this Current Report on Form 8-K, it satisfies the Stockholders' Equity Requirement for continued listing on The Nasdaq Capital Market. The Company is awaiting a formal compliance determination from the Panel and will provide an update upon receipt of such determination. The Company's determination of stockholders' equity is based on estimates and information available to it as of the date of this Current Report on Form 8-K, is not a comprehensive statement of its financial results or position as of or for the quarter ended December 31, 2022, and has not been audited, reviewed or compiled by its independent registered public accounting firm. The Company's financial closing procedures for the quarter ended December 31, 2022, are not yet complete and, as a result, stockholders' equity upon completion of its closing procedures may vary from this preliminary estimate.

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Additionally, as previously disclosed, the Company had been notified by the Staff that the Company's closing bid price was below \$1.00 per share for 30 consecutive business days, and that, therefore, the Company was not in compliance with Nasdaq Listing Rule 5550(a)(2) (the "Minimum Bid Price Requirement"), which is the minimum bid price requirement for continued listing on The Nasdaq Capital Market. Under a decision by the Panel, the Company was given through October 6, 2022 to satisfy the Minimum Bid Price Requirement for at least 10 consecutive trading days. As of the close of business on October 11, 2022, the consolidated closing bid price of the Common Stock has exceeded \$1.00 per share for 13 consecutive trading days. The Company is awaiting a formal compliance determination from the Panel with respect to its compliance with the Minimum Bid Price Requirement and will provide an update upon receipt of such determination.

##### *Press Releases*

On October 6, 2022, the Company issued a press release announcing the pricing of the Offering, a copy of which is attached hereto as Exhibit 99.1. On October 11, 2022, the Company issued a press release announcing the closing of the Offering, a copy of which is attached hereto as Exhibit 99.2.

#### Forward-Looking Statements

This Current Report on Form 8-K contains predictive or "forward-looking statements" within the meaning of the Private Securities Litigation Reform Act of 1995. All statements other than statements of current or historical fact contained in this Current Report on Form 8-K, including statements that express the Company's intentions, plans, objectives, beliefs, expectations, strategies, predictions or any other statements relating to our future activities or other future events or conditions are forward-looking statements. The words "anticipate," "believe," "continue," "could," "estimate," "expect," "intend," "may," "plan," "predict," "project," "will," "should," "would" and similar expressions are intended to identify forward-looking statements. These statements are based on current expectations, estimates and projections made by management about the Company's business, industry and other conditions affecting its financial condition, results of operations or business prospects. These statements are not guarantees of future performance and involve risks, uncertainties and assumptions that are difficult to predict. Therefore, actual outcomes and results may differ materially from what is expressed or forecasted in, or implied by, the forward-looking statements due to numerous risks and uncertainties, including those risks and uncertainties described in the filings the Company makes with the SEC. Any forward-looking statements speak only as of the date on which they are made, and the Company undertakes no obligation to publicly update or revise any forward-looking statements to reflect events or circumstances that may arise after the date of this Current Report on Form 8-K, except as required by applicable law. Investors should evaluate any statements made by the Company in light of these important factors.

#### Item 9.01 Financial Statements and Exhibits.

(d) Exhibits

#### EXHIBIT INDEX

<u>Exhibit No.</u>	<u>Description</u>
<a href="#">1.1</a>	<a href="#">Underwriting Agreement, dated October 6, 2022, by and between the Company and Aegis Capital Corp.</a>
<a href="#">4.1</a>	<a href="#">Form of Warrant.</a>
<a href="#">4.2</a>	<a href="#">Form of Pre-funded Warrant.</a>
<a href="#">4.3</a>	<a href="#">Warrant Agent Agreement, dated October 6, 2022, by and between the Company and VStock Transfer, LLC.</a>
<a href="#">99.1</a>	<a href="#">Press Release, dated October 6, 2022.</a>
<a href="#">99.2</a>	<a href="#">Press Release, dated October 11, 2022</a>
104	Cover Page Interactive Data File (embedded within Inline XBRL document)

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

**AVENUE THERAPEUTICS, INC.**  
(Registrant)

Date: October 12, 2022

By: /s/ David Jin  
David Jin  
Interim Principal Financial Officer and Chief Operating Officer

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## Underwriting Agreement

October 6, 2022

Aegis Capital Corp.  
1345 Avenue of the Americas, 27th Floor  
New York, NY 10105

Ladies and Gentlemen:

Avenue Therapeutics, Inc., a Delaware corporation (the “**Company**”), agrees, subject to the terms and conditions in this agreement (this “**Agreement**”), to issue and sell to Aegis Capital Corp. (the “**Underwriter**”) an aggregate of 3,636,365 units, with each such unit consisting of either: (A) one share of common stock (the “**Firm Shares**”), \$0.0001 par value, of the Company (the “**Common Stock**”) and one warrant to purchase one share of Common Stock at an exercise price of \$3.30 (representing 100% of the per Closing Unit (as defined below) offering price) (the “**Public Offering Price**”) per share (the “**Warrant**”) (each, a “**Closing Unit**”); or (B) one pre-funded warrant (each, a “**Pre-funded Warrant**”) to purchase one share of Common Stock at an exercise price of \$0.0001 and one Warrant (each, a “**Closing Pre-funded Unit**”). The shares of Common Stock referred to in this Section are hereinafter referred to as the “**Closing Shares**”; the Warrants referred to in this Section are hereinafter referred to as the “**Closing Warrants**”; and the Pre-funded Warrants referred to in this Section are hereinafter referred to as the “**Closing Pre-funded Warrants**.” No Closing Units will be certificated, and the Closing Shares and the Closing Warrants comprising the Closing Units will be separated immediately upon issuance. No Closing Pre-funded Units will be certificated, and the Closing Pre-funded Warrants and the Closing Warrants comprising the Closing Pre-funded Units will be separated immediately upon issuance. At the option of the Underwriter, the Company agrees, subject to the terms and conditions herein, to issue and sell additional Option Securities (as defined in Section 3(b) hereof). The Closing Units and the Option Securities are herein referred to collectively as the “**Securities**”. The number of Closing Units and Option Securities to be purchased by the Underwriter is set forth opposite its name in Schedule I hereto. Aegis Capital Corp. has agreed to act as the Underwriter in connection with the offering and sale of the Securities.

## Definitions

“**Affiliate**” has the meaning set forth in Rule 405 under the Securities Act.

“**Applicable Time**” means 6:15 pm. Eastern Time on the date hereof.

“**Business Day**” means a day other than a Saturday, Sunday or any 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.

“**Bona Fide Electronic Road Show**” means a “bona fide electronic road show” (as defined in Rule 433(h)(5) under the Securities Act) that the Company has made available without restriction by “graphic means” (as defined in Rule 405 under the Securities Act) to any person.

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

“**Emerging Growth Company**” means an “emerging growth company” (as defined in Section 2(a) of the Securities Act).

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

“**Exempt Issuance**” means securities issued pursuant to acquisitions or strategic transactions approved by a majority of the disinterested directors of the Company, 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 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.

“**Final Prospectus**” means the prospectus in the form first filed with the Commission pursuant to and within the time limits described in Rule 424(b) under the Securities Act.

“**Free Writing Prospectus**” has the meaning set forth in Rule 405 under the Securities Act.

“**Investment Company Act**” means the Investment Company Act of 1940, as amended, and the rules and regulations promulgated thereunder.

“**Issuer Free Writing Prospectus**” means an “issuer free writing prospectus” as defined in Rule 433(h)(1) under the Securities Act.

“**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, including any material incorporated by reference therein, included in the Registration Statement prior to the time at which the Commission declared the Registration Statement effective.

“**Pricing Disclosure Package**” means the Pricing Prospectus collectively with the documents and pricing information set forth in Schedule II hereto.

“**Pricing Prospectus**” means the Preliminary Prospectus, including any material incorporated by reference therein, included in the Registration Statement at the time at which the Commission declared the Registration Statement effective.

“**Prospectus Delivery Period**” means such period of time after the first date of the public offering of the Closing Units as in the opinion of counsel for the Underwriter a prospectus relating to the Closing Units is required by law to be delivered (or required to be delivered but for Rule 172 under the Securities Act) in connection with sales of the Closing Units by Underwriter or dealer.

“**Registration Statement**” means (a) the registration statement on Form S-1 (File No. 333-267206), including a prospectus, registering the offer and sale of the Closing Units under the Securities Act at the time the Commission declared it effective, including each of the exhibits, financial statements and schedules thereto, including any material incorporated by reference therein, (b) any Rule 430A Information, and (c) any Rule 462(b) Registration Statement.

“**Rule 430A Information**” means the information deemed, pursuant to Rule 430A under the Securities Act, to be part of the Registration Statement at the time the Commission declared the Registration Statement effective.

“**Rule 462(b) Registration Statement**” means an abbreviated registration statement to register the offer and sale of additional Closing Units pursuant to Rule 462(b) under the Securities Act.

“**Sarbanes-Oxley Act**” means the Sarbanes-Oxley Act of 2002, as amended, and the rules and regulations promulgated thereunder.

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

“**Testing-the-Waters Communication**” means any oral communication or Written Communication with potential investors undertaken in reliance on Section 5(d) of under the Securities Act and Rule 163B thereunder.

“**Written Communication**” has the meaning set forth in Rule 405 under the Securities Act.

“**Written Testing-the-Waters Communications**” means any Testing-the-Waters Communication that is a Written Communication.

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## 1. Representations and Warranties of the Company.

The Company hereby represents and warrants to, and agrees with, the Underwriter that:

### (a) Registration Statement.

(i) The Company has prepared and filed the Registration Statement with the Commission under the Securities Act. The Commission has declared the Registration Statement effective under the Securities Act and the Company has not as of the date of this Agreement filed a post-effective amendment to the Registration Statement. The Commission has not issued any order suspending the effectiveness of the Registration Statement or any order preventing or suspending the use of the Registration Statement, the Final Prospectus, any Preliminary Prospectus or any Issuer Free Writing Prospectus, and no proceedings for such purpose or pursuant to Section 8A of the Securities Act have been initiated, are pending before or, to the Company’s knowledge, threatened by the Commission.

(ii) The Registration Statement, at the time it became effective, did not contain, and any post-effective amendment thereto, as of the effective date of such amendment, 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; provided that the Company makes no representation or warranty with respect to any statements or omissions made in reliance upon and in conformity with information relating to the Underwriter furnished to the Company in writing by the Underwriter for use in the Registration Statement (including any post-effective amendment thereto), the Pricing Disclosure Package, the Final Prospectus (including any amendments or supplements thereto), any Preliminary Prospectus, any Issuer Free Writing Prospectus or any Testing-the-Waters Communication, it being understood and agreed that the only such information furnished by the Underwriter consists of the information under the headings “Underwriting – Price Stabilization, Short Positions and Penalty Bids” and “Underwriting – Electronic Distribution” in each Preliminary Prospectus, the Pricing Prospectus and the Final Prospectus (collectively, the “**Underwriter Information**”).

(iii) Each of the Registration Statement and any post-effective amendment thereto, at the time it became effective and at the date hereof, complied and will comply in all material respects with the Securities Act.

(b) Pricing Disclosure Package. The Pricing Disclosure Package, as of the Applicable Time, did not, and as of the Closing Date (as defined below) and as of any Additional Closing Date (as defined below), as the case may be, will not, contain any untrue statement of a material fact or omit to state a material fact necessary in order to make the statements therein, in the light of the circumstances under which they were made, not misleading; provided that the Company makes no representation or warranty with respect to any statements or omissions made in reliance upon and in conformity with the Underwriter Information.

### (c) Final Prospectus.

(i) Each of the Final Prospectus and any amendments or supplements thereto, as of its date, as of the time it is filed with the Commission pursuant to Rule 424(b) under the Securities Act, as of the Closing Date and as of any Additional Closing Date, as the case may be, will not contain any untrue statement of a material fact or omit to state a material fact necessary in order to make the statements therein, in the light of the circumstances under which they were made, not misleading; provided that the Company makes no representation or warranty with respect to any statements or omissions made in reliance upon and in conformity with the Underwriter Information.

(ii) Each of the Final Prospectus and any amendments or supplements thereto, at the time it is filed with the Commission pursuant to Rule 424(b) under the Securities Act, as of the Closing Date and as of any Additional Closing Date, as the case may be, will comply in all material respects with the Securities Act.

### (d) Preliminary Prospectuses.

(i) Each Preliminary Prospectus, as of the time it was filed with the Commission pursuant to Rule 424(a) under the Securities Act, if any, did not contain any untrue statement of a material fact or omit to state a material fact necessary in order to make the statements therein, in the light of the circumstances under which they were made, not misleading; provided that the Company makes no representation or warranty with respect to any statements or omissions made in reliance upon and in conformity with the Underwriter Information.

(ii) Each Preliminary Prospectus, at the time it was filed with the Commission pursuant to Rule 424(a) under the Securities Act, if any, complied in all material respects with the Securities Act.

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### (e) Issuer Free Writing Prospectuses.

(i) Each Issuer Free Writing Prospectus, when considered together with the Preliminary Prospectus accompanying, or delivered prior to the delivery of, such Issuer Free Writing Prospectus, did not, as of the date of such Issuer Free Writing Prospectus, and will not, as of the Closing Date and as of any Additional Closing Date, as the case may be, contain any untrue statement of a material fact or omit to state a material fact necessary in order to make the

statements therein, in the light of the circumstances under which they were made, not misleading; provided that the Company makes no representation or warranty with respect to any statements or omissions made in reliance upon and in conformity with the Underwriter Information.

(ii) Each Issuer Free Writing Prospectus, at the time of filing with the Commission, complied or will comply in all material respects with the Securities Act.

(iii) The Company has filed, or will file, with the Commission, within the time period specified in Rule 433(d) under the Securities Act, any Free Writing Prospectus it is required to file pursuant to Rule 433(d) under the Securities Act. The Company has made available any Bona Fide Electronic Road Show used by it in compliance with Rule 433(d)(8)(ii) under the Securities Act such that no filing of any “road show” (as defined in Rule 433(h) under the Securities Act) (“*Road Show*”) is required in connection with the offering of the Closing Units.

(iv) Except for the Issuer Free Writing Prospectuses, if any, set forth in Schedule II hereto and electronic road shows, if any, each furnished to the Underwriter before first use, the Company has not used, authorized the use of, referred to or participated in the planning for use of, and will not, without the prior consent of the Underwriter, use, authorize the use of, refer to or participate in the planning for use of, any Free Writing Prospectus.

(f) Testing-the-Waters Communications.

The Company has not (x) alone engaged in any Testing-the-Waters Communication and (y) authorized anyone to engage in Testing-the-Waters Communications.

(g) No Other Disclosure Materials. Other than the Registration Statement, the Pricing Disclosure Package, the Final Prospectus and the Road Show, the Company (including its agents and representatives, other than the Underwriter, as to which no representation or warranty is given) has not, directly or indirectly, distributed, prepared, used, authorized, approved or referred to, and will not distribute, prepare, use, authorize, approve or refer to, any offering material in connection with the offering and sale of the Securities.

(h) Ineligible Issuer. At the time of filing of the registration statement on Form S-1 (File No. 333-267206) registering the offer and sale of the Securities submitted to the Commission on August 31, 2022 and any amendment thereto and at the date hereof, the Company was not and is not an “ineligible issuer” as defined in Rule 405 under the Securities Act.

(i) Emerging Growth Company. From the time of the initial confidential submission of the Registration Statement to the Commission (or, if earlier, the first date on which the Company engaged directly or through any person authorized to act on its behalf in any Testing-the-Waters Communication) through the date hereof, the Company has been and is an Emerging Growth Company.

(j) Due Authorization. The Company has full right, power and authority to execute and deliver this Agreement and to perform its obligations hereunder; and all action required to be taken for the due and proper authorization, execution and delivery by it of this Agreement and the consummation by it of the transactions contemplated hereby and thereby has been duly and validly taken.

(k) Underwriting Agreement. This Agreement has been duly authorized, executed and delivered by the Company and each, assuming the due authorization, execution and delivery by the other parties hereto and thereto, constitutes the legal, valid and binding obligation of the Company, enforceable against the Company in accordance with its terms, except as (i) the enforcement may be limited by bankruptcy, insolvency, fraudulent transfer, reorganization, moratorium or other similar laws relating to or affecting the rights and remedies of creditors generally or by general equitable principles (whether considered in a proceeding at law or in equity) relating to enforceability and (ii) rights to indemnification and contribution hereunder may be limited by applicable law and public policy considerations.

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(l) No Material Adverse Change. Except as otherwise disclosed in the Registration Statement, the Pricing Disclosure Package and the Final Prospectus (in each case exclusive of any amendment or supplement thereto), since the date of the most recent financial statements included in the Registration Statement, the Pricing Disclosure Package and the Final Prospectus: (i) there has been no material adverse change, or any development that would result in a material adverse change, in or affecting the condition (financial or otherwise), earnings, business, properties, management, financial position, stockholders’ equity, or results of operations, whether or not arising from transactions in the ordinary course of business, of the Company and its subsidiaries, considered as a whole; (ii) there has been no change in the share capital of the Company (other than (A) the issuance of shares of Common Stock upon the exercise or settlement (including any “net” or “cashless” exercises or settlements) of stock options, restricted share units or warrants described as outstanding, (B) the grant of options and awards under existing equity incentive plans, (C) the repurchase of shares of Common Stock by the Company, which were issued pursuant to the early exercise of stock options by option holders and are subject to repurchase by the Company, in each case, as described in the Registration Statement, the Pricing Disclosure Package and the Final Prospectus or (D) the 15-for-1 reverse stock split effected by the Company on September 22, 2022 (the “*Reverse Stock Split*”), or material change in the short-term debt or long-term debt of the Company or any of its subsidiaries, considered as a whole, and (iii) the Company and its subsidiaries, considered as a whole, have not incurred any material liability or obligation, indirect, direct or contingent (whether or not in the ordinary course of business); nor entered into any transaction or agreement (whether or not in the ordinary course of business) that is material to the Company and its subsidiaries, considered as a whole; and (iv) there has been no dividend or distribution of any kind declared, set aside for payment, paid or made by the Company or, except for (x) dividends paid to the Company or other subsidiaries of the Company, any of its subsidiaries on any class of capital stock or repurchase or redemption by the Company or any of its subsidiaries of any class of capital stock and (y) payments made in respect of fractional shares that would have resulted from the Reverse Stock Split.

(m) Organization and Good Standing of the Company and its Subsidiaries. The Company and its subsidiaries have been duly organized or incorporated and are validly existing and in good standing under the laws of their respective jurisdictions of organization or incorporation, are duly qualified to do business and are in good standing in each jurisdiction in which their respective ownership or lease of property or the conduct of its businesses requires such qualification, and have all power and authority (corporate and other) necessary to own, lease or hold their respective properties and to conduct the businesses in which they are engaged as described in the Registration Statement, the Pricing Disclosure Package and the Final Prospectus, except where the failure to be in good standing, to be so qualified or to have such power or authority would not, individually or in the aggregate, have a material adverse effect on the condition (financial or otherwise), earnings, business, properties, management, financial position, stockholders’ equity, or results of operations of the Company and its subsidiaries, considered as a whole, or adversely affect the performance by the Company of its obligations under this Agreement (a “*Material Adverse Effect*”).

(n) Capitalization. The capitalization of the Company is as set forth in the Registration Statement, the Pricing Disclosure Package and the Final Prospectus under the heading “Capitalization”. All of the outstanding shares of the Company have been duly authorized and validly issued and are fully paid and non-assessable. The Securities have been duly authorized and, when issued and paid for as contemplated herein, will be validly issued, fully paid and non-assessable; the holders thereof are not and will not be subject to personal liability by reason of being such holders; the Securities are not and will not be subject to the preemptive rights of any holders of any security of the Company or similar contractual rights granted by the Company; and all corporate action required to be taken for the authorization, issuance and sale of the Securities has been duly and validly taken. When paid for and issued in accordance with the Closing Warrants, the Closing Pre-funded Warrants and the Option Warrants, the Underlying Shares will be validly issued, fully paid and non-assessable; the holders thereof are not and will not be subject to personal liability by reason of being such holders; and the Underlying Shares are not and will not be subject to the preemptive rights of any holders of any security of the Company or similar contractual rights granted by the Company. None of the outstanding shares of Common Stock of the Company were issued in violation of any preemptive rights, rights of first refusal or other similar rights to subscribe for or purchase securities of the Company. Except as disclosed in the Registration Statement, the Pricing Disclosure

Package and the Final Prospectus, there are no authorized or outstanding options, warrants, preemptive rights, rights of first refusal or other rights to acquire, or instruments convertible into or exchangeable or exercisable for, any shares of, or other equity interest in, the Company or any of its subsidiaries. All of the outstanding shares of, or other equity interest in, each of the Company's subsidiaries (i) have been duly authorized and validly issued, (ii) are fully paid and non-assessable (except as such non-assessability may be affected by Sections 18-303, 18-607 and 18-803 of the Delaware Limited Liability Company Act) and (iii) are owned by the Company, directly or through the Company's subsidiaries, free and clear of any security interest, mortgage, pledge, lien, encumbrance, charge, claim or restriction on voting or transfer (collectively, "*Liens*").

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(o) Stock Plans. With respect to the stock options (the "*Stock Options*") granted pursuant to the stock-based compensation plans of the Company and its subsidiaries (the "*Company Stock Plans*"), (i) each Stock Option intended to qualify as an "incentive stock option" under Section 422 of the Internal Revenue Code of 1986, as amended, so qualifies, (ii) each grant of a Stock Option was duly authorized by all necessary corporate action, including, as applicable, approval by the board of directors of the Company (or a duly constituted and authorized committee thereof) and any required stockholder approval by the necessary number of votes or written consents, and the award agreement governing such grant (if any), to the Company's knowledge, was duly executed and delivered by each party thereto, (iii) each such grant was made in all material respects in accordance with the terms of the Company Stock Plans, and (iv) each such grant was properly accounted for in accordance with generally accepted accounting principles as applied in the United States ("*GAAP*") in the financial statements (including the related notes) of the Company.

(p) No Violation or Default. Neither the Company nor any of its subsidiaries is: (i) in violation of its charter, by-laws or similar organizational documents; (ii) in default, and no event has occurred that, with notice or lapse of time or both, would constitute such a default, in the due performance or observance of any term, covenant, condition or other obligation contained in any indenture, mortgage, deed of trust, loan agreement, contract, undertaking or other agreement or instrument to which the Company or any of its subsidiaries is a party or by which the Company or any of its subsidiaries is bound or to which any property, right or asset of the Company or any of its subsidiaries is subject; or (iii) in violation of any law or statute applicable to the Company or any of its subsidiaries or any judgment, order, rule or regulation of any court or arbitrator or governmental or regulatory authority having jurisdiction over the Company or any of its subsidiaries, or any of their respective properties or assets, except, in the case of clauses (ii) and (iii) above, for any such default or violation that would not, individually or in the aggregate, have a Material Adverse Effect or any default or violation arising out of or in connection with the Company's current noncompliance with certain rules of the Nasdaq Stock Market, as disclosed in the Registration Statement, the Pricing Disclosure Package and the Final Prospectus.

(q) No Conflicts. None of (i) the execution, delivery and performance of this Agreement by the Company, (ii) the issuance, sale and delivery of the Securities, (iii) the application of the proceeds of the offering as described under "Use of Proceeds" in the Registration Statement, the Pricing Disclosure Package and the Final Prospectus, or (iv) the consummation of the transactions contemplated herein will: (x) result in any violation of the terms or provisions of the charter, by-laws or similar organizational documents of the Company or any of its subsidiaries; (y) conflict with, result in a breach or violation of, or require the approval of stockholders, members or partners or any approval or consent of any persons under, any of the terms or provisions of, constitute a default under, result in the termination, modification, or acceleration of, or result in the creation or imposition of any lien, charge or encumbrance upon any property, right or asset of the Company or any of its subsidiaries pursuant to, any material indenture, mortgage, deed of trust, loan agreement, note agreement, contract, undertaking or other material agreement, obligation, condition, covenant or instrument to which the Company or any of its subsidiaries is a party or by which the Company or any of its subsidiaries is bound or to which any property, right or asset of the Company or any of its subsidiaries is subject, except where such consent or approval has been obtained; or (z) result in the violation of any law, statute or regulation applicable to the Company or any of its subsidiaries or any judgment, order, rule, decree of any court, arbitrator, governmental or regulatory authority, agency or body having jurisdiction over the Company or any of its subsidiaries or any of their respective properties or assets, which would, in each case, have a Material Adverse Effect on the Company or any of its subsidiaries.

(r) No Consents Required. No consent, approval, authorization, order, filing, registration, license or qualification of or with any court, arbitrator, or governmental or regulatory authority, agency, or body is required for (i) the execution, delivery and performance by the Company of this Agreement; (ii) the issuance, sale and delivery of the Securities; or (iii) the consummation of the transactions contemplated herein, except for such consents, approvals, authorizations, orders, filings, registrations or qualifications as (x) have already been obtained or made and are still in full force and effect, (y) may be required by FINRA and Nasdaq, and (z) may be required under applicable state securities laws in connection with the purchase, distribution and resale of the Securities by the Underwriter.

(s) Independent Accountants. BDO USA, LLP, which expressed its opinion with respect to the financial statements of the Company (which term as used in this Agreement includes the related notes thereto) and supporting schedules included in the Registration Statement, the Pricing Disclosure Package and the Final Prospectus, is an independent registered public accounting firm with respect to the Company and its subsidiaries within the meaning of the rules and regulations of the Commission and the Public Company Accounting Oversight Board and as required by the Securities Act.

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(t) Financial Statements and Other Financial Data. The financial statements (including the related notes thereto), together with the supporting schedules, included in the Registration Statement, the Pricing Disclosure Package and the Final Prospectus comply in all material respects with the applicable requirements of the Securities Act and present fairly in all material respects the financial position of the entities to which they relate as of and at the dates indicated and the results of their operations and cash flows for the periods specified. Such financial statements, notes and schedules have been prepared in conformity with GAAP applied on a consistent basis throughout the periods involved, except as may be expressly stated in the notes thereto. The financial data set forth in the Registration Statement, the Pricing Disclosure Package and the Final Prospectus under the captions "Capitalization" present fairly the information set forth therein on a basis consistent with that of the audited financial statements included in the Registration Statement, the Pricing Disclosure Package and the Final Prospectus.

(u) Statistical and Market-Related Data. The statistical and market-related data included in the Registration Statement, the Pricing Disclosure Package and the Final Prospectus are based on or derived from sources that the Company reasonably and in good faith believes to be accurate and reliable in all material respects.

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

(w) Legal Proceedings. Except as disclosed in the Registration Statement, the Pricing Disclosure Package and the Final Prospectus, (i) there are no legal, governmental or regulatory investigations, actions, demands, claims, suits, arbitrations, inquiries or proceedings (collectively, "*Actions*") pending to which the Company or any of its subsidiaries is or may be a party or to which any property, right or asset of the Company or any of its subsidiaries is or may be the subject that, individually or in the aggregate, if determined adversely to the Company or any of its subsidiaries, would have a Material Adverse Effect; and (ii) to the knowledge of the Company, no such Actions are threatened or contemplated by any governmental or regulatory authority or by others.

(x) Labor Disputes. No labor disturbance by or dispute with the employees of the Company or any of its subsidiaries exists or, to the knowledge of the Company, is threatened or contemplated that would, individually or in the aggregate, have a Material Adverse Effect.

(y) Intellectual Property Rights. (i) The Company and its subsidiaries own or have the right to use all patents, patent applications, trademarks, service marks, trade names, and other source indicators and registrations and applications for registration thereof, domain name registrations, copyrights and registrations and applications for registration thereof, technology and know-how, trade secrets, and all other intellectual property and related proprietary rights (collectively, **“Intellectual Property Rights”**) necessary to conduct their respective businesses in all material respects; (ii) other than as disclosed in the Final Prospectus, neither the Company nor any of its subsidiaries has received any notice of infringement, misappropriation or other conflict with (and neither the Company nor any of its subsidiaries is otherwise aware of any infringement, misappropriation or other conflict with) the Intellectual Property Rights of any other person, except for such infringement, misappropriation or other conflict as would not have a Material Adverse Effect; and (iii) to the knowledge of the Company, the Intellectual Property Rights of the Company and its subsidiaries are not being infringed, misappropriated or otherwise violated by any person.

(z) Licenses and Permits. (i) The Company and its subsidiaries possess such valid and current certificates, authorizations, approvals, licenses and permits (collectively, **“Authorizations”**) issued by, and have made all declarations, amendments, supplements and filings with, the appropriate state, federal or foreign regulatory agencies or bodies necessary to own, lease and operate their respective properties and to conduct their respective businesses as set forth in the Registration Statement, the Pricing Disclosure Package and the Final Prospectus; (ii) all such Authorizations are valid and in full force and effect and the Company and its subsidiaries are in compliance with the terms and conditions of all such Authorizations; and (iii) neither the Company nor any of its subsidiaries has received notice of any revocation, termination or modification of, or non-compliance with, any such Authorization or has any reason to believe that any such Authorization will not be renewed in the ordinary course, except where, in the case of clauses (i), (ii) and (iii), the failure to possess, make or obtain such Authorizations (by possession, declaration or filing) would not, individually or in the aggregate, have a Material Adverse Effect.

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(aa) Title to Property. Neither the Company nor any of its subsidiaries own any real property. The Company and its subsidiaries have good and marketable title in fee simple to, or have valid and enforceable rights to lease or otherwise use, all items of personal property (other than with respect to Intellectual Property Rights, which is addressed exclusively in Section 1(y)) that are material to the respective businesses of the Company and its subsidiaries, in each case, free and clear of all liens, encumbrances, claims, and defects and imperfections of title, except such liens, encumbrances, claims, defects and imperfections as (i) are disclosed in the Registration Statement, the Pricing Disclosure Package and the Final Prospectus, or (ii) do not materially affect the value of such property and do not materially interfere with the use made or proposed to be made of such property by the Company and its subsidiaries. The Company and its subsidiaries have good and marketable title in fee simple to, or have valid and enforceable rights to lease or otherwise use, all items of real and personal property that are material to the respective businesses of the Company and its subsidiaries, in each case, free and clear of all liens, encumbrances, claims and defects and imperfections of title, except such liens, encumbrances, claims, defects and imperfections as (i) are disclosed in the Registration Statement, the Pricing Disclosure Package and the Final Prospectus, or (ii) do not materially affect the value of such property and do not materially interfere with the use made or proposed to be made of such property by the Company and its subsidiaries. All items of real and personal property held under lease by the Company and its subsidiaries are held under valid, subsisting and enforceable leases, with such exceptions as do not materially interfere with the use made or proposed to be made of such property by the Company and its subsidiaries.

(bb) Taxes. The Company and each of its subsidiaries have filed all federal, state, local and foreign tax returns required to be filed through the date hereof or have timely requested extensions thereof and have paid all taxes required to be paid thereon (except as currently being contested in good faith and for which reserves required by GAAP have been created in the financial statements of the Company). The charges, accruals and reserves in respect of any income and other tax liability in the financial statements of the Company referred to in Section 1(t) are adequate, in accordance with GAAP principles, to meet any assessments for any taxes of the Company accruing through the end of the last period specified in such financial statements.

(cc) Investment Company Act. Neither the Company nor any of its subsidiaries is or, after giving effect to the offer and sale of the Securities and the application of the proceeds therefrom as described under “Use of Proceeds” in the Registration Statement, the Pricing Disclosure Package and the Final Prospectus, will be required to register as an “investment company” (as defined in the Investment Company Act).

(dd) Insurance. The Company carries or is entitled to the benefits of insurance, with reputable insurers, and in such amounts and covering such risks which the Company believes are reasonably adequate, and all such insurance is in full force and effect. The Company has no reason to believe that it will not be able (i) to renew its existing insurance coverage as and when such policies expire or (ii) to obtain comparable or new coverage from similar institutions as may be necessary or appropriate to conduct its business as now conducted and at a cost that would not reasonably be expected to result in a Material Adverse Effect. The Company and its subsidiaries are in compliance with the terms of such policies in all material respects; neither the Company nor any of its subsidiaries has received notice from any insurer or agent of such insurer that capital improvements or other expenditures (other than premiums) are required to be made in order to continue such insurance; and neither the Company nor any of its subsidiaries has been refused any insurance coverage sought or applied for. There are no claims by the Company or any of its subsidiaries under any such policy as to which any insurer is denying liability or defending under a reservation of rights clause.

(ee) No Stabilization or Manipulation. None of the Company, its Affiliates or any person acting on its or any of their behalf (other than the Underwriter, as to which no representation or warranty is given) has taken, directly or indirectly, any action designed to or that has constituted or that would reasonably be expected to cause or result in the stabilization or manipulation of the price of any securities of the Company. The Company acknowledges that the Underwriter may engage in passive market making transactions in the shares of Common Stock on the Nasdaq Capital Market (the **“Exchange”**) in accordance with Regulation M under the Exchange Act (**“Regulation M”**).

(ff) Compliance with the Sarbanes-Oxley Act. The Company and, to the knowledge of the Company, its officers and directors, in their capacities as such, are in compliance in all material respects with all of the applicable provisions of the Sarbanes-Oxley Act.

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(gg) Accounting Controls. The Company and its subsidiaries maintain a system of internal accounting controls designed to provide reasonable assurance that: (i) transactions are executed in accordance with management’s general or specific authorizations, (ii) transactions are recorded as necessary to permit preparation of financial statements in conformity with GAAP and to maintain asset accountability, (iii) access to assets is permitted only in accordance with management’s general or specific authorization, and (iv) the recorded accountability for assets is compared with the existing assets at reasonable intervals and appropriate action is taken with respect to any differences. Other than as disclosed in the Registration Statement, since the date of the most recent balance sheet included in the Registration Statement, the Pricing Disclosure Package and the Final Prospectus, (x) the Company’s auditors have not been advised of (A) any new significant deficiencies or material weaknesses in the design or operation of the internal control over financial reporting of the Company and its subsidiaries which could adversely affect the Company’s ability to record, process, summarize, and report financial data; or (B) any fraud, whether or not material, that involves management or other employees who have a role in the internal control over financial reporting of the Company or its subsidiaries; and (y) there have been no significant changes in the internal control over financial reporting of the Company or its subsidiaries or in other factors that could significantly affect, such internal control over financial reporting, since the respective dates as of which information is given in the Registration Statement, the Pricing Disclosure Package and the Final Prospectus.

(hh) Disclosure Controls and Procedures. The Company has developed and currently maintains disclosure controls and procedures designed to comply with Rule 13a-15 under the Exchange Act Regulations applicable to it, and as of the date of the most recent balance sheet included in the Registration Statement, the Pricing



Disclosure Package and the Final Prospectus, such controls and procedures were effective to ensure that all material information concerning the Company will be made known on a timely basis to the individuals responsible for the preparation of the Company's Exchange Act filings and other public disclosure documents.

(ii) Compliance with Environmental Laws. The Company and each of its subsidiaries (i) are, and since January 1, 2020 have been, in compliance in all material respects with all Environmental Laws (as defined below) applicable to such entity, which compliance includes, without limitation, obtaining, maintaining and complying with all permits and authorizations and approvals required by Environmental Laws to conduct their respective businesses; and (ii) have not received notice or otherwise have knowledge of any actual or alleged violation of Environmental Laws, or of any actual or potential liability for or other obligation concerning the presence, disposal or release of hazardous or toxic substances or wastes, pollutants or contaminants, and, except as described in the Registration Statement, the Pricing Disclosure Package and the Final Prospectus, (x) there are no proceedings that are pending, or known to be contemplated, against the Company or any of its subsidiaries under Environmental Laws, other than such proceedings regarding which it is reasonably believed that no monetary sanctions of \$100,000 or more will be imposed; and (y) none of the Company or any of its subsidiaries is aware of any issues regarding compliance with Environmental Laws, including any pending or proposed Environmental Laws, or liabilities or other obligations under Environmental Laws or concerning hazardous or toxic substances or wastes, pollutants or contaminants, that could reasonably be expected to have a material effect on the capital expenditures, earnings or competitive position of the Company and its subsidiaries; and (z) none of the Company or any of its subsidiaries currently anticipates material capital expenditures relating to Environmental Laws.

As used herein, the term "*Environmental Laws*" means any laws, regulations, ordinances, rules, orders, judgments, decrees, permits or other legal requirements of any governmental authority, including, without limitation, any international, foreign, national, state, provincial, regional, or local authority, relating to pollution, the protection of human health or safety, the environment, or natural resources, or to the use, handling, storage, manufacturing, transportation, treatment, discharge, disposal or release of hazardous or toxic substances or wastes, pollutants or contaminants.

(jj) Related Party Transactions. Except as disclosed in the Registration Statement, the Pricing Disclosure Package and the Final Prospectus, no relationship, direct or indirect, exists between or among the Company or any of its subsidiaries, on the one hand, and the directors, officers, stockholders, other Affiliates, customers or suppliers of the Company or any of its subsidiaries, on the other hand, that would be required by the Securities Act to be described in the Registration Statement, the Pricing Disclosure Package and the Final Prospectus.

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(kk) No Unlawful Contributions or Other Payments. Neither the Company nor any of its subsidiaries nor, to the knowledge of the Company, any director, officer, agent, employee, Affiliate or other person associated with or acting on behalf of the Company or any of its subsidiaries has (i) used any corporate funds for any unlawful contribution, gift, entertainment or other unlawful expense relating to political activity; (ii) made any direct or indirect unlawful payment to any foreign or domestic government or regulatory official or employee; (iii) made any bribe, rebate, payoff, influence payment, kickback or other unlawful payment; or (iv) violated or is in violation of any provision of (y) the Foreign Corrupt Practices Act of 1977, as amended, and the rules and regulations thereunder, or (z) any non-U.S. anti-bribery or anti-corruption statute or regulation. The Company and its subsidiaries have instituted and maintain and enforce policies and procedures designed to promote and ensure compliance with all applicable anti-bribery and anti-corruption laws.

(ll) Compliance with Anti-Money Laundering Laws. The operations of the Company and its subsidiaries are and have been conducted at all times in compliance in all material respects with all applicable financial recordkeeping and reporting requirements, the applicable anti-money laundering statutes of all jurisdictions where the Company or any of its subsidiaries conduct business, the rules and regulations thereunder and any related or similar rules, regulations or guidelines issued, administered or enforced by any governmental agency (collectively, the "*Anti-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 Anti-Money Laundering Laws is pending or, to the knowledge of the Company, threatened.

(mm) Compliance with 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 any of its subsidiaries is an individual or entity (an "*OFAC Person*"), or is owned or controlled by an OFAC Person, that is currently the subject or target of any sanctions administered or enforced by the U.S. government (including, without limitation, the Office of Foreign Assets Control of the U.S. Treasury Department ("*OFAC*") or the U.S. Department of State and including, without limitation, the designation as a "specially designated national" or "blocked person"), the United Nations Security Council, the European Union, His Majesty's Treasury, or other relevant sanctions authority (collectively, "*Sanctions*"), nor is the Company or any of its subsidiaries located, organized or resident in a country or territory that is the subject or the target of Sanctions, including, without limitation, Crimea, Cuba, Iran, North Korea, Sudan and Syria (each, a "*Sanctioned Country*"); and the Company will not directly or indirectly use the proceeds of the offering, or lend, contribute or otherwise make available such proceeds to any subsidiary, joint venture partner or other OFAC Person (i) to fund or facilitate any activities of or business with any OFAC Person that, at the time of such funding or facilitation, is the subject or the target of Sanctions, (ii) to fund or facilitate any activities or business in any Sanctioned Country or (iii) in any other manner that will result in a violation by any OFAC Person (including any OFAC Person participating in the transaction, whether as underwriter, advisor, investor or otherwise) of Sanctions. Since the Company's inception, the Company and its subsidiaries have not knowingly engaged in and are not now knowingly engaged in any dealings or transactions with any OFAC Person that at the time of the dealing or transaction is or was the subject or the target of Sanctions or with any Sanctioned Country.

(nn) No Registration Rights. Except as described in the Registration Statement, the Pricing Disclosure Package and the Final Prospectus, there are no contracts, agreements or understandings between the Company or any of its subsidiaries, on the one hand, and any person, on the other hand, granting such person any rights (except for any such rights that have been waived) to require the Company or any of its subsidiaries to file a registration statement under the Securities Act with respect to any securities of the Company or any of its subsidiaries owned or to be owned by such person or to require the Company or any of its subsidiaries to include such securities in any securities to be registered pursuant to any registration statement to be filed by the Company or any of its subsidiaries under the Securities Act.

(oo) Subsidiaries. The Company does not own or control, directly or indirectly, any corporation, association or other entity other than the subsidiaries listed in Schedule III attached hereto.

(qq) No Broker's Fees. Except as disclosed in the Registration Statement, the Pricing Disclosure Package and the Final Prospectus, neither the Company nor any of its subsidiaries is a party to any contract, agreement or understanding with any person (other than this Agreement) that would give rise to a valid claim against any of them or the Underwriter for a brokerage commission, finder's fee or like payment in connection with the offering and sale of the Securities.

(rr) Exchange Listing. Subject to notice of issuance, the Closing Shares, the Option Shares and the Underlying Shares have been approved for listing on the Exchange.

## 2. Representations and Warranties of the Underwriter.

The Underwriter represents and warrants to, and agrees with, the Company:

(a) No Testing-the-Waters Communications. The Underwriter has not (i) alone engaged in any Testing-the-Waters Communication and (ii) authorized anyone to engage in Testing-the-Waters Communications. The Underwriter has not distributed, or authorized anyone else to distribute, any Written Testing-the-Waters Communications.

## 3. Purchase and Resale.

(a) Agreements to Sell and Purchase. On the basis of the representations, warranties and covenants herein and subject to the conditions herein and any adjustments made in accordance with Section 3(c) hereof,

(i) The Company agrees to issue and sell the Closing Units to the Underwriter; and

(ii) The Underwriter agrees to purchase from the Company the number of Closing Units set forth on Schedule I hereto.

(iii) The purchase price per Closing Unit to be paid by the Underwriter to the Company shall be \$3.0195 (representing 91.5% of the Public Offering Price), which purchase price will be allocated as \$3.0095 per Closing Share and \$0.01 per Closing Warrant, and the purchase price per Closing Pre-funded Unit (representing 91.5% of the public offering price of each Closing Pre-funded Unit) shall be \$3.0194, which purchase price will be allocated as \$3.0094 per Closing Pre-funded Warrant and \$0.01 per Closing Warrant. The Closing Units are to be offered initially to the public at the offering price set forth on the cover page of the Final Prospectus, and the Closing Pre-funded Units are to be offered to the public at the Public Offering Price less \$0.0001 (being the per share exercise price of a Pre-funded Warrant).

(iv) Payment for the Closing Units (the "**Closing Units Payment**") shall be made by wire transfer in immediately available funds to the accounts specified by the Company to the Underwriter at the offices of Kaufman & Canoles, P.C. at 10:00 a.m., ET, on October 11, 2022 or at such other place on the same or such other date and time, not later than the fifth Business Day thereafter, as the Underwriter and the Company may agree upon in writing (the "**Closing Date**"). The Closing Units Payment shall be made against delivery of the Closing Units to be purchased on the Closing Date to the Underwriter, with any transfer taxes, stamp duties and other similar taxes payable in connection with the sale of the Closing Units duly paid by the Company. Delivery of the Firm Shares shall be made through the facilities of the Depository Trust Company ("**DTC**"), unless the Underwriter shall otherwise instruct.

(b) Over-Allotment Option. On the basis of the representations, warranties and covenants herein and subject to the conditions herein,

(i) the Underwriter is hereby granted an option (the "**Over-Allotment Option**") to purchase, in the aggregate, up to 545,454 additional shares of Common Stock and/or Pre-funded Warrants to purchase shares of Common Stock, representing 15.0% of the shares of Common Stock and/or Pre-funded Warrants sold in the offering from the Company (the "**Option Shares**" or "**Option Pre-funded Warrants**," as applicable) and/or up to 545,454 additional Warrants to purchase shares of Common Stock, representing 15.0% of the Warrants sold in the offering from the Company (the "**Option Warrants**"). The purchase price to be paid per Option Share or Option Pre-funded Warrant shall be equal to the price per Closing Unit or Closing Pre-funded Warrant set forth in Section 3(a) hereof and the purchase price to be paid per Option Warrant shall be equal to \$0.01 per Option Warrant. The Over-Allotment Option may be elected with respect to, at the Underwriter's sole discretion, Option Shares and Option Warrants together, Option Pre-funded Warrants and Option Warrants together, solely Option Shares, solely Option Pre-funded Warrants, solely Option Warrants, or any combination thereof (each an "**Option Security**" and collectively, the "**Option Securities**"). The shares of Common Stock issuable upon exercise of the Pre-Funded Warrants and the Warrants are referred to herein as the "**Underlying Shares**." The Securities and the Underlying Shares shall be issued directly by the Company and shall have the rights and privileges described in the Registration Statement, the Pricing Disclosure Package and the Final Prospectus. The Closing Warrants, the Option Warrants, if any, the Closing Pre-funded Warrants and the Option Pre-funded Warrants, if any, shall be issued pursuant to, and shall have the rights and privileges set forth in, a warrant agent agreement, dated on or before the Closing Date, between the Company and VStock Transfer, LLC as warrant agent. The certificate (the "**Pre-funded Warrant Certificate**") evidencing the Closing Pre-funded Warrants and the Option Pre-funded Warrants, if any, will be in the form attached hereto as Exhibit A. The offering and sale of the Securities is herein referred to as the "**Offering**".

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(ii) upon an exercise of the Over-Allotment Option and subject to the terms and conditions herein, the Company agrees to issue and sell the number of Option Securities to the Underwriter indicated in the Over-Allotment Exercise Notice;

(iii) The Underwriter may exercise the Over-Allotment Option at any time in whole, or from time to time in part, on or before the forty-fifth (45th) day following the date of the Final Prospectus, by written notice from the Underwriter to the Company (the "**Over-Allotment Exercise Notice**"). The Underwriter must give the Over-Allotment Exercise Notice to the Company at least two Business Days prior to the Closing Date or the applicable Additional Closing Date, as the case may be. The Underwriter may cancel any exercise of the Over-Allotment Option at any time prior to the Closing Date or the applicable Additional Closing Date, as the case may be, by giving written notice of such cancellation to the Company.

(iv) The Over-Allotment Exercise Notice shall set forth:

(A) the aggregate number of Option Securities as to which the Over-Allotment Option is being exercised;

(B) the aggregate purchase price for the Option Securities;

(C) the names and denominations in which the Option Securities are to be registered; and

(D) the applicable Additional Closing Date, which may be the same date and time as the Closing Date but shall not be earlier than the Closing Date nor later than the tenth (10th) full Business Day after the date of the Over-Allotment Exercise Notice.

(v) Payment for the Option Securities (the "**Option Securities Payment**") shall be made by wire transfer in immediately available funds to the accounts specified by the Company to the Underwriter at the offices of Kaufman & Canoles, P.C. at 10:00 a.m. ET on the date specified in the corresponding Over-Allotment Exercise Notice, or at such other place on the same or such other date and time, not later than the fifth Business Day thereafter, as the Underwriter and the Company may agree upon in writing (an "**Additional Closing Date**"). The Option Securities Payment shall be made against delivery to the Underwriter for the respective accounts of the Underwriter of the Option Securities to be purchased on any Additional Closing Date, with any transfer taxes, stamp duties and other similar taxes payable in connection with the sale of the Option Securities duly paid by the Company. Delivery of the Option Shares shall be made through the facilities of DTC unless the Underwriter shall otherwise instruct.

(vi) Reserved.

(c) Public Offering. The Company understands that the Underwriter intends to make a public offering of the Closing Units as soon after the execution and delivery of this Agreement as in the judgment of the Underwriter is advisable, and initially to offer the Closing Units on the terms set forth in the Final Prospectus. The Company acknowledges and agrees that the Underwriter may offer and sell Closing Units to or through any Affiliate of the Underwriter.

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#### 4. Covenants of the Company.

The Company hereby covenants and agrees with the Underwriter as follows:

(a) Filings with the Commission. The Company will:

(i) prepare and file the Final Prospectus (in a form approved by the Underwriter and containing the Rule 430A Information) with the Commission in accordance with and within the time periods specified by Rules 424(b) and 430A under the Securities Act;

(ii) file any Issuer Free Writing Prospectus with the Commission to the extent required by Rule 433 under the Securities Act; and

(iii) file with the Commission such reports as may be required by Rule 463 under the Securities Act.

(b) Notice to the Underwriter. The Company will advise the Underwriter promptly, and confirm such advice in writing:

(i) when the Registration Statement has been declared effective by the Commission;

(ii) when the Final Prospectus has been filed with the Commission;

(iii) when any amendment to the Registration Statement has been filed or becomes effective;

(iv) when any Rule 462(b) Registration Statement has been filed with the Commission;

(v) when any supplement to the Final Prospectus, any Issuer Free Writing Prospectus, any Written Testing-the-Waters Communication or any amendment to the Final Prospectus has been filed or distributed;

(vi) of (x) any request by the Commission for any amendment to the Registration Statement or any amendment or supplement to the Final Prospectus, (y) the receipt of any comments from the Commission relating to the Registration Statement or (z) any other request by the Commission for any additional information, including, but not limited to, any request for information concerning any Testing-the-Waters Communication;

(vii) of (x) the issuance by the Commission of any order suspending the effectiveness of the Registration Statement or preventing or suspending the use of the Registration Statement, the Pricing Disclosure Package, the Final Prospectus, any Preliminary Prospectus or any Issuer Free Writing Prospectus or any Written Testing-the-Waters Communication or (y) the initiation or, to the knowledge of the Company, threatening of any proceeding for that purpose or pursuant to Section 8A of the Securities Act;

(viii) of the occurrence of any event or development within the Prospectus Delivery Period as a result of which, the Final Prospectus, the Pricing Disclosure Package or, any Issuer Free Writing Prospectus or any Written Testing-the-Waters Communication as then amended or supplemented would include any untrue statement of a material fact or omit to state a material fact necessary in order to make the statements therein, in the light of the circumstances existing when the Final Prospectus, the Pricing Disclosure Package, any such Issuer Free Writing Prospectus or any such Written Testing-the-Waters Communication is delivered to a purchaser, not misleading;

(ix) of the issuance by any governmental or regulatory authority or any order preventing or suspending the use of any of the Registration Statement, the Pricing Disclosure Package, the Final Prospectus, any Preliminary Prospectus, any Issuer Free Writing Prospectus or any Testing-the-Waters Communication or the initiation or threatening for that purpose; and

(x) of the receipt by the Company of any notice with respect to any suspension of the qualification of the Closing Units for offer and sale in any jurisdiction or the initiation or, to the knowledge of the Company, threatening, of any proceeding for such purpose.

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(c) Ongoing Compliance. If during the Prospectus Delivery Period:

(A) any event or development shall occur or condition shall exist as a result of which the Final Prospectus as then amended or supplemented would include any untrue statement of a material fact or omit to state any material fact necessary in order to make the statements therein, in the light of the circumstances existing when the Final Prospectus is delivered to a purchaser, not misleading, the Company will, as soon as reasonably possible, notify the Underwriter thereof and forthwith prepare and, subject to Section 4(e) hereof, file with the Commission and furnish, at its own expense, to the Underwriter and to such dealers as the Underwriter may designate such amendments or supplements to the Final Prospectus as may be necessary so that the statements in the Final Prospectus as so amended or supplemented will not, in the light of the circumstances existing when the Final Prospectus is delivered to a purchaser, be misleading; or

(B) it is necessary to amend or supplement the Final Prospectus to comply with applicable law, the Company will, as soon as reasonably possible, notify the Underwriter thereof and forthwith prepare and, subject to Section 4(d) hereof, file with the Commission and furnish, at its own expense, to the Underwriter and to such dealers as the Underwriter may designate such amendments or supplements to the Final Prospectus as may be necessary so that the Final Prospectus will comply with applicable law; and

(ii) if at any time prior to the Closing Date or any Additional Closing Date, as the case may be:

(A) any event or development shall occur or condition shall exist as a result of which the Pricing Disclosure Package as then amended or supplemented would include any untrue statement of a material fact or omit to state any material fact necessary in order to make the statements therein, in the light of the circumstances existing when the Pricing Disclosure Package is delivered to a purchaser, not misleading, the Company will immediately notify the Underwriter thereof and forthwith prepare and, subject to Section 4(e) hereof, file with the Commission (to the extent required)

and furnish, at its own expense, to the Underwriter and to such dealers as the Underwriter may designate such amendments or supplements to the Pricing Disclosure Package as may be necessary so that the statements in the Pricing Disclosure Package as so amended or supplemented will not, in the light of the circumstances existing when the Pricing Disclosure Package is delivered to a purchaser, be misleading; or

(B) it is necessary to amend or supplement the Pricing Disclosure Package to comply with applicable law, the Company will immediately notify the Underwriter thereof and forthwith prepare and, subject to Section 4(d) hereof, file with the Commission (to the extent required) and furnish, at its own expense, to the Underwriter and to such dealers as the Underwriter may designate such amendments or supplements to the Pricing Disclosure Package as may be necessary so that the Pricing Disclosure Package will comply with applicable law.

(d) Amendments, Supplements and Issuer Free Writing Prospectuses. Before (i) using, authorizing, approving, referring to, distributing or filing any Issuer Free Writing Prospectus, (ii) filing (x) any Rule 462(b) Registration Statement or (y) any amendment or supplement to the Registration Statement or the Final Prospectus, or (iii) distributing any amendment or supplement to the Pricing Disclosure Package or the Final Prospectus, the Company will furnish to the Underwriter and counsel for the Underwriter a copy of the proposed Issuer Free Writing Prospectus, Rule 462(b) Registration Statement or other amendment or supplement for review and will not use, authorize, refer to, distribute or file any such Issuer Free Writing Prospectus or Rule 462(b) Registration Statement, or file or distribute any such proposed amendment or supplement (A) to which the Underwriter reasonably objects in a timely manner and (B) which is not in compliance with the Securities Act. The Company will, pursuant to reasonable procedures developed in good faith, retain copies of each Issuer Free Writing Prospectus that is not filed with the Commission in accordance with Rule 433 under the Securities Act.

(e) Delivery of Copies. The Company will, upon request of the Underwriter, deliver, without charge, (i) to the Underwriter, three signed copies of the Registration Statement as originally filed and each amendment thereto, in each case, including all exhibits and consents filed therewith; and (ii) to the Underwriter (A) a conformed copy of the Registration Statement as originally filed and each amendment thereto (without exhibits and consents) and (B) during the Prospectus Delivery Period, as many copies of the Final Prospectus (including all amendments and supplements thereto and each Issuer Free Writing Prospectus) as the Underwriter may reasonably request.

(f) Emerging Growth Company Status. The Company will promptly notify the Underwriter if the Company ceases to be an Emerging Growth Company at any time prior to the later of (i) completion of the distribution of the Closing Units within the meaning of the Securities Act and (ii) completion of the Lock-Up Period (as defined below).

(g) Blue Sky Compliance. The Company will use its best commercially reasonable efforts, with the Underwriter's cooperation, if necessary, to qualify or register (or to obtain exemptions from qualifying or registering) the Securities for offer and sale under the securities or Blue Sky laws of such jurisdictions as the Underwriter shall reasonably request and will use its reasonable best efforts, if necessary, to continue such qualifications, registrations and exemptions in effect so long as required for the distribution of the Securities; provided that the Company shall not be required to (i) qualify as a foreign corporation or other entity or as a dealer in securities in any such jurisdiction where it would not otherwise be required to so qualify, (ii) file any general consent to service of process in any such jurisdiction or (iii) subject itself to taxation in any such jurisdiction if it is not otherwise so subject.

(h) Earning Statement. The Company will make generally available to its security holders and the Underwriter as soon as practicable an earning statement that satisfies the provisions of Section 11(a) of the Securities Act and Rule 158 under the Securities Act covering a period of at least 12 months beginning with the first fiscal quarter of the Company occurring after the "effective date" (as defined in Rule 158 under the Securities Act) of the Registration Statement; provided that the Company will be deemed to have furnished such statement to its security holders and the Underwriter to the extent it is filed on the Commission's Electronic Data Gathering, Analysis and Retrieval system ("**EDGAR**").

(i) Use of Proceeds. The Company shall apply the net proceeds from the sale of the Closing Units and the Option Securities in a manner materially consistent with the description under the caption "Use of Proceeds" in the Registration Statement, the Pricing Disclosure Package and the Final Prospectus.

(j) Clear Market.

(i) For a period of twelve (12) months after the date of the Final Prospectus (the "**Lock-Up Period**"), the Company will not (x) offer, pledge, sell, contract to sell, sell any option or contract to purchase, purchase any option or contract to sell, grant any option, right or warrant to purchase, or otherwise transfer or dispose of, directly or indirectly, or file with the Commission a registration statement under the Securities Act relating to, any shares of Common Stock or any securities convertible into or exercisable or exchangeable for shares of Common Stock, or publicly disclose the intention to make any offer, sale, pledge, disposition or filing, or (y) enter into any swap or other agreement that transfers, in whole or in part, any of the economic consequences of ownership of the shares of Common Stock or any such other securities, whether any such transaction described in clause (x) or (y) above is to be settled by delivery of shares of Common Stock or such other securities, in cash or otherwise, without the prior written consent of the Underwriter.

(ii) The restrictions contained in Section 4(j)(i) hereof shall not apply to: (A) the Securities, (B) any warrants to be issued by the Company in connection with the Offering or shares of Common Stock issued under Company Stock Plans or warrants issued by the Company, in each case, described as outstanding in the Registration Statement, the Pricing Disclosure Package and the Final Prospectus, 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 or conversion price of such securities or to extend the term of such securities (C) any options and other awards granted under a Company Stock Plan as described in the Registration Statement, the Pricing Disclosure Package and the Final Prospectus, (D) the filing by the Company of any registration statement on Form S-8 or a successor forms thereto relating to a Company Stock Plan described in the Registration Statement, the Pricing Disclosure Package and the Final Prospectus and (E) shares of Common Stock or other securities issued in connection with a transaction with an unaffiliated third party that includes a bona fide commercial relationship (including joint ventures, marketing or distribution arrangements, collaboration agreements or intellectual property license agreements) or any acquisition of assets or acquisition, provided that such shares of Common Stock or other 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 twelve (12) months after the date of the Final Prospectus, 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 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.

(iii) If the Underwriter, in its sole discretion, agrees to release or waive the restrictions set forth in any Lock-Up Agreement and provides the Company with notice of the impending release or waiver substantially in the form of Exhibit C hereto at least three (3) Business Days before the effective date of the release or waiver, then the Company agrees to announce the impending release or waiver by a press release substantially in the form of Exhibit D hereto

through a major news service at least two (2) Business Days before the effective date of the release or waiver.

(iv) Notwithstanding the foregoing, this Section 4(j) shall not apply to Exempt Issuance.

(k) No Stabilization or Manipulation. None of the Company, its Affiliates or any person acting on its or any of their behalf (other than the Underwriter, as to which no covenant is given) will take, directly or indirectly, any action designed to or that constitutes or that would reasonably be expected to cause or result in the stabilization or manipulation of the price of any securities of the Company. The Company acknowledges that the Underwriter may engage in passive market making transactions in the shares of Common Stock on the Exchange in accordance with Regulation M.

(l) Investment Company Act. The Company shall not invest, or otherwise use the proceeds received by the Company from the sale of the Securities, in such a manner as would require the Company or any of its subsidiaries to register as an "investment company" (as defined in the Investment Company Act) under the Investment Company Act.

(m) Transfer Agent. For the period of two years from the date of this Agreement, the Company shall engage and maintain, at its expense, a registrar and transfer agent for the shares of Common Stock.

(n) Reports. For the period of two years from the date of this Agreement, the Company will furnish to the Underwriter, as soon as they are available, copies of all reports or other communications (financial or other) furnished to holders of the Securities, and copies of any reports and financial statements furnished to or filed with the Commission or any national securities exchange or automatic quotation system; provided that the Company will be deemed to have furnished such reports and financial statements to the Underwriter to the extent they are filed on the Commission's Electronic Data Gathering, Analysis and Retrieval system.

5. Covenants of the Underwriter. The Underwriter, severally and not jointly, hereby covenants and agrees with the Company as follows:

(a) Underwriter Free Writing Prospectus. The Underwriter has not used, authorized the use of, referred to or participated in the planning for use of, and will not use, authorize the use of, refer to or participate in the planning for use of, any Free Writing Prospectus (which term includes use of any written information furnished to the Commission by the Company and not incorporated by reference into the Registration Statement and any press release issued by the Company) other than (i) a Free Writing Prospectus that contains no "issuer information" filed or required to be filed pursuant to Rule 433(d) under the Securities Act ("*Issuer Information*") that was not included in the Pricing Prospectus or a previously filed Issuer Free Writing Prospectus, (ii) any Issuer Free Writing Prospectus listed in Schedule II hereto or prepared pursuant to Section 1(e)(iv) or Section 4(d) hereof (including any electronic road show), or (iii) any Free Writing Prospectus prepared by the Underwriter and approved by the Company in advance in writing.

(b) Section 8A Proceedings. The Underwriter is not subject to any pending proceeding under Section 8A of the Securities Act with respect to the offering of the Securities and will promptly notify the Company if any such proceeding against it is initiated during the Prospectus Delivery Period.

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6. Payment of Expenses.

(a) Company Expenses. The Company hereby agrees to pay on the Closing Date all expenses incident to the performance of the obligations of the Company under this Agreement including, but not limited to: (a) all filing fees and expenses relating to the registration of the Securities with the Commission; (b) all filing fees and expenses associated with the review of the offering of the Securities by FINRA; (c) all fees and expenses relating to the listing of the Securities on the Exchange; (d) all fees, expenses and disbursements relating to the registration or qualification of the Securities under the "blue sky" securities laws of such states and other jurisdictions as the Underwriter may reasonably designate unless such filings are not required in connection with the Company's listing of the Common Stock on the Exchange; (e) all fees, expenses and disbursements relating to the registration, qualification or exemption of the Securities under the securities laws of such foreign jurisdictions as the Underwriter may reasonably designate; (f) the costs of all mailing and printing of the underwriting documents, the Registration Statement, the Pricing Disclosure Package, the Final Prospectus, any Preliminary Prospectus, any Issuer Free Writing Prospectus or any Testing-the-Waters Communication and all amendments, supplements and exhibits thereto as the Underwriter may reasonably deem necessary; (g) fees and expenses of the transfer agent for the shares of Common Stock; (h) stock transfer and/or stamp taxes, if any, payable upon the transfer of securities from the Company to the Underwriter; (i) the fees and expenses of the Company's accountants; (k) the "road show" expenses; (l) the fees and expenses of the Company's legal counsel and other agents and representatives; (m) the fees and expenses of the Underwriter's counsel. Subject to Section 11 hereof, the total amount payable to the Underwriter pursuant to this Section 6 shall not to exceed \$125,000. The Underwriter may deduct from the net proceeds of the Offering payable to the Company on the Closing Date the expenses set forth herein to be paid by the Company to the Underwriter. Except as provided for in this Agreement, the Underwriter shall bear the costs and expenses incurred by it in connection with the sale of the Securities and the transactions contemplated thereby.

(b) Non-accountable Expenses. On the Closing Date, the Company shall pay to the Underwriter, by deduction from the net proceeds of the Offering a non-accountable expense allowance equal to one percent (1.0%) of the gross proceeds received by the Company from the sale of the Closing Units); provided, however, that in the event that the Offering is terminated, the Company agrees to reimburse the Underwriter pursuant to Section 11 hereof.

(c) Underwriter Expenses. Except to the extent otherwise provided in this Section 6 or Section 8 hereof, the Underwriter will pay all of its own costs and expenses, including the fees and expenses of their counsel, any stock transfer taxes on resale of any of the Securities held by them, and any advertising expenses connected with any offers they may make.

(d) Company Reimbursement. The provisions of this Section 6 shall not affect any agreement that the Company may make for the sharing of such costs and expenses.

7. Conditions of the Obligations of the Underwriter.

The obligations of the Underwriter to purchase the Closing Units as provided herein on the Closing Date or the Option Securities as provided herein on any Additional Closing Date, as the case may be, shall be subject to the timely performance by the Company of its covenants and other obligations hereunder, and to each of the following additional conditions:

(a) Registration Compliance; No Stop Order.

(i) The Registration Statement and any post-effective amendment thereto shall have become effective, no stop order suspending the effectiveness of the Registration Statement or any post-effective amendment thereto shall be in effect, and no proceeding for such purpose or pursuant to Section 8A of the Securities Act shall be pending before or threatened by the Commission.

(ii) The Company shall have filed the Final Prospectus and each Issuer Free Writing Prospectus with the Commission in accordance with and within the time periods prescribed by Section 4(a) hereof.

(iii) The Company shall have (A) disclosed to the Underwriter all requests by the Commission for additional information relating to the offer and sale

of the Securities and (B) complied with such requests to the reasonable satisfaction of the Underwriter.

(b) Representations and Warranties. The representations and warranties of the Company contained herein shall be true and correct in all material respects (or, to the extent representations or warranties are qualified by materiality or Material Adverse Effect, in all respects) on and as of the date hereof, the Closing Date or any Additional Closing Date, as the case may be (except to the extent a representation or warranty speaks as of a specific date, in which case such representation or warranty shall be accurate as of such date); and the statements of the Company and its officers made in any certificates delivered pursuant to this Agreement shall be true and correct on and as of the Closing Date or any Additional Closing Date, as the case may be.

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(c) Accountants' Comfort Letters. On the date of this Agreement and on the Closing Date or any Additional Closing Date, as the case may be, BDO USA, LLP, shall have furnished to the Underwriter, at the request of the Company, letters, dated the respective dates of delivery thereof and addressed to the Underwriter, in form and substance reasonably satisfactory to the Underwriter, containing statements and information of the type customarily included in accountants' "comfort letters" to underwriters with respect to the financial statements and certain financial information contained in each of the Registration Statement, the Pricing Disclosure Package and the Final Prospectus; provided that the letter delivered on the Closing Date or any Additional Closing Date, as the case may be, shall use a "cut-off" date no more than two Business Days prior to the Closing Date or such Additional Closing Date, as the case may be.

(d) No Material Adverse Change. No event or condition of a type described in Section 1(l) hereof shall have occurred or shall exist, which event or condition is not described in each of the Pricing Disclosure Package and the Final Prospectus (in each case, exclusive of any amendment or supplement thereto), the effect of which in the reasonable judgment of the Underwriter makes it impracticable or inadvisable to proceed with the offering, sale or delivery of the Securities on the Closing Date or any Additional Closing Date, as the case may be, in the manner and on the terms contemplated by this Agreement, the Pricing Disclosure Package and the Final Prospectus (in each case, exclusive of any amendment or supplement thereto).

(e) Opinion and Negative Assurance Letter of Counsel to the Company. McGuireWoods LLP, U.S. counsel to the Company with respect to U.S. securities matters, shall have furnished to the Underwriter, at the request of the Company, its (i) written opinion, addressed to the Underwriter and dated the Closing Date or any Additional Closing Date, as the case may be, and (ii) negative assurance letter, addressed to the Underwriter and dated the Closing Date or any Additional Closing Date, as the case may be, in each case, substantially in a form mutually agreed upon by the Company and the Underwriter.

(f) Officer's Certificate. The Underwriter shall have received on and as of the Closing Date or any Additional Closing Date, as the case may be, a certificate of an executive officer of the Company who has specific knowledge of the Company's financial matters in the form attached hereto as Exhibit E, (i) confirming that such officer has carefully reviewed the Registration Statement, the Pricing Disclosure Package, the Final Prospectus, each Issuer Free Writing Prospectus and each Written Testing-the-Waters Communication and, to the knowledge of such officer, the representations set forth in Sections 1(a)(ii), 1(b), 1(c)(i), 1(d)(i), 1(e)(i), 1(f)(ii) and 1(i) hereof are true and correct on and as of the Closing Date or any Additional Closing Date, as the case may be; (ii) to the effect set forth in clause (i) of Section 1(k) and Section 7(a)(i) hereof; and (iii) confirming that all of the representations and warranties of the Company in this Agreement are true and correct on and as of the Closing Date or any Additional Closing Date, as the case may be, and that the Company has complied with all agreements and covenants and satisfied all other conditions on its part to be performed or satisfied hereunder at or prior to the Closing Date or any Additional Closing Date, as the case may be.

(g) No Legal Impediment to Issuance and Sale. No action shall have been taken and no statute, rule, regulation or order shall have been enacted, adopted or issued by any federal, state or foreign governmental or regulatory authority that would, as of the Closing Date or any Additional Closing Date, as the case may be, prevent the issuance, sale or delivery of the Securities by the Company; and no injunction or order of any federal, state or foreign court shall have been issued that would, as of the Closing Date or any Additional Closing Date, as the case may be, prevent the issuance, sale or delivery of the Securities.

(h) Lock-Up Agreements. The Lock-Up Agreements executed by the executive officers, directors and Fortress Biotech, Inc., in the forms of Exhibit B, as applicable, shall have been delivered to the Underwriter on or before the date hereof, shall be in full force and effect on the Closing Date or any Additional Closing Date, as the case may be.

(i) Reserved.

(j) Exchange Listing. On the Closing Date or any Additional Closing Date, as the case may be, the Closing Shares, the Option Shares and the Underlying Shares shall have been approved for listing on the Exchange, subject to notice of issuance.

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(k) Good Standing. The Underwriter shall have received on and as of the Closing Date and any Additional Closing Date, as the case may be, satisfactory evidence of the good standing of the Company in its jurisdiction of organization and the State of New York, in each case, in writing from the appropriate governmental authorities of such jurisdictions.

(l) Additional Documents. On or prior to the Closing Date or any Additional Closing Date, as the case may be, the Underwriter and its counsel shall have received such information, certificates and other additional documents from the Company as they may reasonably require for the purpose of enabling them to pass upon the issuance and sale of the Securities as contemplated herein or in order to evidence the accuracy of any of the representations and warranties, or the satisfaction of any of the covenants, closing conditions or other obligations, contained in this Agreement.

All opinions, letters, certificates and other documents delivered pursuant to this Agreement will be deemed to be in compliance with the provisions hereof only if they are reasonably satisfactory in form and substance to counsel for the Underwriter.

If any condition specified in this Section 7 is not satisfied when and as required to be satisfied, this Agreement and all obligations of the Underwriter hereunder may be terminated by the Underwriter by notice to the Company at any time on or prior to the Closing Date or any Additional Closing Date, as the case may be, which termination shall be without liability on the part of any party to any other party, except that the Company shall continue to be liable for the payment of expenses under Section 6 and Section 11 hereof and except that the provisions of Section 8 and Section 9 hereof shall at all times be effective and shall survive any such termination.

## 8. Indemnification.

(a) Indemnification of the Underwriter by the Company. The Company agrees to indemnify and hold harmless the Underwriter, its Affiliates, directors, officers, employees and agents and each person, if any, who controls the Underwriter within the meaning of Section 15 of the Securities Act or Section 20 of the Exchange Act from and against any and all losses, claims, damages and liabilities (including, without limitation, all reasonable legal fees and other expenses incurred in connection with any suit, action or proceeding or any claim asserted, as such fees and expenses are incurred), joint or several, that arise out of or are based upon (i) any untrue statement or alleged untrue statement of a material fact contained in the Registration Statement (or any amendment or supplement thereto), or the omission or alleged

omission therefrom of a material fact required to be stated therein or necessary in order to make the statements therein not misleading, or (ii) any untrue statement or alleged untrue statement of a material fact contained in the Pricing Disclosure Package (including the Pricing Disclosure Package that has subsequently been amended), the Final Prospectus (or any amendment or supplement thereto), any Issuer Information, any Issuer Free Writing Prospectus, any Written Testing-the-Waters Communication or any Road Show, or the omission or alleged omission therefrom of a material fact necessary in order to make the statements therein, in the light of the circumstances under which they were made, not misleading, in each case, except insofar as such losses, claims, damages or liabilities arise out of, or are based upon, any untrue statement or omission or alleged untrue statement or omission made in reliance upon and in conformity with the Underwriter Information. The indemnity agreement set forth in this Section 8(a) shall be in addition to any liabilities that the Company may otherwise have.

(b) Indemnification of the Company by the Underwriter. The Underwriter agrees to indemnify and hold harmless the Company, its directors, each officer who signed the Registration Statement and each person, if any, who controls the Company within the meaning of Section 15 of the Securities Act or Section 20 of the Exchange Act from and against any and all losses, claims, damages and liabilities (including, without limitation, all reasonable legal fees and other expenses incurred in connection with any suit, action or proceeding or any claim asserted, as such fees and expenses are incurred), joint or several, to the same extent as the indemnity set forth in Section 8(a) hereof; provided, however, that the Underwriter shall be liable only to the extent that any untrue statement or omission or alleged untrue statement or omission was made in the Registration Statement (or any amendment or supplement thereto), the Pricing Disclosure Package (including the Pricing Disclosure Package that has subsequently been amended), the Final Prospectus (or any amendment or supplement thereto), any Issuer Information, any Issuer Free Writing Prospectus, any Written Testing-the-Waters Communication or any Road Show in reliance upon, and in conformity with, the Underwriter Information relating to the Underwriter. The indemnity agreement set forth in this Section 8(d) shall be in addition to any liabilities that the Underwriter may otherwise have.

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(c) Notifications and Other Indemnification Procedures. If any suit, action, proceeding (including any governmental or regulatory investigation), claim or demand shall be brought or asserted against any person in respect of which indemnification may be sought pursuant to any of the preceding subsections of this Section 8, such person (the "Indemnified Person") shall promptly notify the person against whom such indemnification may be sought (the "Indemnifying Person") in writing; provided that the failure to notify the Indemnifying Person shall not relieve it from any liability that it may have under any of the preceding subsections of this Section 8 except to the extent that it has been materially prejudiced by such failure; and provided, further, that the failure to notify the Indemnifying Person shall not relieve it from any liability that it may have to an Indemnified Person otherwise than under any of the preceding subsections of this Section 8. If any such proceeding shall be brought or asserted against an Indemnified Person and it shall have notified the Indemnifying Person thereof, the Indemnifying Person shall retain counsel reasonably satisfactory to the Indemnified Person (who shall not, without the consent of the Indemnified Person, be counsel to the Indemnifying Person) to represent the Indemnified Person in such proceeding and shall pay the reasonable and documented fees and expenses of such counsel related to such proceeding, as incurred. In any such proceeding, any Indemnified Person shall have the right to retain its own counsel, but the fees and expenses of such counsel shall be at the expense of such Indemnified Person unless (i) the Indemnifying Person and the Indemnified Person shall have mutually agreed to the contrary; (ii) the Indemnifying Person has failed within a reasonable time to retain counsel reasonably satisfactory to the Indemnified Person; (iii) the Indemnified Person shall have reasonably concluded that there may be legal defenses available to it that are different from or in addition to those available to the Indemnifying Person; or (iv) the named parties in any such proceeding (including any impleaded parties) include both the Indemnifying Person and the Indemnified Person and representation of both parties by the same counsel would be inappropriate due to actual or potential differing interest between them. It is understood and agreed that the Indemnifying Person shall not, in connection with any proceeding or related proceedings in the same jurisdiction, be liable for the fees and expenses of more than one separate firm (in addition to any local counsel) for all Indemnified Persons, and that all such fees and expenses shall be paid or reimbursed as they are incurred. Any such separate firm for (i) the Underwriter, its Affiliates, directors, officers, employees and agents and each person, if any, who controls the Underwriter within the meaning of Section 15 of the Securities Act or Section 20 of the Exchange Act shall be designated in writing by the Underwriter; and (ii) the Company, its directors, its officers who signed the Registration Statement and each person, if any, who controls the Company within the meaning of Section 15 of the Securities Act or Section 20 of the Exchange Act shall be designated in writing by the Company.

(d) Settlements. The Indemnifying Person under this Section 8 shall not be liable for any settlement of any proceeding effected without its written consent, which consent may not be unreasonably withheld, but if settled with such consent or if there be a final judgment for the plaintiff, the Indemnifying Person agrees to indemnify the Indemnified Person from and against any loss, claim, damage, liability or expense by reason of such settlement or judgment. Notwithstanding the foregoing sentence, if at any time an Indemnified Person shall have requested an Indemnifying Person to reimburse the Indemnified Person for any reasonably incurred and documented fees and expenses of counsel as contemplated by this Section 8, the Indemnifying Person agrees that it shall be liable for any settlement of any proceeding effected without its written consent if (i) such settlement is entered into more than 45 days after receipt by such Indemnifying Person of the aforesaid request, (ii) such Indemnifying Person shall not have reimbursed the Indemnified Person in accordance with such request, or shall not have disputed in good faith the Indemnified Person's entitlement to such reimbursement, prior to the date of such settlement and (iii) such Indemnified Person shall have given the Indemnifying Person at least 45 days' prior notice of its intention to settle. No Indemnifying Person shall, without the prior written consent of the Indemnified Person, effect any settlement, compromise or consent to the entry of judgment in any pending or threatened action, suit or proceeding in respect of which any Indemnified Person is or could have been a party and indemnity was or could have been sought hereunder by such Indemnified Person, unless such settlement, compromise or consent (x) includes an unconditional release of such Indemnified Person, in form and substance reasonably satisfactory to such Indemnified Person, from and against all liability on claims that are the subject matter of such action, suit or proceeding and (y) does not include any statements as to or any findings of fault, culpability or failure to act by or on behalf of any Indemnified Person.

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9. Contribution. To the extent the indemnification provided for in Section 8 hereof is unavailable to or insufficient to hold harmless an Indemnified Person in respect of any losses, claims, damages, liabilities or expenses referred to therein, then each Indemnifying Person, in lieu of indemnifying such Indemnified Person thereunder, shall contribute to the aggregate amount paid or payable by such Indemnified Person, as incurred, as a result of any losses, claims, damages, liabilities or expenses referred to therein (i) in such proportion as is appropriate to reflect the relative benefits received by the Company, on the one hand, and the Underwriter, on the other hand, from the offering of the Securities pursuant to this Agreement or (ii) if the allocation provided by clause (i) above is not permitted by applicable law, in such proportion as is appropriate to reflect not only the relative benefits referred to in clause (i) above but also the relative fault of the Company, on the one hand, and the Underwriter, on the other hand, in connection with the statements or omissions that resulted in such losses, claims, damages, liabilities or expenses, as well as any other relevant equitable considerations. The relative benefits received by the Company, on the one hand, and the Underwriter, on the other hand, in connection with the offering of the Securities pursuant to this Agreement shall be deemed to be in the same respective proportions as the total net proceeds from the offering of the Securities pursuant to this Agreement (before deducting expenses) received by the Company, on the one hand, and the total underwriting discounts and commissions received by the Underwriter, on the other hand, in each case as set forth in the table on the cover of the Final Prospectus bear to the aggregate initial offering price of the Securities. The relative fault of the Company, on the one hand, and the Underwriter, on the other hand, shall be determined by reference to, among other things, whether the untrue or alleged untrue statement of a material fact or omission or alleged omission to state a material fact relates to information supplied by the Company, on the one hand, or the Underwriter, on the other hand, and the parties' relative intent, knowledge, access to information and opportunity to correct or prevent such statement or omission.

The amount paid or payable by a party as a result of the losses, claims, damages, liabilities and expenses referred to above shall be deemed to include, subject to the limitations set forth in Section 8 hereof, all reasonable legal or other fees or expenses incurred by such party in connection with investigating or defending any action or claim. The provisions set forth in Section 8 hereof with respect to notice of commencement of any action shall apply if a claim for contribution is to be made under this

Section 9; provided, however, that no additional notice shall be required with respect to any action for which notice has been given under Section 8 hereof for purposes of indemnification.

The Company and the Underwriter agree that it would not be just and equitable if contribution pursuant to this Section 9 were determined by pro rata allocation or by any other method of allocation which does not take account of the equitable considerations referred to in this Section 9.

Notwithstanding the provisions of this Section 9, the Underwriter shall not be required to contribute any amount in excess of the amount by which the total discounts and commissions received by the Underwriter in connection with the Securities distributed by it exceeds the amount of any damages the Underwriter has otherwise paid or become liable to pay by reason of any untrue or alleged untrue statement or omission or alleged omission. No person guilty of fraudulent misrepresentation (within the meaning of Section 11 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 9, each director, officer, employee and agent of the Underwriter and each person, if any, who controls the Underwriter within the meaning of Section 15 of the Securities Act or Section 20 of the Exchange Act shall have the same rights to contribution as the Underwriter, and each director and officer of the Company who signed the Registration Statement, and each person, if any, who controls the Company with the meaning of Section 15 of the Securities Act or Section 20 of the Exchange Act, shall have the same rights to contribution as the Company.

The remedies provided for in Section 8 and Section 9 hereof are not exclusive and shall not limit any rights or remedies which may otherwise be available to any Indemnified Person at law or in equity.

10. Termination. Prior to the delivery of and payment for the Securities on the Closing Date or any Additional Closing Date, as the case may be, this Agreement may be terminated by the Underwriter in the absolute discretion of the Underwriter by notice given to the Company if after the execution and delivery of this Agreement: (i) trading or quotation of any securities issued or guaranteed by the Company shall have been suspended or materially limited on any securities exchange, quotation system or in the over-the-counter market; (ii) trading in securities generally on any of the New York Stock Exchange or Nasdaq shall have been suspended or materially limited; (iii) a general banking moratorium on commercial banking activities shall have been declared by federal or New York state authorities; (iv) there shall have occurred a material disruption in commercial banking or securities settlement, payment or clearance services in the United States; (v) there shall have occurred any outbreak or escalation of national or international hostilities involving the United States or any crisis or calamity, or any change in the United States financial markets that in the reasonable judgment of the Underwriter is material and adverse and makes it impracticable or inadvisable to proceed with the offering, sale or delivery of the Securities on the Closing Date or any Additional Closing Date, as the case may be, in the manner and on the terms described in the Pricing Disclosure Package or to enforce contracts for the sale of securities; or (vi) the Company or any of its subsidiaries shall have sustained a loss by strike, fire, flood, earthquake, accident or other calamity of such character as in the judgment of the Underwriter may interfere materially with the conduct of the business and operations of the Company and its subsidiaries, considered as one entity, regardless of whether or not such loss shall have been insured.

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Any termination pursuant to this Section 10 shall be without liability on the part of: (x) the Company to the Underwriter, except that the Company shall continue to be liable for the payment of expenses under Section 11; and (y) the Underwriter to the Company; or (z) any party hereto to any other party except that the provisions of Section 8 and Section 9 hereof shall at all times be effective and shall survive any such termination. In the event this Agreement is terminated pursuant to this Section 10, the Underwriter shall be entitled to compensation at the percentage set forth in Schedule II hereto with respect to any public or private offering or other financing or capital raising transaction of any kind ("Tail Financing") to the extent that such financing or capital is provided to the Company by investors introduced to the Company by the Underwriter during the six-month period beginning June 9, 2022, if such Tail Financing is consummated at any time within the five (5) month period following termination of this Agreement.

11. Reimbursement of the Underwriter's Expenses. If (a) the Company fails to deliver the Securities to the Underwriter for any reason at the Closing Date or any Additional Closing Date, as the case may be, in accordance with this Agreement or (b) the Underwriter declines to purchase the Securities for any reason permitted under this Agreement, then the Company agrees to reimburse the Underwriter for all reasonable out-of-pocket costs and expenses (including the reasonable and documented fees and expenses of counsel to the Underwriter) incurred by the Underwriter in connection with this Agreement and the applicable offering contemplated hereby in an amount not to exceed \$25,000.

12. Representations and Indemnities to Survive Delivery. The respective indemnities, rights of contribution, agreements, representations, warranties and other statements of the Company and the Underwriter set forth in or made pursuant to this Agreement or made by or on behalf of the Company or the Underwriter pursuant to this Agreement or any certificate delivered pursuant hereto shall remain in full force and effect, regardless of any investigation made by or on behalf of the Underwriter, the Company or any of their respective officers or directors or any controlling person, as the case may be, and shall survive delivery of and payment for the Securities sold hereunder and any termination of this Agreement.

13. Notices. All notices, requests, consents, claims, demands, waivers and other communications under this Agreement shall be in writing and shall be deemed to have been duly given (i) when delivered by hand (with written confirmation of receipt), (ii) when received by the addressee if sent by a nationally recognized overnight courier (receipt requested), (iii) on the date sent by email of a PDF document (with confirmation of receipt from the intended recipient by return email or other written acknowledgment), or (iv) on the third day after the date mailed, by certified or registered mail (in each case, return receipt requested, postage pre-paid). Such communications must be sent to the respective parties at the following addresses (or at such other address for a party as shall be specified in a notice given in accordance with this Section 13):

If to the Underwriter: Aegis Capital Corp.  
1345 Avenue of the Americas  
27th Floor  
New York, NY 10105  
Email Address: reide@aegiscap.com  
Attention: Robert Eide

with a copy to  
(which shall not constitute notice): Kaufman & Canoles, P.C.  
Two James Center  
1021 East Cary Street, Suite 1400  
Richmond, VA 23219  
Email: awbasch@kaufcan.com  
Attention: Anthony W. Basch

If to the Company: Avenue Therapeutics, Inc.  
2 Gansevoort Street, 9<sup>th</sup> Floor  
New York, NY 10014  
Email: AMacLean@fortressbiotech.com  
Attention: Alexandra MacLean, M.D.



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

McGuireWoods LLP  
201 N. Tryon Street, Suite 3000  
Charlotte, NC 28226  
Email: rgopalan@mcguirewoods.com  
Attention: Rakesh Gopalan

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Any party hereto may change the address for receipt of communications by giving written notice to the others in accordance with this Section 13.

14. Successors. This Agreement shall inure solely to the benefit of and be binding upon the Underwriter, the Company and the other indemnified parties referred to in Section 8 and Section 9 hereof, and in each case their respective successors. Nothing in this Agreement is intended, or shall be construed, to give any other person or entity any legal or equitable right, benefit, remedy or claim under, or in respect of or by virtue of, this Agreement or any provision contained herein. The term "successors," as used herein, shall not include any purchaser of the Securities from the Underwriter merely by reason of such purchase.

15. Equitable Remedies. Each party to this Agreement acknowledges and agrees that (a) a breach or threatened breach by the Company of any of its obligations under Section 4(j) or Section 4(o) would give rise to irreparable harm to the Underwriter for which monetary damages would not be an adequate remedy and (b) if a breach or a threatened breach by the Company of any such obligations occurs, the Underwriter will, in addition to any and all other rights and remedies that may be available to such party at law, at equity, or otherwise in respect of such breach, be entitled to equitable relief, including a temporary restraining order, an injunction, specific performance of the terms of Sections 4(j), and any other relief that may be available from a court of competent jurisdiction, without any requirement to (i) post a bond or other security, or (ii) prove actual damages or that monetary damages will not afford an adequate remedy. Each party to this Agreement agrees that such party shall not oppose or otherwise challenge the existence of irreparable harm, the appropriateness of equitable relief or the entry by a court of competent jurisdiction of an order granting equitable relief, in either case, consistent with the terms of this Section 15.

16. Severability. The invalidity or unenforceability of any Section, paragraph or provision of this Agreement shall not affect the validity or enforceability of any other Section, paragraph or provision hereof. If any Section, paragraph or provision of this Agreement is for any reason determined to be invalid or unenforceable, there shall be deemed to be made such minor changes (and only such minor changes) as are necessary to make it valid and enforceable.

17. Governing Law. This Agreement shall be governed by and construed in accordance with the law of the State of New York.

18. Consent to Jurisdiction. No legal suit, action or proceeding arising out of or relating to this Agreement or the transactions contemplated hereby (each, a "**Related Proceeding**") may be commenced, prosecuted or continued in any court other than the courts of the State of New York located in the City of New York, Borough of Manhattan, or in the United States District Court for the Southern District of New York, which courts (collectively, the "**Specified Courts**") shall have jurisdiction over the adjudication of any Related Proceeding, and the parties to this Agreement hereby irrevocably consent to the exclusive jurisdiction the Specified Courts and personal service of process with respect thereto. The parties to this Agreement hereby irrevocably waive any objection to the laying of venue of any Related Proceeding in the Specified Courts and irrevocably waive and agree not to plead or claim in any Specified Court that any Related Proceeding brought in any Specified Court has been brought in an inconvenient forum.

19. Waiver of Jury Trial. The parties to this Agreement hereby irrevocably waive, to the fullest extent permitted by applicable law, any and all right to trial by jury in any Related Proceeding.

20. No Fiduciary Relationship. The Company acknowledges and agrees that: (i) the purchase and sale of the Securities pursuant to this Agreement, including the determination of the offering price of the Securities and any related discounts and commissions, is an arm's-length commercial transaction between the Company, on the one hand, and the Underwriter, on the other hand; (ii) in connection with each transaction contemplated hereby and the process leading to such transaction the Underwriter is and has been acting solely as a principal and is not the agent or fiduciary of the Company or its Affiliates, stockholders, members, partners, creditors or employees or any other party; (iii) no Underwriter has assumed or will assume an advisory or fiduciary responsibility in favor of the Company with respect to any of the transactions contemplated hereby or the process leading thereto (irrespective of whether the Underwriter has advised or is currently advising the Company on other matters) or any other obligation to the Company except the obligations expressly set forth in this Agreement; (iv) the Underwriter and its respective Affiliates may be engaged in a broad range of transactions that involve interests that differ from those of the Company, and the Underwriter has no obligation to disclose any of such interests by virtue of any fiduciary or advisory relationship; and (v) the Underwriter has not provided any legal, accounting, regulatory or tax advice in any jurisdiction with respect to the offering contemplated hereby, and the Company has consulted its own legal, accounting, regulatory and tax advisors to the extent they deemed appropriate. The Company waives and releases, to the full extent permitted by applicable law, any claims it may have against the Underwriter arising from an alleged breach of fiduciary duty in connection with the offering of the Securities or any matters leading up to the offering of the Securities.

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21. Compliance with the USA Patriot Act. In accordance with the requirements of the USA Patriot Act (Title III of Pub. L. 107-56), the Underwriter is required to obtain, verify and record information that identifies its clients, including the Company, which information may include the name and address of its clients, as well as other information that will allow the Underwriter to properly identify its respective clients.

22. Entire Agreement. This Agreement, together with the other agreements and documents being delivered pursuant to or in connection with this Agreement, represent the entire agreement among the Company and the Underwriter with respect to the preparation of the Registration Statement, the Pricing Disclosure Package, the Final Prospectus, each Preliminary Prospectus, each Issuer Free Writing Prospectus, each Testing-the-Waters Communication, the purchase and sale of the Securities and the conduct of the offering contemplated hereby and supersede all prior agreements and understandings of the parties, oral and written, with respect to the subject matter hereof, including, without limitation, the engagement letter between the Company and the Underwriter dated June 9, 2022.

23. Amendments or Waivers. No amendment or waiver of any provision of this Agreement, nor any consent or approval to any departure therefrom, shall in any event be effective unless the same shall be in writing and signed by all the parties hereto. No waiver by any party shall operate or be construed as a waiver in respect of any failure, breach or default not expressly identified by such written waiver, whether of a similar or different character, and whether occurring before or after the waiver. No failure to exercise, or delay in exercising, any right, remedy, power or privilege arising from this Agreement shall operate or be construed as a waiver thereof; nor shall any single or partial exercise of any right, remedy, power or privilege hereunder preclude any other or further exercise of any other right, remedy, power or privilege.

24. Section Headings. The headings herein are included for convenience of reference only and are not intended to be part of, or to affect the meaning or interpretation of, this Agreement.

25. Counterparts. This Agreement may be executed in counterparts, each of which will be deemed an original, but all of which together will be deemed to be one and the same agreement. Counterparts may be delivered via email (including PDF or any electronic signature complying with the U.S. federal E-SIGN Act of 2000) or other transmission method, and any counterpart so delivered will be deemed to have been duly and validly delivered and be valid and effective for all purposes.

If the foregoing is in accordance with your understanding, please indicate your acceptance of this Agreement by signing in the space provided below.

Very truly yours,

**AVENUE THERAPEUTICS, INC.**

By: /s/ Alexandra MacLean  
 Name: Alexandra MacLean, M.D.  
 Title: Chief Executive Officer

Confirmed and agreed as of the date first above written:

**AEGIS CAPITAL CORP.**

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

**SCHEDULE I**

**Underwriter**

<b>Underwriter</b>	<b>Number of Closing Units to Be Purchased</b>	<b>Number of Option Securities to Be Purchased if the Maximum Over-Allotment Option Is Exercised</b>
Aegis Capital Corp.	Closing Common Units: 2,652,065 Closing Pre-funded Units: 984,300	Option Shares: 545,454 Option Warrants: 545,454
<b>Total:</b>	3,636,365	545,454

**SCHEDULE II**

**Pricing Disclosure Package**

Number of Closing Units:	3,636,365
• Number of Closing Common Units	2,652,065
• Number of Closing Pre-funded Units	984,300
Number of Option Shares and/or Pre-funded Warrants:	545,454
Number of Option Warrants:	545,454
Public Offering Price per Closing Unit:	\$ 3.3000
Public Offering Price per Closing Pre-funded Unit:	\$ 3.2999
Exercise Price per Pre-Funded Warrant:	\$ 0.0001
Exercise Price per Warrant per whole share:	\$ 3.3000
Public Price per Option Share:	\$ 3.2900
Public Price per Option Pre-Funded Warrant:	\$ 3.2899
Public Price per Option Warrant:	\$ 0.01
Underwriting Discount per Closing Unit:	\$ 0.2805
Underwriting Discount per Closing Pre-funded Unit:	\$ 0.2805
Underwriting Discount per Option Share and/or Pre-funded Warrant:	\$ 0.2805
Underwriting Discount per Option Warrant:	-
Non-accountable expense allowance per Closing Unit:	\$ 0.0330
Non-accountable expense allowance per Closing Pre-funded Unit:	\$ 0.0330
Non-accountable expense allowance per Option Share:	\$ 0.0330

**SCHEDULE III**

**Subsidiaries**

**Subsidiary**

**Jurisdiction of Organization**

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**EXHIBIT A****Form of Pre-Funded Warrant**

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**EXHIBIT B****Form of Lock-Up Agreement**

\_\_\_\_\_, 2022

Aegis Capital Corp.  
1345 Avenue of the Americas, 27th Floor  
New York, NY 10105

Ladies and Gentlemen:

The undersigned understands that Aegis Capital Corp. (the “**Underwriter**”), proposes to enter into an Underwriting Agreement (the “**Underwriting Agreement**”) with Avenue Therapeutics, Inc., a Delaware corporation (the “**Company**”), providing for the public offering (the “**Public Offering**”) of the Company’s securities.

To induce the Underwriter to continue its efforts in connection with the Public Offering, the undersigned hereby agrees that, without the prior written consent of the Underwriter, the undersigned will not, during the period commencing on the date hereof and ending ninety (90) days after the effective date of the Registration Statement relating to the Public Offering (the “**Lock-Up Period**”), (1) offer, pledge, sell, contract to sell, grant, lend, or otherwise transfer or dispose of, directly or indirectly, any shares of Common Stock of the Company, par value \$0.0001 per share (“**Common Stock**”) or any securities convertible into or exercisable or exchangeable for shares of Common Stock, whether now owned or hereafter acquired by the undersigned or with respect to which the undersigned has or hereafter acquires the power of disposition (collectively, the “**Lock-Up Securities**”); (2) enter into any swap or other arrangement that transfers to another, in whole or in part, any of the economic consequences of ownership of the Lock-Up Securities, whether any such transaction described in clause (1) or (2) above is to be settled by delivery of Lock-Up Securities, in cash or otherwise; (3) make any demand for or exercise any right with respect to the registration of the resale of any Lock-Up Securities; or (4) publicly disclose the intention to make any offer, sale, pledge or disposition, or to enter into any transaction, swap, hedge or other arrangement relating to any Lock-Up Securities.

Notwithstanding the foregoing, and subject to the conditions below, the undersigned may transfer Lock-Up Securities without the prior written consent of the Underwriter in connection with

- (a) transactions relating to Lock-Up Securities acquired in open market transactions after the completion of the Public Offering; provided that no filing under Section 13 or Section 16(a) of the Securities Exchange Act of 1934, as amended (the “**Exchange Act**”), or other public announcement shall be required or shall be voluntarily made in connection with subsequent sales of Lock-Up Securities acquired in such open market transactions;
- (b) transfers of Lock-Up Securities as a *bona fide* gift, by will or intestacy or to a family member or trust for the benefit of the undersigned (for purposes of this lock-up agreement, “family member” means any relationship by blood, marriage or adoption, not more remote than first cousin);
- (c) transfers of Lock-Up Securities to a charity or educational institution;
- (d) if the undersigned is a corporation, partnership, limited liability company or other business entity, (i) any transfers of Lock-Up Securities to another corporation, partnership or other business entity that controls, is controlled by or is under common control with the undersigned or (ii) distributions of Lock-Up Securities to members, partners, stockholders, subsidiaries or affiliates (as defined in Rule 405 promulgated under the Securities Act of 1933, as amended) of the undersigned;
- (e) if the undersigned is a trust, to a trustee or beneficiary of the trust; provided that in the case of any transfer pursuant to the foregoing clauses (b), (c) (d) or (e), (i) any such transfer shall not involve a disposition for value, (ii) each transferee shall sign and deliver to the Underwriter a lock-up agreement substantially in the form of this agreement and (iii) no filing under Section 13 or Section 16(a) of the Exchange Act or other public announcement shall be required or shall be voluntarily made during the Lock-Up Period;

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- (f) the receipt by the undersigned from the Company of shares of Common Stock upon the vesting of restricted stock awards or stock units or upon the exercise of options to purchase the Company’s shares of Common Stock issued under an equity incentive plan of the Company or an employment arrangement described in the Pricing Prospectus (as defined in the Underwriting Agreement) (the “**Plan Shares**”) or the transfer or withholding of shares of Common Stock or any securities convertible into shares of Common Stock to the Company upon a vesting event of the Company’s securities or upon the exercise of options to purchase the Company’s securities, in each case on a “cashless” or “net exercise” basis or to cover tax obligations of the undersigned in connection with such vesting or exercise, provided that if the undersigned is required to file a report under Section 13 or Section 16(a) of the Exchange Act reporting a reduction in beneficial ownership of shares of Common Stock during the Lock-Up Period, the undersigned shall include a statement in such schedule or report to the effect that the purpose of such transfer was to cover tax withholding obligations of the undersigned in connection with such vesting or exercise and, provided further, that the Plan Shares shall be subject to the terms of this agreement;
  - (g) the transfer of Lock-Up Securities pursuant to agreements described in the Pricing Prospectus under which the Company has the option to repurchase such securities or a right of first refusal with respect to the transfer of such securities, provided that if the undersigned is required to file a report under Section 13 or Section 16(a) of the Exchange Act reporting a reduction in beneficial ownership of shares of Common Stock during the Lock-Up Period, the undersigned shall include a statement in such schedule or report describing the purpose of the transaction;

- (h) the establishment of a trading plan pursuant to Rule 10b5-1 under the Exchange Act for the transfer of Lock-Up Securities, provided that (i) such plan does not provide for the transfer of Lock-Up Securities during the Lock-Up Period and (ii) to the extent a public announcement or filing under the Exchange Act, if any, is required of or voluntarily made by or on behalf of the undersigned or the Company regarding the establishment of such plan, such public announcement or filing shall include a statement to the effect that no transfer of Lock-Up Securities may be made under such plan during the Lock-Up Period;
- (i) the transfer of Lock-Up Securities that occurs by operation of law, such as pursuant to a qualified domestic order or in connection with a divorce settlement, provided that the transferee agrees to sign and deliver an agreement substantially in the form of this agreement for the balance of the Lock-Up Period, and provided further, that any filing under Section 13 or Section 16(a) of the Exchange Act that is required to be made during the Lock-Up Period as a result of such transfer shall include a statement that such transfer has occurred by operation of law; and
- (j) the transfer of Lock-Up Securities pursuant to a *bona fide* third party tender offer, merger, consolidation or other similar transaction made to all holders of shares of Common Stock involving a change of control (as defined below) of the Company after the closing of the Public Offering and approved by the Company's board of directors; provided that in the event that the tender offer, merger, consolidation or other such transaction is not completed, the Lock-Up Securities owned by the undersigned shall remain subject to the restrictions contained in this agreement. "Change of control" means the consummation of any *bona fide* third party tender offer, merger, amalgamation, consolidation or other similar transaction the result of which is that any "person" or "group" of persons (as defined in Section 13(d)(3) of the Exchange Act) becomes the beneficial owner (as defined in Rules 13d-3 and 13d- 5 of the Exchange Act) of a majority of total voting power of the voting stock of the Company.

The undersigned also agrees and consents to the entry of stop transfer instructions with the Company's transfer agent and registrar against the transfer of the undersigned's Lock-Up Securities except in compliance with this lock-up agreement.

If the undersigned is an officer or director of the Company, (i) the undersigned agrees that the foregoing restrictions shall be equally applicable to any issuer-directed or "friends and family" securities that the undersigned may purchase in the Public Offering; (ii) the Underwriter agrees that, at least three (3) Business Days before the effective date of any release or waiver of the foregoing restrictions in connection with a transfer of Lock-Up Securities, the Underwriter will notify the Company of the impending release or waiver; and (iii) the Company has agreed in the Underwriting Agreement to announce the impending release or waiver by press release through a major news service at least two (2) Business Days before the effective date of the release or waiver. Any release or waiver granted by the Underwriter hereunder to any such officer or director shall only be effective two (2) Business Days after the publication date of such press release. The provisions of this paragraph will not apply if (a) the release or waiver is effected solely to permit a transfer of Lock-Up Securities not for consideration and (b) the transferee has agreed in writing to be bound by the same terms described in this lock-up agreement to the extent and for the duration that such terms remain in effect at the time of such transfer.

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The undersigned understands that the Company and the Underwriter are relying upon this lock-up agreement in proceeding toward consummation of the Public Offering. The undersigned further understands that this agreement is irrevocable and shall be binding upon the undersigned's heirs, legal representatives, successors and assigns.

The undersigned understands that, if the Underwriting Agreement is not executed by October 31, 2022 or if the Underwriting Agreement (other than the provisions thereof which survive termination) shall terminate or be terminated prior to payment for and delivery of the shares of Common Stock to be sold thereunder, then this lock-up agreement shall be void and of no further force or effect.

Very truly yours,

(Name - Please Print)

\_\_\_\_\_  
 (Signature)

\_\_\_\_\_  
 (Name of Signatory, in the case of entities - Please Print)

\_\_\_\_\_  
 (Title of Signatory, in the case of entities - Please Print)

Address: \_\_\_\_\_  
 \_\_\_\_\_

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**EXHIBIT C**

**Form of Lock-Up Waiver**

[●], 2022

[NAME AND ADDRESS]

Re: Lock-Up Agreement Waiver

Ladies and Gentlemen:

[Pursuant to Section 4(j) of the Underwriting Agreement, dated [●], 2022 (the "*Underwriting Agreement*"), among Avenue Therapeutics, Inc., a Delaware corporation (the "*Company*"), and Aegis Capital Corp. (the "*Underwriter*"), and the Lock-Up Agreement, dated [●], 2022 (the "*Lock-Up Agreement*"), between you and the Underwriter

relating to the Company's shares of Common Stock (the "**Shares**"), the Underwriter hereby gives its consent to allow you to sell up to [●] Shares [solely from and including [●] to and including [●]].]

[Pursuant to Section 4(j) of the Underwriting Agreement, the Underwriter hereby gives its consent to allow the Company to issue and sell up to [●] Shares pursuant to an offering of the Shares to commence prior to the expiration of the Lock-Up Period as defined in the Underwriting Agreement[, provided that such offering closes on or prior to [●]].]

By: \_\_\_\_\_  
Name: Robert Eide  
Title: Chief Executive Officer

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**EXHIBIT D**

**Form of Lock-Up Waiver Press Release**

**AVENUE THERAPEUTICS, INC.**

[●], 202[●]

Avenue Therapeutics, Inc. (the "Company") announced today that Aegis Capital Corp., acting as Underwriter in the Company's recent public offering of the Company's shares of Common Stock, is [waiving] [releasing] a lock-up restriction with respect to the Company's shares of Common Stock held by [certain officers or directors] [an officer or director] of the Company. The [waiver] [release] will take effect on [●], and the shares may be sold on or after such date.

**This press release is not an offer or sale of the securities in the United States or in any other jurisdiction where such offer or sale is prohibited, and such securities may not be offered or sold in the United States absent registration or an exemption from registration under the Securities Act of 1933, as amended.**

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**EXHIBIT E**

**Form of Officer's Certificate**

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## COMMON STOCK PURCHASE WARRANT

## AVENUE THERAPEUTICS, INC.

Warrant Shares: [●]

Issuance Date: October 11, 2022

Initial Exercise Date: October 11, 2022

THIS COMMON STOCK PURCHASE WARRANT (the “Warrant”) certifies that Cede & Co. or its registered assigns (the “Holder”) is entitled, upon the terms and subject to the limitations on exercise and the conditions hereinafter set forth, at any time on or after the date hereof (the “Initial Exercise Date”) and on or prior to 5:00 p.m. (New York City time) on October 11, 2027 (the “Termination Date”) but not thereafter, to subscribe for and purchase from Avenue Therapeutics, Inc., a Delaware corporation (the “Company”), up [●] shares of Common Stock (as subject to adjustment hereunder, the “Warrant Shares”). The purchase price of one share of Common Stock under this Warrant shall be equal to the Exercise Price, as defined in Section 2(b). This Warrant shall initially be issued and maintained in the form of a security held in book-entry form and the Depository Trust Company or its nominee (“DTC”) shall initially be the sole registered holder of this Warrant, subject to a Holder’s right to elect to receive a Warrant in certificated form pursuant to the terms of the Warrant Agent Agreement, in which case this sentence shall not apply.

Section 1. Definitions. Capitalized terms used and not otherwise defined herein shall have the meanings set forth in that certain Underwriting Agreement dated October 6, 2022. In addition to the terms defined elsewhere in this Warrant, the following terms have the meanings indicated in this Section 1:

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

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

“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.

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

“Common Stock” means the common stock, par value \$0.0001 per share, of the Company, 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 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 shares of Common Stock, or otherwise entitles the holder thereof to receive, shares of Common Stock.

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

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

“Registration Statement” means the Company’s registration statement on Form S-1 (File No. 333-267206), as amended.

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

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

“Trading Day” means a day on which the shares of Common Stock are traded on a Trading Market.

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

“Transfer Agent” means VStock Transfer, LLC, and any successor transfer agent of the Company.

“Underwriting Agreement” means the underwriting agreement, dated as of October 6, 2022, between the Company and Aegis Capital Corp., as the underwriter named therein, as amended, modified or supplemented from time to time in accordance with its terms.

“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 or an “at-the-market offering”, 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.

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

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

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

“Warrants” means this Warrant and other common stock purchase warrants issued to investors by the Company pursuant to the Registration Statement.

## Section 2. Exercise.

a) Exercise of Warrant. Subject to the provisions of Section 2(e) herein, exercise of the purchase rights represented by this Warrant may be made, in whole or in part, at any time or times on or after the Initial Exercise Date and on or before the Termination Date, by delivery to the Company of a duly executed PDF copy submitted by e-mail (or e-mail attachment) of the Notice of Exercise in the form annexed hereto as Annex A (the “Notice of Exercise”), and, unless the cashless exercise procedure specified in Section 2(c) below is specified in the applicable Notice of Exercise, delivery within the Standard Settlement Period of the aggregate Exercise Price of the Warrant Shares specified in the applicable Notice of Exercise as specified in this Section 2(a). Within the earlier of (i) two (2) Trading Days and (ii) the number of Trading Days comprising the Standard Settlement Period (as defined in Section 2(d)(i) herein) following the date of Notice of Exercise as aforesaid, the Holder shall deliver the aggregate Exercise Price for the Warrant Shares specified in the applicable Notice of Exercise by wire transfer of immediately available funds or cashier’s check drawn on a United States bank unless the cashless exercise procedure specified in Section 2(c) below is specified in the applicable Notice of Exercise. No ink-original Notice of Exercise shall be required, nor shall any medallion guarantee (or other type of guarantee or notarization) of any Notice of Exercise be required. Notwithstanding anything herein to the contrary, the Holder shall not be required to physically surrender this Warrant to the Company until the Holder has purchased all of the Warrant Shares available hereunder and the Warrant has been exercised in full, in which case, the Holder shall surrender this Warrant to the Company for cancellation within three (3) Trading Days of the date on which the final Notice of Exercise is delivered to the Company. Partial exercises of this Warrant resulting in purchases of a portion of the total number of Warrant Shares available hereunder shall have the effect of lowering the outstanding number of Warrant Shares purchasable hereunder in an amount equal to the applicable number of Warrant Shares purchased. The Holder and the Company shall maintain records showing the number of Warrant Shares purchased and the date of such purchases. The Company shall deliver any objection to any Notice of Exercise within one (1) Trading Day of receipt of such notice. Notwithstanding the foregoing, with respect to any Notice(s) of Exercise delivered on or prior to 4:00 p.m. (New York City time) on the Trading Date prior to the Initial Exercise Date, which may be delivered at any time after the time of execution of the Underwriting Agreement, the Company agrees to deliver the Warrant Shares subject to such notice(s) by 4:00 p.m. (New York City time) on the Initial Exercise Date and the Initial Exercise Date shall be the Warrant Share Delivery Date for purposes hereunder, provided that payment of the aggregate Exercise Price (other than in the case of a cashless exercise) is received by such Warrant Share Delivery Date. **The Holder and any assignee, by acceptance of this Warrant, acknowledge and agree that, by reason of the provisions of this paragraph, following the purchase of a portion of the Warrant Shares hereunder, the number of Warrant Shares available for purchase hereunder at any given time may be less than the amount stated on the face hereof.**

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

b) Exercise Price. The exercise price per share of Common Stock under this Warrant shall be \$3.30 (the “Initial Exercise Price”), subject to adjustment hereunder (as in effect from time to time, the “Exercise Price”).

c) Cashless Exercise. The Company shall use commercially reasonable best efforts to cause the Registration Statement to remain effective with a current prospectus and to maintain the registration of the shares of Common Stock and of the Warrants under the Exchange Act. If at any time after the Initial Exercise Date, there is no effective registration statement registering, or no current prospectus available for the issuance of the Warrant Shares to the Holder, then this Warrant may also be exercised, in whole or in part, at such time by means of a “cashless exercise” in which the Holder shall be entitled to receive a number of Warrant Shares equal to the quotient obtained by dividing [(A-B) (X)] by (A), where:

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

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

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

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

Notwithstanding anything herein to the contrary, in the event that, on the Termination Date, there is no effective registration statement registering, or no current prospectus available for the issuance of, the Warrant Shares to the Holder, this Warrant shall be automatically exercised via cashless exercise pursuant to this Section 2(c) on such Termination Date.

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d) Mechanics of Exercise.

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

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

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

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

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

vi. Charges, Taxes and Expenses. Issuance of Warrant Shares shall be made without charge to the Holder for any issue or transfer tax or other incidental expense in respect of the issuance of such Warrant Shares, all of which taxes and expenses shall be paid by the Company, and such Warrant Shares shall be issued in the name of the Holder or in such name or names as may be directed by the Holder; provided, however, that, in the event that Warrant Shares are to be issued in a name other than the name of the Holder, this Warrant when surrendered for exercise shall be accompanied by the Assignment Form attached hereto as Annex B duly executed by the Holder and the Company may require, as a condition thereto, the payment of a



sum sufficient to reimburse it for any transfer tax incidental thereto. The Company shall pay all Transfer Agent fees required for same-day processing of any Notice of Exercise and all fees to the Depository Trust Company (or another established clearing corporation performing similar functions) required for same-day electronic delivery of the Warrant Shares.

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

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e) Holder's Exercise Limitations. The Company shall not effect any exercise of this Warrant, and a Holder shall not have the right to exercise any portion of this Warrant, pursuant to Section 2 or otherwise, to the extent that after giving effect to such issuance after exercise as set forth on the applicable Notice of Exercise, the Holder (together with the Holder's Affiliates, and any other Persons acting as a group together with the Holder or any of the Holder's Affiliates (such Persons, "Attribution Parties")), would beneficially own in excess of the Beneficial Ownership Limitation (as defined below). For purposes of the foregoing sentence, the number of shares of Common Stock beneficially owned by the Holder and its Affiliates and Attribution Parties shall include the number of shares of Common Stock issuable upon exercise of this Warrant with respect to which such determination is being made, but shall exclude the number of shares of Common Stock which would be issuable upon (i) exercise of the remaining, non-exercised portion of this Warrant beneficially owned by the Holder or any of its Affiliates or Attribution Parties and (ii) exercise or conversion of the unexercised or non-converted portion of any other securities of the Company (including, without limitation, any other shares of Common Stock Equivalents) subject to a limitation on conversion or exercise analogous to the limitation contained herein beneficially owned by the Holder or any of its Affiliates or Attribution Parties. Except as set forth in the preceding sentence, for purposes of this Section 2(e), beneficial ownership shall be calculated in accordance with Section 13(d) of the Exchange Act and the rules and regulations promulgated thereunder, it being acknowledged by the Holder that the Company is not representing to the Holder that such calculation is in compliance with Section 13(d) of the Exchange Act and the Holder is solely responsible for any schedules required to be filed in accordance therewith. To the extent that the limitation contained in this Section 2(e) applies, the determination of whether this Warrant is exercisable (in relation to other securities owned by the Holder together with any Affiliates and Attribution Parties) and of which portion of this Warrant is exercisable shall be in the sole discretion of the Holder, and the submission of a Notice of Exercise shall be deemed to be the Holder's determination of whether this Warrant is exercisable (in relation to other securities owned by the Holder together with any Affiliates and Attribution Parties) and of which portion of this Warrant is exercisable, in each case subject to the Beneficial Ownership Limitation, and the Company shall have no obligation to verify or confirm the accuracy of such determination. In addition, a determination as to any group status as contemplated above shall be determined in accordance with Section 13(d) of the Exchange Act and the rules and regulations promulgated thereunder. For purposes of this Section 2(e), in determining the number of outstanding shares of Common Stock, a Holder may rely on the number of outstanding shares of Common Stock as reflected in (A) the Company's most recent periodic or annual report filed with the Commission, as the case may be, (B) a more recent public announcement by the Company or (C) a more recent written notice by the Company or the Transfer Agent setting forth the number of shares of Common Stock outstanding. Upon the written or oral request of a Holder, the Company shall within one Trading Day confirm orally and in writing to the Holder the number of shares of Common Stock then outstanding. In any case, the number of outstanding shares of Common Stock shall be determined after giving effect to the conversion or exercise of securities of the Company, including this Warrant, by the Holder or its Affiliates or Attribution Parties since the date as of which such number of outstanding shares of Common Stock was reported. The "Beneficial Ownership Limitation" shall be 4.99% (or, upon election by a Holder prior to the issuance of any Warrants, 9.99%) of the number of shares of Common Stock outstanding immediately after giving effect to the issuance of shares of Common Stock issuable upon exercise of this Warrant. The Holder, upon notice to the Company, may increase or decrease the Beneficial Ownership Limitation provisions of this Section 2(e), provided that the Beneficial Ownership Limitation in no event exceeds 9.99% of the number of shares of Common Stock outstanding immediately after giving effect to the issuance of shares of Common Stock upon exercise of this Warrant held by the Holder and the provisions of this Section 2(e) shall continue to apply. Any increase in the Beneficial Ownership Limitation will not be effective until the 61<sup>st</sup> day after such notice is delivered to the Company. The provisions of this paragraph shall be construed and implemented in a manner otherwise than in strict conformity with the terms of this Section 2(e) to correct this paragraph (or any portion hereof) which may be defective or inconsistent with the intended Beneficial Ownership Limitation herein contained or to make changes or supplements necessary or desirable to properly give effect to such limitation. The limitations contained in this paragraph shall apply to a successor holder of this Warrant.

### Section 3. Certain Adjustments.

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

b) Subsequent Equity Sales. If the Company, while this Warrant is outstanding, shall sell, enter into an agreement to sell, or grant any option to purchase, or sell or grant any right to reprice, or otherwise dispose of or issue any Common Stock or Common Stock Equivalents (or announcing any offer, sale, grant or any option to purchase or other dispositions, provided such transaction occurs), at an effective price per share less than the Exercise Price then in effect (such lower price, the "Base Share Price" and such issuance collectively, a "Dilutive Issuance") (it being understood and agreed that if the holder of the Common Stock or Common Stock Equivalents so issued shall at any time, whether by operation of purchase price adjustments, reset provisions, floating conversion, exercise or exchange prices or otherwise, or due to warrants, options or rights per share which are issued in connection with such issuance, be entitled to receive shares of Common Stock at an effective price per share that is less than the Exercise Price, such issuance shall be deemed to have occurred for less than the Exercise Price on such date of the first Dilutive Issuance at such effective price), then simultaneously with the consummation of such first Dilutive Issuance, the Exercise Price shall be reduced and only reduced to equal the Base Share Price. There shall only be one such adjustment, if any, to the Exercise Price under this Section 3(b) while this Warrant is outstanding. Notwithstanding the foregoing, no adjustments shall be made, paid or issued under this Section 3(b) in respect of an Exempt Issuance. Exempt Issuance means the issuance of (x) shares of Common Stock or options to employees, officers, directors or consultants of the Company pursuant to any stock or option plan duly adopted for such purpose, by a majority of the non-employee members of the Board of Directors or a majority of the members of a committee of non-employee directors established for such purpose for services rendered to the Company, provided that such shares of Common Stock or other 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 ninety (90) days after the date of the Final Prospectus or (y) securities upon the exercise or exchange of or conversion of Warrants of this series and/or other securities exercisable or exchangeable for or convertible into shares of Common Stock issued and outstanding on the date of this Warrant, provided that such securities described in sections (x) and (y) above have not been amended since the date of the Underwriting 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. The Company shall notify the Holder, in writing, no later than the Trading Day following the issuance or deemed issuance of any shares of Common Stock or Common Stock Equivalents subject to this Section 3(b), indicating therein the applicable issuance price, or

applicable reset price, exchange price, conversion price and other pricing terms (such notice, the “Dilutive Issuance Notice”). For purposes of clarification, whether or not the Company provides a Dilutive Issuance Notice pursuant to this Section 3(b), upon the occurrence of any Dilutive Issuance, the Holder is entitled to receive a number of Warrant Shares based upon the Base Share Price regardless of whether the Holder accurately refers to the Base Share Price in the Notice of Exercise. If the Company enters into a Variable Rate Transaction, the Company shall be deemed to have issued Common Stock or Common Stock Equivalents at the lowest possible price, conversion price or exercise price at which such securities may be issued, converted or exercised.

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

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

e) Fundamental Transaction. If, at any time while this Warrant is outstanding, (i) the Company, directly or indirectly, in one or more related transactions effects any merger or consolidation of the Company with or into another Person, (ii) the Company or any Subsidiary, directly or indirectly, effects any sale, lease, license, assignment, transfer, conveyance or other disposition of all or substantially all of its assets in one or a series of related transactions, (iii) any, direct or indirect, purchase offer, tender offer or exchange offer (approved or recommended by the Board of Directors or a committee thereof) is completed pursuant to which holders of shares of Common Stock are permitted to sell, tender or exchange their shares for other securities, cash or property and has been accepted by the holders of 50% or more of the outstanding shares of Common Stock or 50% or more of the voting power of the common equity of the Company, (iv) the Company, directly or indirectly, in one or more related transactions effects any reclassification, reorganization or recapitalization of shares of Common Stock or any compulsory share exchange pursuant to which the shares of Common Stock are effectively converted into or exchanged for other securities, cash or property, or (v) the Company, directly or indirectly, in one or more related transactions consummates a stock or share purchase agreement or other business combination (including, without limitation, a reorganization, recapitalization, spin-off, merger or scheme of arrangement) with another Person or group of Persons whereby such other Person or group acquires more than 50% of the outstanding shares of Common Stock or 50% or more of the voting power of the common equity in the Company (each a “Fundamental Transaction”), then, upon any subsequent exercise of this Warrant, the Holder shall have the right to receive, for each Warrant Share that would have been issuable upon such exercise immediately prior to the occurrence of such Fundamental Transaction, at the option of the Holder (without regard to any limitation in Section 2(e) on the exercise of this Warrant), the number of shares of Common Stock of the successor or acquiring corporation or of the Company, if it is the surviving corporation, and any additional consideration (together, the “Alternate Consideration”) receivable as a result of such Fundamental Transaction by a holder of the number of shares of Common Stock for which this Warrant is exercisable immediately prior to such Fundamental Transaction (without regard to any limitation in Section 2(e) on the exercise of this Warrant). For purposes of any such exercise, the determination of the Exercise Price shall be appropriately adjusted to apply to such Alternate Consideration based on the amount of Alternate Consideration issuable in respect of one share of Common Stock in such Fundamental Transaction, and the Company shall apportion the Exercise Price among the Alternate Consideration in a reasonable manner reflecting the relative value of any different components of the Alternate Consideration. If holders of shares of Common Stock are given any choice as to the securities, cash or property to be received in a Fundamental Transaction, then the Holder shall be given the same choice as to the Alternate Consideration it receives upon any exercise of this Warrant following such Fundamental Transaction.

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Notwithstanding anything to the contrary, in the event of a Fundamental Transaction, the Company or any Successor Entity (as defined below) shall, at the Holder’s option, exercisable at any time concurrently with, or within 30 days after, the consummation of the Fundamental Transaction (or, if later, the date of the public announcement of the applicable Fundamental Transaction), purchase this Warrant from the Holder by paying to the Holder an amount of cash equal to the Black Scholes Value (as defined below) of the remaining unexercised portion of this Warrant on the date of the consummation of such Fundamental Transaction; provided, however, that, if the Fundamental Transaction is not within the Company’s control, including not approved by the Company’s Board of Directors, Holder shall only be entitled to receive from the Company or any Successor Entity the same type or form of consideration (and in the same proportion), at the Black Scholes Value of the unexercised portion of this Warrant, that is being offered and paid to the holders of shares of Common Stock of the Company in connection with the Fundamental Transaction, whether that consideration be in the form of cash, stock or any combination thereof, or whether the holders of shares of Common Stock are given the choice to receive from among alternative forms of consideration in connection with the Fundamental Transaction; provided, further, that if holders of shares of Common Stock of the Company are not offered or paid any consideration in such Fundamental Transaction, such holders will be deemed to have received shares of Common Stock of the Successor Entity (which Entity may be the Company following such Fundamental Transaction) in such Fundamental Transaction.

“Black Scholes Value” means the value of this Warrant based on the Black-Scholes Option Pricing Model obtained from the “OV” function on Bloomberg determined as of the day of consummation of the applicable Fundamental Transaction for pricing purposes and reflecting (A) a risk-free interest rate corresponding to the U.S. Treasury rate for a period equal to the time between the date of the public announcement of the applicable Fundamental Transaction and the Termination Date, (B) an expected volatility equal to the greater of 100% and the 100 day volatility obtained from the “HVT” function on Bloomberg (determined utilizing a 365 day annualization factor) as of the Trading Day immediately following the public announcement of the applicable Fundamental Transaction, (C) the underlying price per share used in such calculation shall be the greater of (i) the sum of the price per share being offered in cash, if any, plus the value of any non-cash consideration, if any, being offered in such Fundamental Transaction and (ii) the highest VWAP during the period beginning on the Trading Day immediately preceding the announcement of the applicable Fundamental Transaction (or the consummation of the applicable Fundamental Transaction, if earlier) and ending on the Trading Day of the Holder’s request pursuant to this Section 3(e) and (D) a remaining option time equal to the time between the date of the public announcement of the applicable Fundamental Transaction and the Termination Date and (E) a zero cost of borrow. The payment of the Black Scholes Value will be made by wire transfer of immediately available

funds (or such other consideration) within the later of (i) five (5) Business Days of the Holder's election and (ii) the date of consummation of the Fundamental Transaction.

The Company shall cause any successor entity in a Fundamental Transaction in which the Company is not the survivor (the "Successor Entity") to assume in writing all of the obligations of the Company under this Warrant in accordance with the provisions of this Section 3(e) pursuant to written agreements in form and substance reasonably satisfactory to the Holder and approved by the Holder (without unreasonable delay) prior to such Fundamental Transaction and shall, at the option of the Holder, deliver to the Holder in exchange for this Warrant a security of the Successor Entity evidenced by a written instrument substantially similar in form and substance to this Warrant which is exercisable for a corresponding number of shares of capital stock of such Successor Entity (or its parent entity) equivalent to the shares of Common Stock acquirable and receivable upon exercise of this Warrant (without regard to any limitations on the exercise of this Warrant) prior to such Fundamental Transaction, and with an exercise price which applies the exercise price hereunder to such shares of capital stock (but taking into account the relative value of the shares of Common Stock pursuant to such Fundamental Transaction and the value of such shares of capital stock, such number of shares of capital stock and such exercise price being for the purpose of protecting the economic value of this Warrant immediately prior to the consummation of such Fundamental Transaction), and which is reasonably satisfactory in form and substance to the Holder. Upon the occurrence of any such Fundamental Transaction, the Successor Entity shall be added to the term "Company" under this Warrant (so that from and after the occurrence or consummation of such Fundamental Transaction, each and every provision of this Warrant and the other Transaction Documents referring to the "Company" shall refer instead to each of the Company and the Successor Entity or Successor Entities, jointly and severally), and the Successor Entity or Successor Entities, jointly and severally with the Company may exercise every right and power of the Company prior thereto and the Successor Entity or Successor Entities shall assume all of the obligations of the Company prior thereto under this Warrant and the other Transaction Documents with the same effect as if the Company and such Successor Entity or Successor Entities, jointly and severally, had been named as the Company herein. For the avoidance of doubt, the Holder shall be entitled to the benefits of the provisions of this Section 3(e) regardless of (i) whether the Company has sufficient authorized shares of Common Stock for the issuance of Warrant Shares and/or (ii) whether a Fundamental Transaction occurs prior to the Initial Exercise Date.

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

g) Notice to Holder.

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

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

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h) Voluntary Adjustment by Company. Subject to the rules and regulations of the Trading Market, the Company may at any time during the term of this Warrant, subject to the prior written consent of the Holder, reduce the then current Exercise Price to any amount and for any period of time deemed appropriate by the board of directors of the Company.

#### Section 4. Transfer of Warrant.

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

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

number of Warrant Shares issuable pursuant thereto.

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

#### Section 5. Miscellaneous.

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

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

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

#### d) Authorized Shares.

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

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

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

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

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

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

h) Notices. Any and all notices or other communications or deliveries to be provided by the Holders hereunder including, without limitation, any Notice of Exercise, shall be in writing and delivered personally, by e-mail, or sent by a nationally recognized overnight courier service, addressed to (A) the Company, at 2 Gansevoort Street, 9<sup>th</sup> Floor, New York, NY 10014, Attention: Chief Operating Officer, email address: djin@fortressbiotech.com, or such other email address or address as the Company may specify for such purposes by notice to the Holders; and (B) the Warrant Agent, at VStock Transfer, LLC, 18 Lafayette Pl., Woodmere, NY 11598, Attention: Transaction Processing Dept., email address: info@vstocktransfer.com. Any and all notices or other communications or deliveries to be provided by the Company hereunder shall be in writing and delivered personally, by e-mail, or sent by a nationally recognized overnight courier service addressed to each Holder at the e-mail address or address of such Holder appearing on the books of the Company. Any notice or other communication or deliveries hereunder shall be deemed given and effective on the earliest of (i) the time of transmission, if such notice or communication is delivered via e-mail at the e-mail address set forth in this Section prior to 5:30 p.m. (New York City time) on any date, (ii) the next Trading Day after the time of transmission, if such notice or communication is delivered via e-mail at the e-mail address set forth in this Section on a day that is not a Trading Day or later than 5:30 p.m. (New York City time) on any Trading Day, (iii) the second Trading Day following the date of mailing, if sent by U.S. nationally recognized overnight courier service, or (iv) upon actual receipt by the party to whom such notice is required to be given. To the extent that any notice provided hereunder constitutes, or contains, material, non-public information regarding the Company or any Subsidiaries, the Company shall simultaneously file such notice with the Commission pursuant to a Current Report on Form 8-K.

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

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

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

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

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

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

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

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*(Signature Page Follows)*

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

**AVENUE THERAPEUTICS, INC.**

By: \_\_\_\_\_  
Alexandra MacLean, M.D.  
Chief Executive Officer

**VSTOCK TRANSFER, LLC**

By: \_\_\_\_\_  
Yoel Goldfeder  
Chief Executive Officer

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**ANNEX A**

**NOTICE OF EXERCISE**

TO: AVENUE THERAPEUTICS, INC.

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

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

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

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

\_\_\_\_\_

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

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

[SIGNATURE OF HOLDER]

Name of Investing Entity: \_\_\_\_\_  
*Signature of Authorized Signatory of Investing Entity:* \_\_\_\_\_  
Name of Authorized Signatory: \_\_\_\_\_  
Title of Authorized Signatory: \_\_\_\_\_  
Date: \_\_\_\_\_

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**ANNEX B**  
**ASSIGNMENT FORM**

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

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

Name: \_\_\_\_\_  
(Please Print)

Address: \_\_\_\_\_  
(Please Print)

Phone Number: \_\_\_\_\_

Email Address: \_\_\_\_\_

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

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

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

(Signature Guaranteed): \_\_\_\_\_ Date: \_\_\_\_\_, \_\_\_\_\_

*Signature to be guaranteed by an authorized officer of a chartered bank, trust company or medallion guaranteed by an investment dealer who is a member of a recognized stock exchange.*

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## PRE-FUNDED COMMON STOCK PURCHASE WARRANT

## AVENUE THERAPEUTICS, INC.

Warrant Shares: [●]

Issuance Date: October 11, 2022

Initial Exercise Date: October 11, 2022

THIS PRE-FUNDED COMMON STOCK PURCHASE WARRANT (the “Warrant”) certifies that, for value received, Cede & Co., or its registered assigns (the “Holder”) is entitled, upon the terms and subject to the limitations on exercise and the conditions hereinafter set forth, at any time on or after the date hereof (the “Initial Exercise Date”) and until this Warrant is exercised in full (the “Termination Date”) but not thereafter, to subscribe for and purchase from Avenue Therapeutics, Inc., a Delaware corporation (the “Company”), up to [●] shares of Common Stock (as subject to adjustment hereunder, the “Warrant Shares”). The purchase price of one share of Common under this Warrant shall be equal to the Exercise Price, as defined in Section 2(b). This Warrant shall initially be issued and maintained in the form of a security held in book-entry form and the Depository Trust Company or its nominee (“DTC”) shall initially be the sole registered holder of this Warrant, subject to a Holder’s right to elect to receive a Warrant in certificated form pursuant to the terms of the Warrant Agent Agreement, in which case this sentence shall not apply.

Section 1. Definitions. Capitalized terms used and not otherwise defined herein shall have the meanings set forth in that certain Underwriting Agreement dated October 6, 2022. In addition to the terms defined elsewhere in this Warrant, the following terms have the meanings indicated in this Section 1:

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

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

“Business Day” means any day 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.

“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 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.

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

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

“Registration Statement” means the Company’s registration statement on Form S-1 (File No. 333-267206), as amended.

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

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

“Trading Day” means a day on which the shares of Common Stock are traded on a Trading Market.

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

“Transfer Agent” means VStock Transfer, LLC, and any successor transfer agent of the Company.

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

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

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

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

## Section 2. Exercise.

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

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

b) Exercise Price. The aggregate exercise price of this Warrant, except for a nominal exercise price of \$0.0001 per Warrant Share, was pre-funded to the Company on or prior to the Initial Exercise Date and, consequently, no additional consideration (other than the nominal exercise price of \$0.0001 per Warrant Share) shall be required to be paid by the Holder to any Person to effect any exercise of this Warrant. The Holder shall not be entitled to the return or refund of all, or any portion, of such pre-paid aggregate exercise price under any circumstance or for any reason whatsoever, including in the event this Warrant shall not have been exercised prior to the Termination Date. The remaining unpaid exercise price per share of Common Stock under this Warrant shall be \$0.0001, subject to adjustment hereunder (the “Exercise Price”).

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

(A) as applicable: (i) the VWAP on the Trading Day immediately preceding the date of the applicable Notice of Exercise if such Notice of Exercise is (1) both executed and delivered pursuant to Section 2(a) hereof on a day that is not a Trading Day or (2) both executed and delivered pursuant to Section 2(a) hereof on a Trading Day prior to the opening of “regular trading hours” (as defined in Rule 600(b)(64) of Regulation NMS promulgated under the federal securities laws) on such Trading Day, (ii) at the option of the Holder, either (y) the VWAP on the Trading Day immediately preceding the date of the applicable Notice of Exercise or (z) the Bid Price of the shares of Common Stock on the principal Trading Market as reported by Bloomberg L.P. as of the time of the Holder’s execution of the applicable Notice of Exercise if such Notice of Exercise is executed during “regular trading hours” on a Trading Day and is delivered within two (2) hours thereafter (including until two (2) hours after the close of “regular trading hours” on a Trading Day) pursuant to Section 2(a) hereof or (iii) the VWAP on the date of the applicable Notice of Exercise if the date of such Notice of Exercise is a Trading Day and such Notice of Exercise is both executed and delivered pursuant to Section 2(a) hereof after the close of “regular trading hours” on such Trading Day;

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

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

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

## d) Mechanics of Exercise.

i. Delivery of Warrant Shares Upon Exercise. The Company shall cause the Warrant Shares purchased hereunder to be transmitted by the Transfer Agent to the Holder by crediting the account of the Holder’s or its designee’s balance account with The Depository Trust Company through its Deposit or Withdrawal at Custodian system (“DWAC”) if the Company is then a participant in such system and either (A) there is an effective registration statement permitting the issuance of the Warrant Shares to or resale of the Warrant Shares by the Holder or (B) this Warrant is being exercised via cashless exercise, and otherwise by physical delivery of a certificate, registered in the Company’s share register in the name of the Holder or its designee, for the number of Warrant Shares to which the Holder is entitled pursuant to such exercise to the address specified by the Holder in the Notice of Exercise by the date that is the earliest of (i) two (2) Trading Days after the delivery to the Company of the Notice of Exercise and (ii) the number of Trading Days comprising the Standard Settlement Period after the delivery to the Company of the Notice of Exercise (such date, the “Warrant Share Delivery Date”). Upon delivery of the Notice of Exercise, the Holder shall be deemed for all corporate purposes to have become the holder of record of the Warrant Shares with respect to which this Warrant has been exercised, irrespective of the date of delivery of the Warrant Shares; provided, that payment of the aggregate Exercise Price (other than in the case of a cashless exercise) is received within the earlier of (i) two (2) Trading Days and (ii) the number of Trading Days comprising the Standard Settlement Period following delivery of the Notice of Exercise. If the Company fails for any reason to deliver to the Holder the Warrant Shares subject to a Notice of Exercise by the Warrant Share Delivery Date, the Company shall pay to the Holder, in cash, as liquidated damages and not as a penalty, for each \$1,000 of Warrant Shares subject to such exercise (based on the VWAP of the shares of Common Stock on the date of the applicable Notice of Exercise), \$10 per Trading Day (increasing to \$20 per Trading Day on the fifth (5th) Trading Day after the Warrant Share Delivery Date) for each Trading Day after such Warrant Share Delivery Date until such Warrant Shares are delivered or Holder rescinds such exercise. The Company agrees to maintain a transfer agent that is a participant in the FAST



program so long as this Warrant remains outstanding and exercisable. As used herein, “Standard Settlement Period” means the standard settlement period, expressed in a number of Trading Days, on the Company’s primary Trading Market with respect to the shares of Common Stock as in effect on the date of delivery of the Notice of Exercise. Notwithstanding the foregoing, with respect to any Notice(s) of Exercise delivered on or prior to 12:00 p.m. (New York City time) on the Initial Exercise Date, which may be delivered at any time after the time of execution of the Underwriting Agreement, dated October 6, 2022 between the Company and Aegis Capital Corp., the Company agrees to deliver the Warrant Shares subject to such notice(s) by 4:00 p.m. (New York City time) on the Initial Exercise Date.

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

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

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

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

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

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

e) Holder’s Exercise Limitations. The Company shall not effect any exercise of this Warrant, and a Holder shall not have the right to exercise any portion of this Warrant, pursuant to Section 2 or otherwise, to the extent that after giving effect to such issuance after exercise as set forth on the applicable Notice of Exercise, the Holder (together with the Holder’s Affiliates, and any other Persons acting as a group together with the Holder or any of the Holder’s Affiliates (such Persons, “Attribution Parties”)), would beneficially own in excess of the Beneficial Ownership Limitation (as defined below). For purposes of the foregoing sentence, the number of shares of Common Stock beneficially owned by the Holder and its Affiliates and Attribution Parties shall include the number of shares of Common Stock issuable upon exercise of this Warrant with respect to which such determination is being made, but shall exclude the number of shares of Common Stock which would be issuable upon (i) exercise of the remaining, unexercised portion of this Warrant beneficially owned by the Holder or any of its Affiliates or Attribution Parties and (ii) exercise or conversion of the unexercised or nonconverted portion of any other securities of the Company (including, without limitation, any other shares of Common Stock Equivalents) subject to a limitation on conversion or exercise analogous to the limitation contained herein beneficially owned by the Holder or any of its Affiliates or Attribution Parties. Except as set forth in the preceding sentence, for purposes of this Section 2(e), beneficial ownership shall be calculated in accordance with Section 13(d) of the Exchange Act and the rules and regulations promulgated thereunder, it being acknowledged by the Holder that the Company is not representing to the Holder that such calculation is in compliance with Section 13(d) of the Exchange Act and the Holder is solely responsible for any schedules required to be filed in accordance therewith. To the extent that the limitation contained in this Section 2(e) applies, the determination of whether this Warrant is exercisable (in relation to other securities owned by the Holder together with any Affiliates and Attribution Parties) and of which portion of this Warrant is exercisable shall be in the sole discretion of the Holder, and the submission of a Notice of Exercise shall be deemed to be the Holder’s determination of whether this Warrant is exercisable (in relation to other securities owned by the Holder together with any Affiliates and Attribution Parties) and of which portion of this Warrant is exercisable, in each case subject to the Beneficial Ownership Limitation, and the Company shall have no obligation to verify or confirm the accuracy of such determination. In addition, a determination as to any group status as contemplated above shall be determined in accordance with Section 13(d) of the Exchange Act and the rules and regulations promulgated thereunder. For purposes of this Section 2(e), in determining the number of outstanding shares of Common Stock, a Holder may rely on the number of outstanding shares of Common Stock as reflected in (A) the Company’s most recent periodic or annual report filed with the Commission, as the case may be, (B) a more recent public announcement by the Company or (C) a more recent written notice by the Company or the Transfer Agent setting forth the number of shares of Common Stock outstanding. Upon the written or oral request of a Holder, the Company shall within one Trading Day confirm orally and in writing to the Holder the number of shares of Common Stock then outstanding. In any case, the number of outstanding shares of Common Stock shall be determined after giving effect to the conversion or exercise of securities of the Company, including this Warrant, by the Holder or its Affiliates or Attribution Parties since the date as of which such number of outstanding shares of Common Stock was reported. The “Beneficial Ownership Limitation” shall be 4.99% (or, upon election by a Holder prior to the issuance of any Warrants, 9.99%) of the number of shares of Common Stock outstanding immediately after giving effect to the issuance of shares of Common Stock issuable upon exercise of this Warrant. The Holder, upon notice to the Company, may increase or decrease the Beneficial Ownership Limitation provisions of this Section 2(e), provided that the Beneficial

Ownership Limitation in no event exceeds 9.99% of the number of shares of Common Stock outstanding immediately after giving effect to the issuance of shares of Common Stock upon exercise of this Warrant held by the Holder and the provisions of this Section 2(e) shall continue to apply. Any increase in the Beneficial Ownership Limitation will not be effective until the 61<sup>st</sup> day after such notice is delivered to the Company. The provisions of this paragraph shall be construed and implemented in a manner otherwise than in strict conformity with the terms of this Section 2(e) to correct this paragraph (or any portion hereof) which may be defective or inconsistent with the intended Beneficial Ownership Limitation herein contained or to make changes or supplements necessary or desirable to properly give effect to such limitation. The limitations contained in this paragraph shall apply to a successor holder of this Warrant.

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### Section 3. Certain Adjustments.

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

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

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

d) Fundamental Transaction. If, at any time while this Warrant is outstanding, (i) the Company, directly or indirectly, in one or more related transactions effects any merger or consolidation of the Company with or into another Person, (ii) the Company or any Subsidiary, directly or indirectly, effects any sale, lease, license, assignment, transfer, conveyance or other disposition of all or substantially all of its assets in one or a series of related transactions, (iii) any, direct or indirect, purchase offer, tender offer or exchange offer (approved or recommended by the Board of Directors or a committee thereof) is completed pursuant to which holders of shares of Common Stock are permitted to sell, tender or exchange their shares for other securities, cash or property and has been accepted by the holders of 50% or more of the outstanding shares of Common Stock or 50% or more of the voting power of the common equity of the Company, (iv) the Company, directly or indirectly, in one or more related transactions effects any reclassification, reorganization or recapitalization of the shares of Common Stock or any compulsory share exchange pursuant to which the shares of Common Stock are effectively converted into or exchanged for other securities, cash or property, or (v) the Company, directly or indirectly, in one or more related transactions consummates a stock or share purchase agreement or other business combination (including, without limitation, a reorganization, recapitalization, spin-off, merger or scheme of arrangement) with another Person or group of Persons whereby such other Person or group acquires more than 50% of the outstanding shares of Common Stock or 50% or more of the voting power of the common equity in the Company (each a "Fundamental Transaction"), then, upon any subsequent exercise of this Warrant, the Holder shall have the right to receive, for each Warrant Share that would have been issuable upon such exercise immediately prior to the occurrence of such Fundamental Transaction, at the option of the Holder (without regard to any limitation in Section 2(e) on the exercise of this Warrant), the number of shares of Common Stock of the successor or acquiring corporation or of the Company, if it is the surviving corporation, and any additional consideration (together, the "Alternate Consideration") receivable as a result of such Fundamental Transaction by a holder of the number of shares of Common Stock for which this Warrant is exercisable immediately prior to such Fundamental Transaction (without regard to any limitation in Section 2(e) on the exercise of this Warrant). For purposes of any such exercise, the determination of the Exercise Price shall be appropriately adjusted to apply to such Alternate Consideration based on the amount of Alternate Consideration issuable in respect of one share of Common Stock in such Fundamental Transaction, and the Company shall apportion the Exercise Price among the Alternate Consideration in a reasonable manner reflecting the relative value of any different components of the Alternate Consideration. If holders of shares of Common Stock are given any choice as to the securities, cash or property to be received in a Fundamental Transaction, then the Holder shall be given the same choice as to the Alternate Consideration it receives upon any exercise of this Warrant following such Fundamental Transaction.

The Company shall cause any successor entity in a Fundamental Transaction in which the Company is not the survivor (the "Successor Entity") to assume in writing all of the obligations of the Company under this Warrant in accordance with the provisions of this Section 3(d) pursuant to written agreements in form and substance reasonably satisfactory to the Holder and approved by the Holder (without unreasonable delay) prior to such Fundamental Transaction and shall, at the option of the Holder, deliver to the Holder in exchange for this Warrant a security of the Successor Entity evidenced by a written instrument substantially similar in form and substance to this Warrant which is exercisable for a corresponding number of shares of capital stock of such Successor Entity (or its parent entity) equivalent to the shares of Common Stock acquirable and receivable upon exercise of this Warrant (without regard to any limitations on the exercise of this Warrant) prior to such Fundamental Transaction, and with an exercise price which applies the exercise price hereunder to such shares of capital stock (but taking into account the relative value of the shares of Common Stock pursuant to such Fundamental Transaction and the value of such shares of capital stock, such number of shares of capital stock and such exercise price being for the purpose of protecting the economic value of this Warrant immediately prior to the consummation of such Fundamental Transaction), and which is reasonably satisfactory in form and substance to the Holder. Upon the occurrence of any such Fundamental Transaction, the Successor Entity shall be added to the term "Company" under this Warrant (so that from and after the occurrence or consummation of such Fundamental Transaction, each and every provision of this Warrant and the other Transaction Documents referring to the "Company" shall refer instead to each of the Company and the Successor Entity or Successor Entities, jointly and severally), and the Successor Entity or Successor Entities, jointly and severally with the Company may exercise every right and power of the Company prior

thereto and the Successor Entity or Successor Entities shall assume all of the obligations of the Company prior thereto under this Warrant and the other Transaction Documents with the same effect as if the Company and such Successor Entity or Successor Entities, jointly and severally, had been named as the Company herein. For the avoidance of doubt, the Holder shall be entitled to the benefits of the provisions of this Section 3(d) regardless of (i) whether the Company has sufficient authorized shares of Common Stock for the issuance of Warrant Shares and/or (ii) whether a Fundamental Transaction occurs prior to the Exercise Date.

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

f) Notice to Holder.

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

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

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Section 4. Transfer of Warrant.

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

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

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

Section 5. Miscellaneous.

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

b) Loss, Theft, Destruction or Mutilation of Warrant. The Company covenants that upon receipt by the Company of evidence reasonably satisfactory to it of the loss, theft, destruction or mutilation of this Warrant or any stock certificate relating to the Warrant Shares, and in case of loss, theft or destruction, of indemnity or security reasonably satisfactory to it (including the posting of any bond), and upon surrender and cancellation of such Warrant or stock certificate, if mutilated, the Company will make and deliver a new Warrant or stock certificate of like tenor and dated as of such cancellation, in lieu of such Warrant or stock certificate.

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

d) Authorized Shares.

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

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

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

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

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

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

h) Notices. Any and all notices or other communications or deliveries to be provided by the Holders hereunder including, without limitation, any Notice of Exercise, shall be in writing and delivered personally, by e-mail, or sent by a nationally recognized overnight courier service, addressed to (A) the Company, at 2 Gansevoort Street, 9<sup>th</sup> Floor, New York, NY 10014, Attention: Chief Operating Officer, email address: [djin@fortressbiotech.com](mailto:djin@fortressbiotech.com), or such other email address or address as the Company may specify for such purposes by notice to the Holders and (B) the Warrant Agent, at VStock Transfer, LLC, 18 Lafayette Pl, Woodmere, NY 11598, Attention: Transaction Processing Dept., email address: [info@vstocktransfer.com](mailto:info@vstocktransfer.com). Any and all notices or other communications or deliveries to be provided by the Company hereunder shall be in writing and delivered personally, by e-mail, or sent by a nationally recognized overnight courier service addressed to each Holder at the e-mail address or address of such Holder appearing on the books of the Company. Any notice or other communication or deliveries hereunder shall be deemed given and effective on the earliest of (i) the time of transmission, if such notice or communication is delivered via e-mail at the e-mail address set forth in this Section prior to 5:30 p.m. (New York City time) on any date, (ii) the next Trading Day after the time of transmission, if such notice or communication is delivered via e-mail at the e-mail address set forth in this Section on a day that is not a Trading Day or later than 5:30 p.m. (New York City time) on any Trading Day, (iii) the second Trading Day following the date of mailing, if sent by U.S. nationally recognized overnight courier service, or (iv) upon actual receipt by the party to whom such notice is required to be given. To the extent that any notice provided hereunder constitutes, or contains, material, non-public information regarding the Company or any Subsidiaries, the Company shall simultaneously file such notice with the Commission pursuant to a Current Report on Form 8-K.

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

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

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

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

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

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

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

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(Signature Page Follows)

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

**AVENUE THERAPEUTICS, INC.**

By: \_\_\_\_\_  
Alexandra MacLean, M.D.  
Chief Executive Officer

**VSTOCK TRANSFER, LLC**

By: \_\_\_\_\_  
Yoel Goldfeder  
Chief Executive Officer

**ANNEX A  
NOTICE OF EXERCISE**

TO: AVENUE THERAPEUTICS, INC.

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

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

in lawful money of the United States; or

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

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

\_\_\_\_\_

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

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

[SIGNATURE OF HOLDER]

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

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

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

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

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

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

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

Name: \_\_\_\_\_  
(Please Print)

Address: \_\_\_\_\_  
(Please Print)

Phone Number: \_\_\_\_\_

Email Address: \_\_\_\_\_

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

Holder's  
Signature:

Holder's Address:

(Signature Guaranteed): \_\_\_\_\_ Date: \_\_\_\_\_, \_\_\_\_\_

*Signature to be guaranteed by an authorized officer of a chartered bank, trust company or medallion guaranteed by an investment dealer who is a member of a recognized stock exchange.*

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### Warrant Agent Agreement

This WARRANT AGENT AGREEMENT (this “**Warrant Agreement**”) dated as of October 6, 2022 (the “**Issuance Date**”) is by and between Avenue Therapeutics, Inc, a Delaware corporation (the “**Company**”), and VStock Transfer, LLC (the “**Warrant Agent**”).

**WHEREAS**, pursuant to the terms of that certain Underwriting Agreement (“**Underwriting Agreement**”), dated October 6, 2022, by and between the Company and Aegis Capital Corp., as the underwriter set forth therein (the “**Underwriter**”), the Company is selling in a public offering of (i) 2,652,065 units (the “**Units**”), with each Unit consisting of one (1) share of common stock, par value \$0.0001 per share (“**Common Stock**”), and one (1) warrant to purchase one share of Common Stock at an exercise price of \$3.30 (each, a “**Warrant**” and collectively, the “**Warrants**”), (ii) 984,300 pre-funded units (the “**Pre-funded Units**”), with each Pre-funded Unit consisting of one (1) Warrant and one (1) pre-funded warrant to purchase one (1) share of Common Stock at an exercise price of \$0.0001 per share of Common Stock (each, a “**Pre-funded Warrant**” and collectively, the “**Pre-funded Warrants**”), and (iii) (x) up to 545,454 shares of Common Stock and/or Pre-funded Units and/or (y) additional Warrants to purchase up to 545,454 shares of Common Stock, in each case pursuant to the Underwriter’s over-allotment option granted pursuant to the Underwriting Agreement.

**WHEREAS**, the Company has filed, with the Securities and Exchange Commission (the “**SEC**”), a registration statement on Form S-1 (Registration No. 333-267206) (as the same may be amended from time to time, the “**Registration Statement**”), for the registration, under the Securities Act of 1933, as amended (the “**Act**”), of the offer and sale of the Units, Pre-funded Units, Common Stock, Warrants, Pre-funded Warrants, and Common Stock underlying Pre-funded Warrants and Warrants, and such Registration Statement was declared effective on October 6, 2022;

**WHEREAS**, the Company desires the Warrant Agent to act on behalf of the Company, and the Warrant Agent is willing to so act, in accordance with the terms set forth in this Warrant Agreement in connection with the issuance, registration, transfer, exchange and exercise of the Warrants and the Pre-funded Warrants;

**WHEREAS**, the Company desires to provide for the provisions of the Warrants and the Pre-funded Warrants, the terms upon which they shall be issued and exercised, and the respective rights, limitation of rights, and immunities of the Company, the Warrant Agent, and the holders of the Warrants and the Pre-funded Warrants; and

**WHEREAS**, all acts and things have been done and performed which are necessary to make the Warrants and the Pre-funded Warrants the valid, binding and legal obligations of the Company, and to authorize the execution and delivery of this Warrant Agreement;

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

1. Appointment of Warrant Agent. The Company hereby appoints the Warrant Agent to act as agent for the Company with respect to the Warrants and the Pre-funded Warrants, and the Warrant Agent hereby accepts such appointment and agrees to perform the same in accordance with the express terms and conditions set forth in this Warrant Agreement (and no implied terms or conditions).
2. Warrants.

2.1. Form of Warrants. The Warrants and the Pre-funded Warrants shall each be registered securities and shall be evidenced by a global warrant (each, a “**Global Warrant**”) in the forms of Exhibit A and Exhibit B to this Warrant Agreement, which shall be deposited on behalf of the Company with a custodian for The Depository Trust Company (“**DTC**”) and registered in the name of Cede & Co., a nominee of DTC. The terms of the Global Warrants are incorporated herein by reference. If DTC subsequently ceases to make its book-entry settlement system available for the Warrants or the Pre-funded Warrants, the Company may instruct the Warrant Agent regarding making other arrangements for book-entry settlement. In the event that the Warrants or the Pre-funded Warrants are not eligible for, or it is no longer necessary to have such instruments available in, book-entry form, the Company may instruct the Warrant Agent to provide written instructions to DTC to deliver to the Warrant Agent for cancellation the applicable Global Warrant, and the Company shall instruct the Warrant Agent to deliver to DTC separate certificates evidencing Warrants or the Pre-funded Warrants (“**Definitive Certificates**”) and, together with the Global Warrants, “**Warrant Certificates**”) registered as requested through the DTC system.

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#### 2.2. Issuance and Registration of Warrants.

2.2.1. Warrant Register. The Warrant Agent shall maintain books (“**Warrant Register**”) for the registration of original issuance and the registration of transfer of the Warrants and the Pre-funded Warrants.

2.2.2. Issuance of Warrants. Upon the initial issuance of the Warrants and the Pre-funded Warrants, the Warrant Agent shall issue the Global Warrants and deliver the Warrants and the Pre-funded Warrants in the DTC book-entry settlement system in accordance with written instructions delivered to the Warrant Agent by the Company. Ownership of security entitlements in the Warrants and the Pre-funded Warrants shall be shown on, and the transfer of such ownership shall be effected through, records maintained (i) by DTC and (ii) by institutions that have accounts with DTC (each, a “**Participant**”).

2.2.3. Beneficial Owner; Holder. Prior to due presentment for registration of transfer of any Warrant or Pre-funded Warrant, the Company and the Warrant Agent may deem and treat the person in whose name that Warrant or Pre-funded Warrant shall be registered on the Warrant Register (the “**Holder**”) as the absolute owner of such security for purposes of any exercise thereof, and for all other purposes, and neither the Company nor the Warrant Agent shall be affected by any notice to the contrary; provided, that the rights of beneficial owners in a Warrant or Pre-funded Warrant evidenced by a Global Warrant shall be exercised by the Holder or a Participant through the DTC system. Notwithstanding the foregoing, nothing herein shall prevent the Company, the Warrant Agent or any agent of the Company or the Warrant Agent from giving effect to any written certification, proxy or other authorization furnished by DTC governing the exercise of the rights of a holder of a beneficial interest in any Warrant or Pre-funded Warrant.

2.2.4. Delivery of Warrant Certificate. A Holder has the right to elect at any time or from time to time a Warrant Exchange (as defined below) pursuant to a Warrant Certificate Request Notice (as defined below). Upon written notice by a Holder to the Warrant Agent for the exchange of some or all of such Holder’s Global Warrants for a Warrant Certificate evidencing the same number of Warrants or Pre-funded Warrants, which request shall be in the form attached hereto as Exhibit C (a “**Warrant Certificate Request Notice**”) and the date of delivery of such Warrant Certificate Request Notice by the Holder, the “**Warrant Certificate Request Notice Date**”) and the deemed surrender upon delivery by the Holder of a number of Global Warrants for the same number of Warrants or Pre-funded Warrants evidenced by a Warrant Certificate, a “**Warrant Exchange**”), the Warrant Agent shall promptly effect the Warrant Exchange and shall promptly issue and deliver to the Holder a Warrant Certificate for such number of Warrants or Pre-funded Warrants in the name set forth in the Warrant Certificate Request Notice. Such Warrant Certificate shall be dated the date of issuance of the Warrant Certificate, shall include the initial exercise date of the Warrants or Pre-funded Warrants, shall be executed by an authorized signatory of the Company and shall be reasonably acceptable in all respects to such Holder. In connection with a Warrant Exchange, the Company agrees to deliver, or to direct the Warrant Agent to deliver, the Warrant Certificate to the Holder within three (3) Business Days of the Warrant Certificate Request Notice pursuant to the delivery instructions in the Warrant Certificate Request Notice (“**Warrant Certificate Delivery Date**”). The Company covenants and agrees that, upon the date of delivery of the Warrant Certificate Request Notice, the Holder shall be deemed to be the holder of the Warrant Certificate and, notwithstanding anything to the contrary set forth herein, the Warrant Certificate shall be deemed for all

purposes to contain all of the terms and conditions of the Warrants or Pre-funded Warrants evidenced by such Warrant Certificate and the terms of this Agreement.

2.2.5. Execution. The Warrant Certificates shall be executed on behalf of the Company by any authorized officer of the Company (an “**Authorized Officer**”), which need not be the same authorized signatory for all of the Warrant Certificates, either manually or by facsimile signature. The Warrant Certificates shall be countersigned by an authorized signatory of the Warrant Agent, which need not be the same signatory for all of the Warrant Certificates, and no Warrant Certificate shall be valid for any purpose unless so countersigned. In case any Authorized Officer of the Company that signed any of the Warrant Certificates ceases to be an Authorized Officer of the Company before countersignature by the Warrant Agent and issuance and delivery by the Company, such Warrant Certificates, nevertheless, may be countersigned by the Warrant Agent, issued and delivered with the same force and effect as though the person who signed such Warrant Certificates had not ceased to be such officer of the Company; and any Warrant Certificate may be signed on behalf of the Company by any person who, at the actual date of the execution of such Warrant Certificate, shall be an Authorized Officer of the Company authorized to sign such Warrant Certificate, although at the date of the execution of this Warrant Agreement any such person was not such an Authorized Officer.

Signature Page

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2.2.6. Registration of Transfer. At any time at or prior to the Expiration Date (as defined below), a transfer of any Warrants or Pre-funded Warrants may be registered and any Warrant Certificate or Warrant Certificates may be split up, combined or exchanged for another Warrant Certificate or Warrant Certificates evidencing the same number of Warrants or Pre-funded Warrants as the Warrant Certificate or Warrant Certificates surrendered. Any Holder desiring to register the transfer of Warrants or Pre-funded Warrants or to split up, combine or exchange any Warrant Certificate shall make such request in writing delivered to the Warrant Agent, and shall surrender to the Warrant Agent the Warrant Certificate or Warrant Certificates evidencing the Warrants or Pre-funded Warrants the transfer of which is to be registered or that is or are to be split up, combined or exchanged and, in the case of registration of transfer, shall provide a signature guarantee. Thereupon, the Warrant Agent shall countersign and deliver to the person entitled thereto a Warrant Certificate or Warrant Certificates, as the case may be, as so requested; provided, however that Warrants and Pre-funded Warrants may not be combined in the same Warrant Certificate. The Company and the Warrant Agent may require payment, by the Holder requesting a registration of transfer of Warrants or Pre-funded Warrants or a split-up, combination or exchange of a Warrant Certificate (but, for purposes of clarity, not upon the exercise of the Warrants and issuance of Warrant Shares to the Holder), of a sum sufficient to cover any tax or governmental charge that may be imposed in connection with such registration of transfer, split-up, combination or exchange, together with reimbursement to the Company and the Warrant Agent of all reasonable expenses incidental thereto.

2.2.7. Loss, Theft and Mutilation of Warrant Certificates. Upon receipt by the Company and the Warrant Agent of evidence reasonably satisfactory to them of the loss, theft, destruction or mutilation of a Warrant Certificate, and, in case of loss, theft or destruction, of indemnity or security in customary form and amount, and reimbursement to the Company and the Warrant Agent of all reasonable expenses incidental thereto, and upon surrender to the Warrant Agent and cancellation of the Warrant Certificate if mutilated, the Warrant Agent shall, on behalf of the Company, countersign and deliver a new Warrant Certificate of like tenor to the Holder in lieu of the Warrant Certificate so lost, stolen, destroyed or mutilated. The Warrant Agent may charge the Holder an administrative fee for processing the replacement of lost Warrant Certificates. The Warrant Agent may receive compensation from the surety companies or surety agents for administrative services provided to them.

2.2.8. Proxies. The Holder of a Warrant or Pre-funded Warrant may grant proxies or otherwise authorize any person, including the Participants and beneficial holders that may own interests through the Participants, to take any action that a Holder is entitled to take under this Agreement or the Warrants or Pre-funded Warrants; provided, however, that at all times that Warrants or Pre-funded Warrants are evidenced by a Global Warrant, exercise of those Warrants or Pre-funded Warrants shall be effected on their behalf by Participants through DTC in accordance the procedures administered by DTC.

### 3. Terms and Exercise of Warrants.

3.1. Exercise Price. Each Warrant shall entitle the Holder, subject to the provisions of the applicable Warrant Certificate and of this Warrant Agreement, to purchase from the Company the number of shares of Common Stock stated therein, at the price of \$3.30 per share of Common Stock, subject to the subsequent adjustments provided in the Global Warrant. Each Pre-funded Warrant shall entitle the Holder, subject to the provisions of the applicable Warrant Certificate and of this Warrant Agreement to purchase from the Company the number of shares of Common Stock stated therein, at the price of \$0.0001 per share of Common Stock, subject to the subsequent adjustments provided in the Global Warrant. The term “**Exercise Price**” as used in this Warrant Agreement refers to the price per share at which shares of Common Stock may be purchased at the time a Warrant or Pre-funded Warrant is exercised.

3.2. Duration of Warrants. A Warrant may be exercised only during the period (“**Exercise Period**”) commencing on the date of issuance and ending on the Termination Date. For purposes of this Warrant Agreement, the “**Termination Date**” shall have the meaning set forth in the Global Warrant. Each Warrant not exercised on or before the Termination Date shall become void, and all rights thereunder and all rights in respect thereof under this Agreement shall cease at the close of business on the Termination Date. The Pre-funded Warrants do not expire.

Signature Page

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### 3.3. Exercise of Warrants.

3.3.1. Exercise. Subject to the provisions of each Global Warrant, a Holder (or a Participant or a designee of a Participant acting on behalf of a Holder) may exercise Warrants or Pre-funded Warrants by delivering to the Warrant Agent, not later than 5:00 P.M., Eastern Time, on any business day during the Exercise Period a notice of exercise of the Warrants or Pre-funded Warrants to be exercised (i) in the form attached to the Global Warrant or (ii) via an electronic warrant exercise through the DTC system (each, an “**Election to Purchase**”) and, unless the cashless exercise procedure is specified in the applicable Election to Purchase, delivery of the aggregate Exercise Price of the Warrant Shares specified in the applicable Election to Purchase. All other requirements for the exercise of a Warrant or Pre-funded Warrant shall be as set forth in the Warrant or Pre-funded Warrant, respectively. Notwithstanding anything herein to the contrary, the Holder shall not be required to physically surrender a Warrant Certificate to the Warrant Agent until the Holder has purchased all of the Warrant Shares available thereunder and the applicable Warrant Certificate has been exercised in full, in which case, the Holder shall surrender the Warrant Certificate to the Warrant Agent for cancellation within three (3) Trading Days of the date on which the final Election to Purchase is delivered to the Warrant Agent. Partial exercises of a Warrant Certificate resulting in purchases of a portion of the total number of Warrant Shares available thereunder shall have the effect of lowering the outstanding number of Warrant Shares purchasable thereunder in an amount equal to the applicable number of Warrant Shares purchased.

3.3.2. The Warrant Agent shall, by 5:00 P.M., Eastern Time, on the Trading Day following the Exercise Date (as defined below) of any Warrant or Pre-funded Warrant, advise the Company, the transfer agent and registrar for the Company’s Common Stock, in respect of (i) the number of Warrant Shares indicated on the Notice of Exercise as issuable upon such exercise with respect to such exercised Warrants, (ii) the instructions of the Holder or Participant, as the case may be, provided to the Warrant Agent with respect to the delivery of the Warrant Shares and the number of Warrants or Pre-Funded Warrants that remain outstanding after such exercise and (iii) such other information as the Company or such transfer agent and registrar shall reasonably request. The Company shall issue the Warrant Shares in compliance with the terms of the Warrant or Pre-funded Warrant, as applicable.

3.3.3. Valid Issuance. All Warrant Shares issued by the Company upon the proper exercise of a Warrant or Pre-funded Warrant in conformity with this



Warrant Agreement shall be validly issued, fully paid and non-assessable.

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

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

3.3.6. Date of Issuance. The Company will treat an exercising Holder as a beneficial owner of the Warrant Shares as of the time of delivery of a Notice of Exercise (as defined in the Warrant Certificate) to the Warrant Agent or the Company, and for purposes of Regulation SHO, a holder whose interest in the Warrant or Pre-funded Warrant is a beneficial interest in certificate(s) representing the Warrant or Pre-funded Warrant held in book-entry form through DTC shall be deemed to have exercised its interest in the Warrant or Pre-funded Warrant upon instructing its broker that is a DTC participant to exercise its interest in the Warrant or Pre-funded Warrant (the date of any such exercise, an "**Exercise Date**"), except that, if the Exercise Date is a date when the stock transfer books of the Company are closed, such person shall be deemed to have become the holder of such shares at the open of business on the next succeeding date on which the stock transfer books are open.

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4. Adjustments. Upon every adjustment of the Exercise Price or the number of Warrant Shares issuable upon exercise of a Warrant or Pre-funded Warrant, the Company shall give written notice thereof to the Warrant Agent, which notice shall state the Exercise Price resulting from such adjustment and the increase or decrease, if any, in the number of Warrant Shares purchasable at such price upon the exercise of a Warrant or Pre-funded Warrant, setting forth in reasonable detail the method of calculation and the facts upon which such calculation is based. Upon the occurrence of any event specified in Section 3 of the Warrant or Pre-funded Warrant, then, in any such event, the Company shall give written notice to the Warrant Agent. Failure to give such notice, or any defect therein, shall not affect the legality or validity of such event. The Warrant Agent shall be entitled to rely conclusively on, and shall be fully protected in relying on, any certificate, notice or instructions provided by the Company with respect to any adjustment of the Exercise Price or the number of shares issuable upon exercise of a Warrant or Pre-funded Warrant, or any related matter, and the Warrant Agent shall not be liable for any action taken, suffered or omitted to be taken by it in accordance with any such certificate, notice or instructions or pursuant to this Warrant Agreement. The Warrant Agent shall not be deemed to have knowledge of any such adjustment unless and until it shall have received written notice thereof from the Company.

5. Restrictive Legends: Fractional Warrants. In the event that a Warrant Certificate surrendered for transfer bears a restrictive legend, the Warrant Agent shall not register that transfer until the Warrant Agent has received an opinion of counsel for the Company stating that such transfer may be made and indicating whether the Warrants or Pre-funded Warrants must also bear a restrictive legend upon that transfer. The Warrant Agent shall not be required to effect any registration of transfer or exchange which will result in the transfer of or delivery of a Warrant Certificate for a fraction of a Warrant or Pre-funded Warrant.

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

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

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

7. Concerning the Warrant Agent and Other Matters.

7.1. Any instructions given to the Warrant Agent orally, as permitted by any provision of this Warrant Agreement, shall be confirmed in writing by the Company as soon as practicable. The Warrant Agent shall not be liable or responsible and shall be fully authorized and protected for acting, or failing to act, in accordance with any oral instructions which do not conform with the written confirmation received in accordance with this Section 7.1.

7.2. (a) Whether or not any Warrants or Pre-funded Warrants are exercised, for the Warrant Agent's services as agent for the Company hereunder, the Company shall pay to the Warrant Agent such fees as may be separately agreed between the Company and Warrant Agent. (b) All amounts owed by the Company to the Warrant Agent under this Warrant Agreement are due within 30 days of the invoice date. Delinquent payments are subject to a late payment charge of one and one-half percent (1.5%) per month commencing 45 days from the invoice date. The Company agrees to reimburse the Warrant Agent for any attorney's fees and any other costs associated with collecting delinquent payments. (c) No provision of this Warrant Agreement shall require Warrant Agent to expend or risk its own funds or otherwise incur any financial liability in the performance of any of its duties under this Warrant Agreement or in the exercise of its rights.

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7.3. As agent for the Company hereunder the Warrant Agent: (a) shall have no duties or obligations other than those specifically set forth herein or as may subsequently be agreed to in writing by the Warrant Agent and the Company; (b) shall be regarded as making no representations and having no responsibilities as to the validity, sufficiency, value, or genuineness of the Warrants, Pre-funded Warrants or any Warrant Shares; (c) shall not be obligated to take any legal action hereunder; if, however, the Warrant Agent determines to take any legal action hereunder, and where the taking of such action might, in its judgment, subject or expose it to any expense or liability it shall not be required to act unless it has been furnished with an indemnity reasonably satisfactory to it; (d) may rely on and shall be fully authorized and protected in acting or failing to act upon any certificate, instrument, opinion, notice, letter or other document or security delivered to the Warrant Agent and believed by it to be genuine and to have been signed by the proper party or parties; (e) shall not be liable or responsible for any recital or statement contained in the Registration Statement or any other documents relating thereto; (f) shall not be liable or responsible for any failure on the part of the Company to comply with any of its covenants and obligations relating to the Warrants and Pre-funded Warrants, including without limitation obligations under applicable securities laws; (g) may rely on and shall be fully authorized and protected in acting or failing to act upon the written, telephonic or oral instructions with respect to any matter relating to its duties as Warrant Agent covered by this Warrant Agreement (or supplementing or qualifying any such actions) of officers of the Company, and is hereby authorized and directed to accept instructions with respect to the performance of its duties hereunder from the Company or counsel to the Company, and may apply to the Company, for advice or instructions in connection with the Warrant Agent's duties hereunder, and the Warrant

Agent shall not be liable for any delay in acting while waiting for those instructions; any applications by the Warrant Agent for written instructions from the Company may, at the option of the Warrant Agent, set forth in writing any action proposed to be taken or omitted by the Warrant Agent under this Warrant Agreement and the date on or after which such action shall be taken or such omission shall be effective; the Warrant Agent shall not be liable for any action taken by, or omission of, the Warrant Agent in accordance with a proposal included in such application on or after the date specified in such application (which date shall not be less than five business days after the date such application is sent to the Company, unless the Company shall have consented in writing to any earlier date) unless prior to taking any such action, the Warrant Agent shall have received written instructions in response to such application specifying the action to be taken or omitted; (h) may consult with counsel satisfactory to the Warrant Agent, including its in-house counsel; (i) may perform any of its duties hereunder either directly or by or through nominees, correspondents, designees, or subagents, and it shall not be liable or responsible for any misconduct or negligence on the part of any nominee, correspondent, designee, or subagent appointed with reasonable care by it in connection with this Warrant Agreement; (j) is not authorized, and shall have no obligation, to pay any brokers, dealers, or soliciting fees to any person; and (k) shall not be required hereunder to comply with the laws or regulations of any country other than the United States of America or any political subdivision thereof.

7.4. (a) In the absence of gross negligence or willful or illegal misconduct on its part, the Warrant Agent shall not be liable for any action taken, suffered, or omitted by it or for any error of judgment made by it in the performance of its duties under this Warrant Agreement. Anything in this Warrant Agreement to the contrary notwithstanding, in no event shall Warrant Agent be liable for special, indirect, incidental, consequential or punitive losses or damages of any kind whatsoever (including but not limited to lost profits, liquidated damages or buy-in claims), even if the Warrant Agent has been advised of the possibility of such losses or damages and regardless of the form of action. Any liability of the Warrant Agent will be limited in the aggregate to the amount of fees paid by the Company hereunder. The Warrant Agent shall not be liable for any failures, delays or losses, arising directly or indirectly out of conditions beyond its reasonable control including, but not limited to, acts of government, exchange or market ruling, suspension of trading, work stoppages or labor disputes, fires, civil disobedience, riots, rebellions, storms, electrical or mechanical failure, computer hardware or software failure, communications facilities failures including telephone failure, war, terrorism, insurrection, earthquakes, floods, acts of God or similar occurrences. (b) In the event any question or dispute arises with respect to the proper interpretation of the Warrants or the Warrant Agent's duties under this Warrant Agreement or the rights of the Company or of any Holder, the Warrant Agent shall not be required to act and shall not be held liable or responsible for its refusal to act until the question or dispute has been judicially settled (and, if appropriate, it may file a suit in interpleader or for a declaratory judgment for such purpose) by final judgment rendered by a court of competent jurisdiction, binding on all persons interested in the matter which is no longer subject to review or appeal, or settled by a written document in form and substance satisfactory to Warrant Agent and executed by the Company and each such Holder. In addition, the Warrant Agent may require for such purpose, but shall not be obligated to require, the execution of such written settlement by all the Holders and all other persons that may have an interest in the settlement.

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7.5. The Company covenants to indemnify the Warrant Agent and hold it harmless from and against any loss, liability, claim or expense ("**Loss**") arising out of or in connection with the Warrant Agent's duties under this Warrant Agreement, including the costs and expenses of defending itself against any Loss, unless such Loss shall have been determined by a court of competent jurisdiction to be a result of the Warrant Agent's gross negligence or willful or illegal misconduct.

7.6. Unless terminated earlier by the parties hereto, this Agreement shall terminate 90 days after the later of the Expiration Date and the date on which no Warrants remain outstanding (the "**Termination Date**"). On the business day following the Termination Date, the Agent shall deliver to the Company any entitlements, if any, held by the Warrant Agent under this Warrant Agreement. The Agent's right to be reimbursed for fees, charges and out-of-pocket expenses as provided in this Section 8 shall survive the termination of this Warrant Agreement.

7.7. If any provision of this Warrant Agreement shall be held illegal, invalid, or unenforceable by any court, this Warrant Agreement shall be construed and enforced as if such provision had not been contained herein and shall be deemed an Agreement among the parties to it to the full extent permitted by applicable law.

7.8. The Company represents and warrants that: (a) it is duly incorporated and validly existing under the laws of its jurisdiction of incorporation; (b) the offer and sale of the Warrants and Pre-funded Warrants and the execution, delivery and performance of all transactions contemplated thereby (including this Warrant Agreement) have been duly authorized by all necessary corporate action and will not result in a breach of or constitute a default under the articles of association, bylaws or any similar document of the Company or any indenture, agreement or instrument to which it is a party or is bound; (c) this Warrant Agreement has been duly executed and delivered by the Company and constitutes the legal, valid, binding and enforceable obligation of the Company; (d) the Warrants and Pre-funded Warrants will comply in all material respects with all applicable requirements of law; and (e) to the best of its knowledge, there is no litigation pending or threatened as of the date hereof in connection with the offering of the Warrants or Pre-funded Warrants.

7.9. In the event of inconsistency between this Warrant Agreement and the terms set forth in the Warrant Certificate with respect to a Warrant or Pre-funded Warrant, as it may from time to time be amended, the terms of the Warrant Certificate shall control.

7.10. Set forth in Exhibit D hereto is a list of the names and specimen signatures of the persons authorized to act for the Company under this Warrant Agreement (the "**Authorized Representatives**"). The Company shall, from time to time, certify to the Warrant Agent the names and signatures of any other persons authorized to act for the Company under this Warrant Agreement.

7.11. Except as expressly set forth elsewhere in this Warrant Agreement, all notices, instructions and communications under this Agreement shall be in writing, shall be effective upon receipt and shall be addressed, if to the Company, to its address set forth beneath its signature to this Agreement, or, if to the Warrant Agent, to VStock Transfer, LLC, 18 Lafayette Place, Woodmere, NY 11598, or to such other address of which a party hereto has notified the other party.

7.12. (a) This Warrant Agreement shall be governed by and construed in accordance with the laws of the State of New York. All actions and proceedings relating to or arising from, directly or indirectly, this Warrant Agreement may be litigated in courts located within the Borough of Manhattan in the City and State of New York. The Company hereby submits to the personal jurisdiction of such courts and consents that any service of process may be made by certified or registered mail, return receipt requested, directed to the Company at its address last specified for notices hereunder. (b) This Warrant Agreement shall inure to the benefit of and be binding upon the successors and assigns of the parties hereto. This Warrant Agreement may not be assigned, or otherwise transferred, in whole or in part, by either party without the prior written consent of the other party, which the other party will not unreasonably withhold, condition or delay; except that (i) consent is not required for an assignment or delegation of duties by Warrant Agent to any affiliate of Warrant Agent and (ii) any reorganization, merger, consolidation, sale of assets or other form of business combination by the Warrant Agent or the Company shall not be deemed to constitute an assignment of this Warrant Agreement. (c) No provision of this Warrant Agreement may be amended, modified or waived, except in a written document signed by both parties.

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7.13. Payment of Taxes. The Company will from time to time promptly pay all taxes and charges that may be imposed upon the Company or the Warrant Agent in respect of the issuance or delivery of Warrant Shares upon the exercise of Warrants and Pre-funded Warrants, but the Company may require the Holders to pay any transfer taxes in respect of the Warrants or such shares. The Warrant Agent may refrain from registering any transfer of Warrants or Pre-funded Warrants or any delivery of any Warrant Shares unless or until the persons requesting the registration or issuance shall have paid to the Warrant Agent for the account of the Company the amount of such tax or

charge, if any, or shall have established to the reasonable satisfaction of the Company and the Warrant Agent that such tax or charge, if any, has been paid.

7.14. Resignation of Warrant Agent.

7.14.1. Appointment of Successor Warrant Agent. The Warrant Agent, or any successor to it hereafter appointed, may resign its duties and be discharged from all further duties and liabilities hereunder after giving thirty (30) days' notice in writing to the Company, or such shorter period of time agreed to by the Company. The Company may terminate the services of the Warrant Agent, or any successor Warrant Agent, after giving thirty (30) days' notice in writing to the Warrant Agent or successor Warrant Agent, or such shorter period of time as agreed. If the office of the Warrant Agent becomes vacant by resignation, termination or incapacity to act or otherwise, the Company shall appoint in writing a successor Warrant Agent in place of the Warrant Agent. If the Company shall fail to make such appointment within a period of 30 days after it has been notified in writing of such resignation or incapacity by the Warrant Agent, then the Warrant Agent or any Holder may apply to any court of competent jurisdiction for the appointment of a successor Warrant Agent at the Company's cost. Pending appointment of a successor to such Warrant Agent, either by the Company or by such a court, the duties of the Warrant Agent shall be carried out by the Company. Any successor Warrant Agent (but not including the initial Warrant Agent), whether appointed by the Company or by such court, shall be a person organized and existing under the laws of any state of the United States of America, in good standing, and authorized under such laws to exercise corporate trust powers and subject to supervision or examination by federal or state authority. After appointment, any successor Warrant Agent shall be vested with all the authority, powers, rights, immunities, duties, and obligations of its predecessor Warrant Agent with like effect as if originally named as Warrant Agent hereunder, without any further act or deed, and except for executing and delivering documents as provided in the sentence that follows, the predecessor Warrant Agent shall have no further duties, obligations, responsibilities or liabilities hereunder, but shall be entitled to all rights that survive the termination of this Warrant Agreement and the resignation or removal of the Warrant Agent, including but not limited to its right to indemnity hereunder. If for any reason it becomes necessary or appropriate or at the request of the Company, the predecessor Warrant Agent shall execute and deliver, at the expense of the Company, an instrument transferring to such successor Warrant Agent all the authority, powers, and rights of such predecessor Warrant Agent hereunder; and upon request of any successor Warrant Agent the Company shall make, execute, acknowledge, and deliver any and all instruments in writing for more fully and effectually vesting in and confirming to such successor Warrant Agent all such authority, powers, rights, immunities, duties, and obligations.

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

7.14.3. Merger or Consolidation of Warrant Agent. Any person into which the Warrant Agent may be merged or converted or with which it may be consolidated or any person resulting from any merger, conversion or consolidation to which the Warrant Agent shall be a party or any person succeeding to the shareowner services business of the Warrant Agent or any successor Warrant Agent shall be the successor Warrant Agent under this Warrant Agreement, without any further act or deed. For purposes of this Warrant Agreement, "person" shall mean any individual, firm, corporation, partnership, limited liability company, joint venture, association, trust or other entity, and shall include any successor (by merger or otherwise) thereof or thereto.

8. Miscellaneous Provisions.

8.1. Persons Having Rights under this Warrant Agreement. Nothing in this Warrant Agreement expressed and nothing that may be implied from any of the provisions hereof is intended, or shall be construed, to confer upon, or give to, any person or corporation other than the parties hereto any right, remedy, or claim under or by reason of this Warrant Agreement or of any covenant, condition, stipulation, promise, or agreement hereof.

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8.2. Examination of the Warrant Agreement. A copy of this Warrant Agreement shall be available at all reasonable times at the office of the Warrant Agent designated for such purpose for inspection by any Holder. Prior to such inspection, the Warrant Agent may require any such holder to provide reasonable evidence of its interest in the Warrants or the Pre-funded Warrants.

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

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

9. Certain Definitions. As used herein, the following terms shall have the following meanings:

(a) **"Trading Day"** means any day on which the Common Stock is traded on the Trading Market, or, if the Trading Market is not the principal trading market for the Common Stock, then on the principal securities exchange or securities market in the United States on which the Common Stock are then traded, provided that **"Trading Day"** shall not include any day on which the Common Stock is scheduled to trade on such exchange or market for less than 4.5 hours or any day that the Common Stock are suspended from trading during the final hour of trading on such exchange or market (or if such exchange or market does not designate in advance the closing time of trading on such exchange or market, then during the hour ending at 4:00 P.M., Eastern Time).

(b) **"Trading Market"** means NYSE American, the Nasdaq Capital Market, the Nasdaq Global Market, the Nasdaq Global Select Market or the New York Stock Exchange.

[Signature Page Follows]

Signature Page

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

**AVENUE THERAPEUTICS, INC.**

By: /s/ Alexandra MacLean  
Name: Alexandra MacLean, M.D.  
Title: Chief Executive Officer  
Address: 2 Gansevoort Street, 9th Floor  
New York, NY 10014

VSTOCK TRANSFER, LLC

By: /s/ Young D. Kim  
Name: Young D. Kim  
Title: Compliance Officer

Signature Page

**EXHIBIT A**  
GLOBAL WARRANT

[See attached.]

Signature Page

**EXHIBIT B**  
GLOBAL PRE-FUNDED WARRANT

[See attached.]

Signature Page

**EXHIBIT C**

WARRANT CERTIFICATE REQUEST NOTICE

To: \_\_\_\_\_ as Warrant Agent for \_\_\_\_\_ (the "Company")

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

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

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

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

[SIGNATURE OF HOLDER]

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

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

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

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

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

Signature Page

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**EXHIBIT D**  
AUTHORIZED REPRESENTATIVES

Name \_\_\_\_\_ Title \_\_\_\_\_ Signature \_\_\_\_\_

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Signature Page

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### Avenue Therapeutics Announces Pricing of \$12 Million Underwritten Public Offering

NEW YORK, Oct. 06, 2022 (GLOBE NEWSWIRE) -- Avenue Therapeutics, Inc. (Nasdaq: ATXI) (“Avenue” or the “Company”), a specialty pharmaceutical company focused on the development and commercialization of therapies for the treatment of central nervous system diseases, today announced the pricing of its underwritten public offering of 3,636,365 common and pre-funded units. Each common unit consists of one share of common stock and one warrant to purchase one share of common stock, and each pre-funded unit consists of one pre-funded warrant to purchase one share of common stock and one warrant to purchase one share of common stock. Each share of common stock (or pre-funded warrant) is being sold together with one warrant at a combined purchase price of \$3.30 per common unit (or \$3.2999 per pre-funded unit after reducing \$0.0001 attributable to the exercise price of the pre-funded warrants).

In addition, Avenue granted the underwriter a 45-day option to purchase additional shares of common stock, representing 15% of the number of shares of common stock (or pre-funded warrants) sold in the base offering and additional warrants, representing up to 15% of the warrants sold in the base offering, solely to cover over-allotments, if any, which would increase the total gross proceeds of the offering to approximately \$13.8 million, if the over-allotment option is exercised in full.

The offering is expected to close on October 11, 2022, subject to the satisfaction of customary closing conditions.

Avenue expects to use the net proceeds from the offering, together with its existing cash, to repurchase all of the shares of its common stock held by InvaGen Pharmaceuticals Inc., with the remainder to be used for general corporate purposes and working capital, including the development of its drug product candidates.

#### **Aegis Capital Corp. is acting as sole book-running manager for the offering.**

A registration statement on Form S-1 (File No. 333-267206) relating to the offering of the securities was filed with the U.S. Securities and Exchange Commission (SEC) and declared effective by the SEC on October 6, 2022. The offering is being made only by means of a prospectus, copies of which may be obtained by contacting Aegis Capital Corp., 1345 Avenue of the Americas, 27th Floor, New York, NY 10105, by telephone at (212) 813-1010 or by email at [syndicate@aegiscap.com](mailto:syndicate@aegiscap.com). Copies of the registration statement can be accessed through the SEC's website at [www.sec.gov](http://www.sec.gov).

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

#### **About Avenue Therapeutics**

Avenue Therapeutics, Inc. (Nasdaq: ATXI) is a specialty pharmaceutical company focused on the development and commercialization of therapies for the treatment of central nervous system diseases. Avenue is headquartered in New York City.

#### **Forward-Looking Statements**

This press release contains predictive or “forward-looking statements” within the meaning of the Private Securities Litigation Reform Act of 1995. All statements other than statements of current or historical fact contained in this press release, including statements that express our intentions, plans, objectives, beliefs, expectations, strategies, predictions or any other statements relating to our future activities or other future events or conditions are forward-looking statements. The words “anticipate,” “believe,” “continue,” “could,” “estimate,” “expect,” “intend,” “may,” “plan,” “predict,” “project,” “will,” “should,” “would” and similar expressions are intended to identify forward-looking statements. These statements are based on current expectations, estimates and projections made by management about our business, our industry and other conditions affecting our financial condition, results of operations or business prospects. These statements are not guarantees of future performance and involve risks, uncertainties and assumptions that are difficult to predict. Therefore, actual outcomes and results may differ materially from what is expressed or forecasted in, or implied by, the forward-looking statements due to numerous risks and uncertainties. Factors that could cause such outcomes and results to differ include, but are not limited to, risks and uncertainties arising from: expectations for increases or decreases in expenses; expectations for the clinical and pre-clinical development, manufacturing, regulatory approval, and commercialization of our pharmaceutical product candidate or any other products we may acquire or in-license; our use of clinical research centers and other contractors; expectations for incurring capital expenditures to expand our research and development and manufacturing capabilities; expectations for generating revenue or becoming profitable on a sustained basis; expectations or ability to enter into marketing and other partnership agreements; expectations or ability to enter into product acquisition and in-licensing transactions; expectations or ability to build our own commercial infrastructure to manufacture, market and sell our product candidate; acceptance of our products by doctors, patients or payors; our ability to compete against other companies and research institutions; our ability to secure adequate protection for our intellectual property; our ability to attract and retain key personnel; availability of reimbursement for our products; estimates of the sufficiency of our existing cash and cash equivalents and investments to finance our operating requirements, including expectations regarding the value and liquidity of our investments; the volatility of our stock price; expected losses expectations for future capital requirements; uncertainty surrounding the Baergic Bio acquisition; and those risks discussed in our filings which we make with the SEC. Any forward-looking statements speak only as of the date on which they are made, and we undertake no obligation to publicly update or revise any forward-looking statements to reflect events or circumstances that may arise after the date of this press release, except as required by applicable law. Investors should evaluate any statements made by us in light of these important factors.

#### **Contacts:**

Jaclyn Jaffe  
Avenue Therapeutics, Inc.  
(781) 652-4500  
[ir@avenuetx.com](mailto:ir@avenuetx.com)





### Avenue Therapeutics Announces Closing of \$12 Million Underwritten Public Offering

NEW YORK, Oct. 11, 2022 (GLOBE NEWSWIRE) -- Avenue Therapeutics, Inc. (Nasdaq: ATXI) ("Avenue" or the "Company"), a specialty pharmaceutical company focused on the development and commercialization of therapies for the treatment of central nervous system diseases, today announced the closing of its previously announced underwritten public offering of 3,636,365 common and pre-funded units. Each common unit consists of one share of common stock and one warrant to purchase one share of common stock, and each pre-funded unit consists of one pre-funded warrant to purchase one share of common stock and one warrant to purchase one share of common stock. Each share of common stock (or pre-funded warrant) was sold together with one warrant at a combined purchase price of \$3.30 per common unit (or \$3.2999 per pre-funded unit after reducing \$0.0001 attributable to the exercise price of the pre-funded warrants). The Company also simultaneously closed on the sale of an additional 545,454 warrants to purchase common stock, which were sold pursuant to a partial exercise of the underwriter's over-allotment option. Avenue received net proceeds of approximately \$10.4 million at closing after deducting underwriting discounts and commissions and other expenses of the offering.

Avenue expects to use the net proceeds from the offering, together with its existing cash, to repurchase all of the shares of its common stock held by InvaGen Pharmaceuticals Inc., with the remainder of the net proceeds to be used for general corporate purposes and working capital, including the development of its drug product candidates.

**Aegis Capital Corp. acted as sole book-running manager for the offering.**

McGuireWoods LLP is representing the Company and Kaufman & Canoles, P.C. is representing the underwriter.

A registration statement on Form S-1 (File No. 333-267206) relating to the offering of the securities was filed with the U.S. Securities and Exchange Commission (SEC) and declared effective by the SEC on October 6, 2022. The offering was made only by means of a prospectus, copies of which may be obtained by contacting Aegis Capital Corp., 1345 Avenue of the Americas, 27th Floor, New York, NY 10105, by telephone at (212) 813-1010 or by email at [syndicate@aegiscap.com](mailto:syndicate@aegiscap.com). Copies of the registration statement can be accessed through the SEC's website at [www.sec.gov](http://www.sec.gov).

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

#### About Avenue Therapeutics

Avenue Therapeutics, Inc. (Nasdaq: ATXI) is a specialty pharmaceutical company focused on the development and commercialization of therapies for the treatment of central nervous system diseases. Avenue is headquartered in New York City.

#### Forward-Looking Statements

This press release contains predictive or "forward-looking statements" within the meaning of the Private Securities Litigation Reform Act of 1995. All statements other than statements of current or historical fact contained in this press release, including statements that express our intentions, plans, objectives, beliefs, expectations, strategies, predictions or any other statements relating to our future activities or other future events or conditions are forward-looking statements. The words "anticipate," "believe," "continue," "could," "estimate," "expect," "intend," "may," "plan," "predict," "project," "will," "should," "would" and similar expressions are intended to identify forward-looking statements. These statements are based on current expectations, estimates and projections made by management about our business, our industry and other conditions affecting our financial condition, results of operations or business prospects. These statements are not guarantees of future performance and involve risks, uncertainties and assumptions that are difficult to predict. Therefore, actual outcomes and results may differ materially from what is expressed or forecasted in, or implied by, the forward-looking statements due to numerous risks and uncertainties. Factors that could cause such outcomes and results to differ include, but are not limited to, risks and uncertainties arising from: expectations for increases or decreases in expenses; expectations for the clinical and pre-clinical development, manufacturing, regulatory approval, and commercialization of our pharmaceutical product candidate or any other products we may acquire or in-license; our use of clinical research centers and other contractors; expectations for incurring capital expenditures to expand our research and development and manufacturing capabilities; expectations for generating revenue or becoming profitable on a sustained basis; expectations or ability to enter into marketing and other partnership agreements; expectations or ability to enter into product acquisition and in-licensing transactions; expectations or ability to build our own commercial infrastructure to manufacture, market and sell our product candidate; acceptance of our products by doctors, patients or payors; our ability to compete against other companies and research institutions; our ability to secure adequate protection for our intellectual property; our ability to attract and retain key personnel; availability of reimbursement for our products; estimates of the sufficiency of our existing cash and cash equivalents and investments to finance our operating requirements, including expectations regarding the value and liquidity of our investments; the volatility of our stock price; expected losses expectations for future capital requirements; uncertainty surrounding the Baergic Bio acquisition; and those risks discussed in our filings which we make with the SEC. Any forward-looking statements speak only as of the date on which they are made, and we undertake no obligation to publicly update or revise any forward-looking statements to reflect events or circumstances that may arise after the date of this press release, except as required by applicable law. Investors should evaluate any statements made by us in light of these important factors.

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