As filed with the Securities and Exchange Commission on October 24, 2022

Registration No. 333-267482

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

AMENDMENT NO. 1
TO

FORM S-1

REGISTRATION STATEMENT
UNDER
THE SECURITIES ACT OF 1933

NEUROBO PHARMACEUTICALS, INC.

(Exact name of registrant as specified in its charter)

Delaware	**2834**	**47-2389984**
(State or other jurisdiction of incorporation or organization)	(Primary Standard Industrial Classification Code Number)	(I.R.S. Employer Identification Number)

200 Berkeley Street, Office 19th Floor
Boston, Massachusetts, 02116
(857) 702-9600
(Address, including zip code, and telephone number, including area code, of registrant's principal executive offices)

Gil Price, M.D.
President and Chief Executive Officer
200 Berkeley Street, Office 19th Floor
Boston, Massachusetts, 02116
(857) 702-9600
(Name, address, including zip code, and telephone number, including area code, of agent for service)

Copies to:

Phillip D. Torrence, Esq.	**Michael F. Nertney, Esq.**
Honigman LLP	**Ellenoff Grossman & Schole LLP**
650 Trade Centre Way, Suite 200	**1345 Avenue of the Americas**
Kalamazoo, Michigan 49002	**New York, NY 10105-0302**
(269) 337-7700	**(212) 370-1300**

Approximate date of commencement of proposed sale to the public: As soon as practicable after this registration statement becomes effective.

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

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

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

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

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

Large accelerated filer	☐	Accelerated filer	☐
Non-accelerated filer	☒	Smaller reporting company	☒
		Emerging growth company	☐

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 7(a)(2)(B) of the Securities Act. ☐

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

Subject to completion, dated October 24, 2022

PRELIMINARY PROSPECTUS

NEUROBO PHARMACEUTICALS, INC.

714,853 Class A Units consisting of shares of common stock and warrants and
476,569 Class B Units consisting of shares of Series B Convertible Preferred Stock and warrants
(and shares of common stock underlying shares of Series B Convertible Preferred Stock and warrants)

This preliminary prospectus ("prospectus") relates to the offering of 714,853 Class A Units of NeuroBo Pharmaceuticals, Inc., a Delaware corporation (the "Class A Units") at an assumed public offering price of $12.59 per Class A Unit, the last reported sales price of our common stock on the Nasdaq Capital Market on October 17, 2022. Each Class A Unit consists of one share of our common stock and one warrant to purchase one share of our common stock at an exercise price of $ per share (or % of the price of each Class A Unit sold in the offering) which will be immediately exercisable upon issuance and will expire on the five-year anniversary of the original issuance date.

We are also offering to those purchasers, if any, whose purchase of Class A Units in this offering would otherwise result in such purchaser, together with its affiliates and certain related parties, beneficially owning more than 4.99% (or, at the election of the purchaser, 9.99%) of our outstanding shares of common stock immediately following the consummation of this offering, the opportunity to purchase, if any such purchaser so chooses, Class B Units, in lieu of Class A Units that would otherwise result in such purchaser's beneficial ownership exceeding 4.99% (or, at the election of the purchaser, 9.99%) of our outstanding shares of common stock. Each Class B Unit consists of one share of our Series B Convertible Preferred Stock (the "Series B Convertible Preferred Stock"), convertible into 476,569 shares of common stock and a warrant to purchase one share of common stock (together with the shares of common stock underlying such shares of Series B Convertible Preferred Stock and such warrants, the "Class B Units" and, together with the Class A Units, the "units") at a an assumed public offering price of $12.59 per Class B Unit, the closing price of our common stock on October 17, 2022.

The Class A Units and the Class B Units have no stand-along rights and will not be issued or certificated as stand-alone securities. The shares of common stock, Series B Convertible Preferred Stock and warrants comprising such units are immediately separable and will be issued separately in this offering. The shares of common stock or Series B Convertible Preferred Stock, as the case may be, and the warrants included in the Class A Units and the Class B Units can only be purchased together in this offering, but the securities contained in the Class A Units or Class B Units will be immediately separable upon issuance and will be issued separately. The shares of common stock issuable from time to time upon exercise of the warrants are also being offered by this prospectus.

Our common stock is listed on the Nasdaq Capital Market ("Nasdaq") under the symbol "NRBO". We have assumed a public offering price of $12.59 per unit, which represents the last reported sale price of our common stock as reported on Nasdaq on October 17, 2022. The final public offering price will be determined through negotiation between us and the underwriters in the offering and may be at a discount to the current market price. Therefore, the assumed public offering price used throughout this prospectus may not be indicative of the final public offering price.

There is no established trading market for the Series B Convertible Preferred Stock or warrants being offered, and we do not expect a market to develop. In addition, we do not intend to apply for the listing of the Series B Convertible Preferred Stock or the warrants on any national securities exchange or other trading market. Without an active trading market, the liquidity of the warrants will be limited. Except as otherwise indicated, all share and per share information in this prospectus gives effect to the reverse stock split of our outstanding common stock, which was effected at a ratio of one-for-thirty as of 5:00 p.m. Eastern Time on September 12, 2022.

We have entered into a securities purchase agreement with Dong-A ST Co. Ltd., ("Dong-A") which currently holds 10.8% of our outstanding common stock, pursuant to which, concurrently with and as a condition to the closing of the offering of units, (i) Dong-A will receive $22 million of our Series A Convertible Preferred Stock as an upfront payment in respect of the license agreement between us and Dong-A, dated as of September 14, 2022, and (ii) Dong-A will purchase, in a private offering, $15 million of our Series A Convertible Preferred Stock together with warrants substantially equivalent to the warrants issued as part of this offering. At such time as we obtain stockholder approval for the issuance of the common stock underlying the Series A Convertible Preferred Stock issued for the upfront payment and the Series A Convertible Preferred Stock issued in the private offering and the exercise of the warrants issued in the private offering, such shares of Series A Convertible Preferred Stock will be convertible into shares of common stock at a conversion price equal to the public offering price of the units being sold pursuant to this prospectus, subject to customary adjustments for forward and reverse stock splits, stock dividends and the like.

An investment in our securities involves a high degree of risk. Before making any investment decision, you should carefully read the discussion of the material risks of investing in securities in "Risk Factors" beginning on page 8 of this prospectus.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or determined if this prospectus is truthful or complete. Any representation to the contrary is a criminal offense.

	Per Class A Unit[1]	Per Class B Unit[2]	Total
Public offering price	$	$	$
Underwriter discounts and commissions[3]	$	$	$
Proceeds, before expenses, to us	$	$	$

(1) The public offering price and underwriting discount corresponds, in respect of the Class A Units, to (i) a public offering price per share of common stock of $ ($ net of the underwriting discount) and (ii) a public offering price per warrant of $ ($ net of the underwriting discount).

(2) The public offering price and underwriting discount in respect of the Class B Units corresponds to (i) a public offering price per share of Series B Convertible Preferred Stock of $ ($ net of the underwriting discount) and (ii) a public offering price per warrant of $ ($ net of the underwriting discount).

(3) Does not include the fee paid to the underwriters with respect to the private offering described in this prospectus. We have agreed to pay certain expenses of the underwriters in this offering. We refer you to "Underwriting" on page 78 for additional information regarding underwriting compensation.

The offering is being underwritten on a firm commitment basis. We have granted a 45-day option to the underwriters to purchase up to an additional 178,713 shares of common stock and warrants to purchase an additional 178,713 shares of common stock from us at the public offering price, less the underwriting discounts payable by us, to cover over-allotments, if any. The option may be used to purchase shares of common stock and/or warrants, or any combination thereof, as determined by the underwriters.

The underwriters expect to deliver the securities to investors on or about , 2022.

Sole Book-Running Manager

Ladenburg Thalmann

The date of this prospectus is , 2022

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ABOUT THIS PROSPECTUS

This prospectus is part of a registration statement that we filed with the Securities and Exchange Commission, or the SEC. Before making your investment decision, we urge you to carefully read this prospectus and all of the information contained in the documents incorporated by reference in this prospectus, as well as the additional information described under the headings "Where You Can Find More Information" and "Incorporation of Certain Documents by Reference."

This prospectus does not constitute an offer to sell or the solicitation of an offer to buy any securities other than the securities described in this prospectus or an offer to sell or the solicitation of an offer to buy such securities in any circumstances in which such offer or solicitation is unlawful. You should assume that the information appearing in this prospectus, the documents incorporated by reference and any related free writing prospectus is accurate only as of their respective dates. Our business, financial condition, results of operations and prospects may have changed materially since those dates.

Neither we nor the underwriters have authorized anyone to provide you with any information or to make any representations other than that contained in this prospectus or in any free writing prospectus we may authorize to be delivered or made available to you. We take no responsibility for, and can provide no assurance as to the reliability of, any other information that others may give you. Neither we nor the underwriters are making an offer to sell securities in any jurisdiction in which the offer or sale is not permitted. The information in this prospectus is accurate only as of the date of this prospectus, regardless of the time of delivery of this prospectus or of any sale of our securities and the information in any free writing prospectus that we may provide to you in connection with this offering is accurate only as of the date of that free writing prospectus. Our business, financial condition, results of operations and prospects may have changed since those dates.

To the extent there is a conflict between the information contained in this prospectus, on the one hand, and the information contained in any document incorporated by reference in this prospectus, on the other hand, you should rely on the information in this prospectus, provided that if any statement in one of these documents is inconsistent with a statement in another document having a later date — for example, a document incorporated by reference in this prospectus — the statement in the document having the later date modifies or supersedes the earlier statement.

We further note that the representations, warranties and covenants made by us in any agreement that is filed as an exhibit to any document that is incorporated by reference herein were made solely for the benefit of the parties to such agreement, including, in some cases, for the purpose of allocating risk among the parties to such agreement, and should not be deemed to be a representation, warranty or covenant to you. Moreover, such representations, warranties or covenants were accurate only as of the date when made. Accordingly, such representations, warranties and covenants should not be relied on as accurately representing the current state of our affairs.

For investors outside the United States: We have not, and the underwriters have not, done anything that would permit this offering, or possession or distribution of this prospectus, in any jurisdiction where action for that purpose is required, other than in the United States. Persons outside the United States who come into possession of this prospectus must inform themselves about, and observe any restrictions relating to, the offering of the shares of common stock and the distribution of this prospectus outside of the United States.

SUMMARY

This summary highlights information contained elsewhere in this prospectus and does not contain all of the information that you should consider in making your investment decision. Before deciding to invest in our securities, you should read this entire prospectus and the documents incorporated by reference herein and therein carefully, including our financial statements and related notes, the information in the section "Risk Factors," "Where You Can Find More Information" and "Incorporation of Certain Documents by Reference." Unless otherwise specified or the context otherwise requires, references in this prospectus to the "Company," "NeuroBo," "Registrant," "we," "us," and "our" refer to NeuroBo Pharmaceuticals, Inc. and its wholly owned subsidiaries.

All trademarks or trade names referred to in this prospectus are the property of their respective owners. Solely for convenience, the trademarks and trade names in this prospectus are referred to without the ® and ™ symbols, but such references should not be construed as any indicator that their respective owners will not assert, to the fullest extent under applicable law, their rights thereto. We do not intend the use or display of other companies' trademarks and trade names to imply a relationship with, or endorsement or sponsorship of us by, any other companies.

Company Overview

NeuroBo Pharmaceuticals, Inc. (the "Company," "NeuroBo," "we," "us" or "our") is a clinical-stage biotechnology company which has entered into a license agreement (the "2022 License Agreement") with Dong-A ST Co. Ltd. ("Dong-A") to inlicense the rights to two assets, focused on treatment of nonalcoholic steatohepatitis ("NASH") and obesity. The effectiveness of the 2022 License Agreement is subject to consummation of a Qualified Financing (as described below). Concurrently with the 2022 License Agreement, we entered into a securities purchase agreement with Dong-A (the "Securities Purchase Agreement") pursuant to which Dong-A agreed to purchase $15 million in Series A Convertible Preferred Stock and warrants on substantially the same terms as this offering subject to consummation of a Qualified Financing. It is intended that this offering will be a Qualified Financing and, if this offering is consummated, the 2022 License Agreement will be effective and Dong-A will consummate the purchase under the Securities Purchase Agreement. Prior to this offering, we have been focused on four therapeutic programs designed to impact a range of indications in coronavirus, neurodegenerative and cardiometabolic disease, which we have currently suspended. Additional information regarding the general development of our business is set forth in our Annual Report on Form 10-K for the year ended December 31, 2021.

On September 14, 2022, we entered into the 2022 License Agreement with Dong-A pursuant to which, subject to the conditions set forth therein, we would hold an exclusive license (other than in the Republic of Korea) to two proprietary compounds for specified indications. The 2022 License Agreement covers the rights to a compound referred to as DA-1241 for treatment of NASH and a compound referred to as DA-1726 for treatment of Obesity and NASH. We may also develop DA-1241 for the treatment of type 2 diabetes mellitus ("T2D"). The 2022 License Agreement calls for an upfront payment of $22,000,000, which will be paid in Series A Convertible Preferred Stock of NeuroBo at the public offering price, milestone payments and royalties. The effectiveness of the 2022 License Agreement is contingent upon our raising a total of at least $15 million in a Qualified Financing upon which Dong-A will fund an additional $15 million, which is being sold in the private offering.

DA-1241 is a novel G-Protein-Coupled Receptor 119 (GPR119) agonist with development optionality as a standalone and/or combination therapy for both NASH and T2D. Agonism of GPR119 in the gut promotes the release of key gut peptides GLP-1, GIP, and PYY. These peptides play a further role in glucose metabolism, lipid metabolism and weight loss. DA-1241 has beneficial effects on glucose, lipid profile and liver inflammation, supported by potential efficacy demonstrated during in vivo preclinical studies. The therapeutic potential of DA-1241 has been demonstrated in multiple pre-clinical animal models of NASH and T2D where DA-1241 reduced hepatic steatosis, inflammation, fibrosis, and improved glucose control. Furthermore, in Phase 1a and 1b human trials DA-1241 was well tolerated in both healthy volunteers and those with T2D. If this offering is consummated and the 2022 License Agreement is effective, then we intend to initiate a Phase 2a study with the goal of establishing efficacy of DA-1241 in NASH and T2D.

DA-1726 is a novel oxyntomodulin ("OXM") analogue functioning as a GLP1R/GCGR dual agonist for the treatment of NASH and obesity, that is to be administered once weekly subcutaneously. DA-1726 as

a dual agonist of GLP-1 receptors ("GLP1R") and glucagon receptors ("GCGR"), leading to weight loss through reduced appetite and increased energy expenditure. DA-1726 has a well understood mechanism and, in preclinical mice models, resulted in improved weight loss, as well as reduced hepatic steatosis, inflammation, and fibrosis compared to semaglutide and cotadutide (another OXM analogue).

Each of DA-1241 and DA-1726 is currently being developed for the treatment of NASH. NASH is a severe form of nonalcoholic fatty liver disease ("NAFLD"), characterized by inflammation and fibrosis in the liver that can progress to cirrhosis, liver failure, hepatocellular carcinoma ("HCC") and death. There are currently no approved products for the treatment of NASH.

The prevalence of NAFLD, which affects approximately 25% of the global population, and NASH, which develops in approximately 12% to 14% of NAFLD patients, is growing and is driven primarily by the worldwide obesity epidemic. The critical pathophysiologic mechanisms underlying the development and progression of NASH include reduced ability to handle lipids, increased insulin resistance, injury to hepatocytes and liver fibrosis in response to hepatocyte injury. Patients with NASH frequently have other significant metabolic co-morbidities such as obesity, hyperglycemia, dyslipidemia and systemic hypertension (a constellation of which is commonly referred to as metabolic syndrome) and these further contribute to the risk of cardiovascular disease. The number of NASH cases in the United States is projected to expand from 16.5 million in 2015 to 27 million in 2030, with similar prevalence growth expected in Europe. Diet and exercise are currently the standard of care for NAFLD and NASH, but adherence to this treatment regimen is poor and there remains a high unmet need in the treatment of NASH.

We have other product candidates focused on the developing novel pharmaceuticals to treat COVID-19 and neurodegenerative disorders.

- *ANA001* is a proprietary oral niclosamide formulation and is being developed as a treatment for patients with moderate COVID-19. Niclosamide is a potential oral antiviral and anti-inflammatory agent with a long history of use and well-understood safety in humans. Enrollment in the Phase 2 clinical trial of ANA001 for treatment of moderate COVID-19 in hospitalized patients was closed in July 2022 and the clinical trial moved to the data analysis phase. Following an analysis of the clinical trial data, which is expected in the fourth quarter of 2022, the Company will be able to begin discussions with the Food and Drug Administration regarding the next steps in the clinical development of ANA001 for treatment of COVID-19.
- *NB-01* has the potential to treat painful diabetic neuropathy (PDN) as a first-line pain management therapy for PDN.
- *NB-02* has the potential to treat the symptoms of cognitive impairment and modify the progression of neurodegenerative diseases associated with the misfunction of a protein called tau, and with amyloid beta plaque deposition.
- *Gemcabene* is currently being assessed for various indications including COVID-19 in combination with ANA001.

Strategy

NeuroBo's goal is to discover, develop and commercialize novel therapeutics for the treatment of cardiovascular and metabolic diseases. The key elements of NeuroBo's business strategy to achieve this goal include:

- Advance DA-1241 through the FDA regulatory process to obtain approval for the treatment of NASH and T2D initially by starting a Phase 2a trial to establish an early signal of efficacy in NASH and T2D.
- Explore various avenues to advance DA-1241 to FDA approval, including, if the Phase 2 clinical trials are successful, securing a pharmaceutical partner to advance work on a global Phase 3 program.
- Advance DA-1726 through IND and initiation of human clinical trials with the initial goal of having DA-1726 be IND-ready by the first quarter of 2023.
- Pursue ANA001 as a treatment and/or prophylaxis for COVID-19.

- Explore alternatives for the future of NB-01, including assessing whether to pursue NB-01 as an orphan drug and/or as a nutraceutical product.
- Explore out licensing opportunities for NB-02.
- Explore additional acute therapeutic indications for gemcabene that may strengthen our pipeline of assets.
- Extend the pipeline of drugs as NeuroBo continues to build and develop its product portfolio by opportunistically pursuing strategic partnerships.
- Continue to hire highly qualified management and personnel in advancing drug development, achieving marketing approval, and implementing its corporate growth strategy.

Other Recent Developments

Reverse Stock Split

On September 12, 2022, we effected a reverse stock split of our outstanding shares of our common stock at a ratio of one-for-thirty. The ratio was approved by our Board on September 9, 2022 and the reverse stock split was approved by our stockholders on June 9, 2022. Our common stock began trading on a split-adjusted basis on Nasdaq on September 13, 2022. Please see "*Summary Financial Data*" below for a presentation of the effect of the reverse stock split on our prior financial statements.

Quarter-ended September 30, 2022 Preliminary Financial Information

The Company's estimating no revenue for the three months ended September 30, 2022. Net cash used in operating activities for the three months ended September 30, 2022 is projected to be approximately $2.4 million, 6% lower than the net cash used in operating activities for the prior-year quarter ended September 30, 2021. The Company had a cash balance of approximately $6.4 million as of September 30, 2022. The Company has not yet completed their normal quarterly review procedures for the three months ended September 30, 2022, and as such, the final results for this period may differ from these estimates. Any such changes could be material. These estimates should not be viewed as a substitute for full interim financial statements prepared in accordance with U.S. generally accepted accounting principles. The preliminary results provided above are not necessarily indicative of the results to be achieved for the remainder of fiscal year 2022 or any future period.

The preliminary financial information included above related to the Company has been prepared by, and is the responsibility of, our management. BDO USA, LLP, our independent registered public accounting firm, has not audited, reviewed, examined, compiled nor applied agreed-upon procedures with respect to the preliminary financial information and, accordingly, BDO USA, LLP does not express an opinion or any other form of assurance with respect thereto. The BDO USA, LLP report incorporated by reference into this prospectus relates to the Company's previously issued financial statements. It does not extend to the preliminary financial information and should not be read to do so.

Corporate Information

Our principal executive offices are located at 200 Berkeley Street, 19th Floor, Boston, Massachusetts, 02116 and our telephone number is 857-702-9600. We maintain a corporate website at www.neurobopharma.com. We make available free of charge through our Internet website our annual reports on Form 10-K, quarterly reports on Form 10-Q and current reports on Form 8-K, and any amendments to these reports, as soon as it is reasonably practicable after we electronically file such material with, or furnish such material to, the SEC. We are not including the information on our website as a part of, nor incorporating it by reference into, this prospectus or the registration statement of which it forms a part. Additionally, the SEC maintains a website that contains annual, quarterly, and current reports, proxy statements, and other information that issuers (including us) file electronically with the SEC. The SEC's website address is http://www.sec.gov.

The Offering	
Class A Units offered by us	We are offering 714,853 Class A Units, each Class A Unit consisting of one share of common stock and one warrant to purchase one share of common stock.
Public Offering Price Per Class A Unit	$12.59 combined public offering price for each Class A Unit based upon an assumed public offering price of $12.59, the closing price of our common stock on The Nasdaq Capital Market on October 17, 2022.
Class B Units offered by us	We are also offering to those purchasers, if any, whose purchase of Class A Units in this offering would otherwise result in the purchaser, together with its affiliates and certain related parties, beneficially owning more than 4.99% (or, at the election of the purchaser, 9.99%) of our outstanding shares of common stock immediately following the consummation of this offering, the opportunity to purchase, if such purchasers so choose, 476,569 Class B Units, in lieu of Class A Units that would otherwise result in any such purchaser's beneficial ownership exceeding 4.99% (or, at the election of the purchaser, 9.99%) of our outstanding shares of common stock. Each Class B Unit consists of one share of Series B Convertible Preferred Stock convertible into one share of common stock and one warrant to purchase one share of common stock (together with the shares of our common stock underlying such shares of Series B Convertible Preferred Stock and warrants).
Public Offering Price Per Class B Unit	$12.59 combined public offering price for each Class B Unit based upon an assumed public offering price of $12.59, the closing price of our common stock on The Nasdaq Capital Market on October 17, 2022.
Warrants offered by us	Each unit includes one warrant, which will have an exercise price of $ per share, will be immediately exercisable upon issuance and will expire on the fifth anniversary of the original issuance date. This prospectus also relates to the offering of the shares of common stock issuable upon exercise of the warrants.
Issuance of Series A Convertible Preferred Stock for Upfront License Payment and Private Offering	We have entered into the Securities Purchase Agreement with Dong-A pursuant to which, concurrently with and as a condition to the closing of the offering of units, Dong-A will receive $22 million of our Series A Convertible Preferred Stock for the Upfront License Payment and Dong-A will purchase, in a private offering, $15 million of our Series A Convertible Preferred Stock and warrants with substantially the same terms as the warrants sold in this offering. At such time as we obtain stockholder approval for the issuance of the common stock underlying the Series A Convertible Preferred Stock issued for the upfront payment and the Series A Convertible Preferred Stock issued in the private offering and the exercise of the warrants issued in the private offering, such shares of Series A Convertible Preferred Stock will automatically convert into shares of common stock at a conversion price equal to the public offering price of the units being sold pursuant to this prospectus,

	subject to customary adjustments for forward and reverse stock splits, stock dividends and the like. The closing of the offering of units being made pursuant to this prospectus is contingent upon the completion of the private offering and the closing of the private offering is contingent upon the completion of the offering of units being made pursuant to this prospectus. The underwriters shall receive compensation for the purchase or sale of the shares of the Series A Convertible Preferred Stock in the private offering. See "Upfront License Payment and Private Offering," "Business — 2022 License Agreement," "Description of Capital Stock — Preferred Stock — Series A Convertible Preferred Stock" and "Securities Being Sold in this Offering — Series B Convertible Preferred Stock".
Shares of common stock to be outstanding after this offering[(1)]	1,603,546 shares of common stock (or 1,782,259 shares of common stock if the underwriters exercise their option in full) (assuming the sale of all units covered by this prospectus, no conversion of the Series B Convertible Preferred Stock, no exercise of any warrants issued in this offering and no exercise of outstanding options issued under our equity incentive plans and based on 888,693 shares outstanding as of September 14, 2022).
Underwriters' option to purchase additional shares and/or warrants	We have granted the underwriters an option, exercisable for forty-five (45) days after the date of this prospectus, to purchase up to an additional 178,713 shares of common stock and/or 178,713 warrants at the public offering price less the underwriting discounts payable by us, which may be purchased in any combination of common stock and warrants.
Use of proceeds	We intend to use the net proceeds from this offering for funding development of our new in-licensed product candidates, general corporate purposes and working capital.
Risk factors	You should carefully consider the risk factors described in the section of this prospectus titled "Risk Factors," together with all of the other information included and incorporated by reference in this prospectus, before deciding to invest in our securities.
Market and trading symbol	Our common stock is listed on the Nasdaq Capital Market under the symbol "NRBO". We do not intend to list the shares of Series B Convertible Preferred Stock or the warrants on any securities exchange or nationally recognized trading system. Without a trading market, the liquidity of the Series B Convertible Preferred Stock or the warrants will be extremely limited.

(1) Does not give effect to any conversion of the Series A Convertible Preferred Stock being issued as part of the Upfront License Payment or the private offering or the exercise of the warrants being offered pursuant to the private offering.

Assumptions Used Throughout This Prospectus

Unless otherwise stated in this prospectus, the total number of shares of common stock outstanding as of the date of this prospectus and after this offering is based on 888,693 shares outstanding as of September 14,

2022 after giving effect to the 2022 Reverse Stock Split, assumes the sale of 1,191,422 units based on an assumed public offering price of $12.59, the last reported sales price of our shares of common stock on the Nasdaq Capital Market on October 17, 2022, and excludes the following other securities as of September 14, 2022:

- 36,493 shares of common stock issuable upon the exercise of stock options outstanding as of June 30, 2022, at a weighted-average exercise price of $99.62 per share;
- 228,235 shares of common stock issuable upon the exercise of warrants outstanding as of June 30, 2022, at a weighted-average exercise price of $140.07;
- 167,748 shares of common stock reserved for future issuance under our 2019 Equity Incentive Plan as of June 30, 2022;
- 12,778 shares of common stock reserved for future issuance under our 2021 Inducement Plan as of June 30, 2022;
- 1,191,422 shares of common stock issuable upon exercise of the warrants included in this offering at an exercise price of $ per share;
- 1,747,419 shares of common stock issuable upon conversion of the Series A Convertible Preferred Stock issued as part of the Upfront License Payment; and
- 1,191,422 shares of common stock issuable upon conversion of the Series A Convertible Preferred Stock issued in the private offering and 1,191,422 shares of common stock issuable upon exercise of the warrants included in the private offering.

On September 12, 2022, we effected a reverse stock split of our outstanding shares of our common stock at a ratio of one-for-thirty, or the 2022 Reverse Stock Split. The ratio was approved by our Board on September 9, 2022 and the 2022 Reverse Stock Split was approved by our stockholders on June 9, 2022. As a result of the 2022 Reverse Stock Split, every thirty (30) shares of our common stock outstanding was automatically changed and reclassified into one (1) new share of common stock. Holders of common stock that would have otherwise received a fractional share of common stock pursuant to the 2022 Reverse Stock Split received cash in lieu of the fractional share. Unless indicated otherwise, the numbers set forth in this prospectus have been adjusted to reflect the 2022 Reverse Stock Split.

Except as otherwise noted, all information in this prospectus reflects and assumes (i) no conversion of Series B Convertible Preferred Stock, (ii) no exercise of outstanding options issued under our equity incentive plans, (iii) no exercise of any warrants issued in this offering and (iv) no exercise of the underwriters' option to purchase additional shares of common stock and/or warrants to purchase additional shares of common stock.

SELECTED FINANCIAL DATA

On September 12, 2022, we effected the 2022 Reverse Stock Split. The following selected financial data presents the Statement of Operations data reflecting the effect of the 2022 Reverse Stock Split on the years ended December 31, 2021 and 2020 and the six-month periods ended June 30, 2022 and 2021. We derived the selected financial data from our consolidated financial statements included in our Annual Report on Form 10-K for the year ended December 31, 2021 and our condensed consolidated financial statements included in our Quarterly Report on Form 10-Q for the quarter ended June 30, 2022, as adjusted to reflect the 2022 Reverse Stock Split for all periods presented. Our results for interim periods are not necessarily indicative of the results that may be expected for the full year or any other future period.

	As Reported		As Adjusted	
	For the Year Ended December 31,		For the Year Ended December 31,	
Statement of Operations data: (in thousands, except share and per share amounts)	**2021**	**2020**	**2021**	**2020**
Operating expenses:				
Research and development	$ 6,546	$ 4,531	$ 6,546	$ 4,531
Acquired in-process research and development	—	17,339	—	17,339
General and administrative	8,752	7,846	8,752	7,846
Total operating expenses	15,298	29,716	15,298	29,716
Loss from operations	(15,298)	(29,716)	(15,298)	(29,716)
Other income, net	14	38	14	38
Net loss	$ (15,284)	$ (29,678)	$ (15,284)	$ (29,678)
Net loss per share, basic and diluted	$ (0.66)	$ (1.83)	$ (19.81)	$ (54.90)
Weighted average shares of common stock outstanding, basic and diluted	23,143,792	16,217,339	771,422	540,534

	As Reported		As Adjusted	
	For the Six Months Ended June 30,		For the Six Months Ended June 30,	
Statement of Operations data: (in thousands, except share and per share amounts)	**2022**	**2021**	**2022**	**2021**
Operating expenses:				
Research and development	$ 1,902	$ 3,155	$ 1,902	$ 3,155
General and administrative	4,192	4,101	4,192	4,101
Total operating expenses	6,094	7,256	6,094	7,256
Loss from operations	(6,094)	(7,256)	(6,094)	(7,256)
Other (expense) Income, net	(84)	11	(84)	11
Net loss	$ (6,178)	$ (7,245)	$ (6,178)	$ (7,245)
Net loss per share, basic and diluted	$ (0.23)	$ (0.33)	$ (6.95)	$ (9.92)
Weighted average shares of common stock outstanding, basic and diluted	26,661,771	21,909,464	888,693	730,276

RISK FACTORS

An investment in our securities has a high degree of risk. Before you invest you should carefully consider the risks and uncertainties described below and the other information in this prospectus. Any of the risks and uncertainties set forth herein and therein could materially and adversely affect our business, results of operations and financial condition, which in turn could materially and adversely affect the trading price or value of our securities. Additional risks not currently known to us or which we consider immaterial based on information currently available to us may also materially adversely affect us. As a result, you could lose all or part of your investment.

Risk Factor Summary

- NeuroBo expects to incur losses for the foreseeable future and may never achieve or maintain profitability, and there is substantial doubt about NeuroBo's ability to continue as a going concern;
- NeuroBo will need additional financings to fund operations and such additional financings may cause dilution to existing stockholders, restrict NeuroBo's operations or require NeuroBo to relinquish its technologies;
- The timing and costs related to the clinical development of NeuroBo's products are difficult to predict, and any delays in NeuroBo's clinical trials may lead to a delay in the submission of marketing approval applications;
- NeuroBo may be required to make significant payments under the 2022 License Agreement;
- The regulatory review and approval processes of the FDA and comparable foreign regulatory authorities are lengthy, time-consuming and inherently unpredictable;
- NeuroBo's pursuit of potential therapeutic and prophylactic treatments for COVID-19 is in an early stage and subject to many risks, and its COVID-19 product candidates may not be approved in a timely manner, if at all;
- In light of the COVID-19 pandemic, it is possible that one or more government entities may take actions that directly or indirectly have the effect of abrogating some of NeuroBo's rights or opportunities;
- We are currently evaluating alternatives with respect to NB-01 and may not be able to develop NB-01 pursuant to other pathways, including as an orphan drug or as a nutraceutical candidate;
- Undesirable side effects from future product candidates could delay or prevent their marketing approval, limit the commercial profile of an approved label, or result in significant negative consequences following marketing approval, and the development of such product candidates exposes NeuroBo to additional risks;
- NeuroBo may engage in future acquisitions, in-licenses of technology, strategic alliances or enter into additional licensing arrangements that could disrupt its business, cause dilution to the organization's stockholders, harm its financial condition and operating results or result in no benefits being realized from such engagement;
- Enrollment and retention of patients in clinical trials is an expensive and time-consuming process and could be made more difficult or rendered impossible by multiple factors outside of NeuroBo's control;
- NeuroBo faces substantial competition, which may result in others discovering, developing or commercializing products before or more successfully than it does;
- NeuroBo's commercial success depends upon attaining significant market acceptance of its product candidates, if approved, among hospitals, physicians, patients and healthcare payors;
- Product liability lawsuits against NeuroBo could cause it to incur substantial liabilities and could limit commercialization of any product candidate that it may develop;
- NeuroBo relies on third parties to develop NeuroBo's preclinical studies, clinical trials, research programs and product candidates and to manufacture its product candidates and preclinical and

clinical drug supplies. If these third parties do not successfully carry out their contractual duties or meet expected deadlines or if they engage in misconduct or other improper activities or if NeuroBo is unable to engage with these third parties, it could have a material adverse effect on NeuroBo's business and NeuroBo's obtaining of regulatory approval and commercialization of its product candidates;

- Any product candidate for which NeuroBo obtains marketing approval could be subject to marketing restrictions or withdrawal from the market, and NeuroBo may be subject to penalties if it fails to comply with regulatory requirements or if it experiences unanticipated problems with our products;
- NeuroBo or any of its potential collaborators may never receive regulatory approval to market NeuroBo's product candidates outside of the United States;
- Mechanisms that NeuroBo may utilize to expedite and/or reduce the cost for development or approval of its product candidates may not lead to faster or less expensive development, regulatory review or approval process;
- Legislation may increase the difficulty and cost to obtain marketing approval of and commercialize its product candidates, and governments outside the United States tend to impose strict price controls, which also may adversely affect NeuroBo's revenues;
- NeuroBo's relationships with healthcare providers and third-party payors will be subject to applicable healthcare laws and regulations, which could expose NeuroBo to certain penalties and consequences;
- NeuroBo's compliance with legal standards related to foreign trade could impair its ability to compete in domestic and international markets, and NeuroBo could face criminal liability and other serious consequences for violations;
- Certain tax matters, including NeuroBo's ability to use its NOLs to offset future taxable income may be subject to certain limitations, could impact its results of operations and financial conditions;
- Inadequate funding for the FDA and other government agencies could prevent those agencies from performing normal business functions on which the operation of NeuroBo's business may rely, which could negatively impact NeuroBo's business;
- Federal legislation and actions by state and local governments may permit reimportation of drugs from foreign countries into the United States, including foreign countries where the drugs are sold at lower prices than in the United States, which could adversely affect NeuroBo's operating results;
- If NeuroBo is unable to obtain, maintain and protect sufficient intellectual property rights, its competitive position could be harmed;
- NeuroBo may become involved in lawsuits to protect or enforce its intellectual property, which could be expensive, time consuming, unsuccessful and could distract NeuroBo's personnel from their normal responsibilities;
- If NeuroBo receives stockholder approval for the conversion of the Series A Convertible Preferred Stock that will be issued to Dong-A if this offering is completed, Dong-A may have a significant interest in and control NeuroBo, and as a result, Dong-A's interests may conflict with NeuroBo's or yours in the future;
- Provisions in NeuroBo's corporate charter documents and under Delaware law could make an acquisition of NeuroBo more difficult and may prevent attempts by NeuroBo's stockholders to replace or remove NeuroBo's current management;
- NeuroBo is a "smaller reporting company", which could make its common stock less attractive to investors;
- NeuroBo has identified material weaknesses in its internal control over financial reporting that could, if not remediated, result in material misstatements in its financial statements or impair its ability to produce accurate and timely consolidated financial statements;
- NeuroBo's obtaining and maintaining patent protection could be reduced or eliminated for non-compliance with certain requirements imposed by governmental patent agencies;

- NeuroBo's business and operations would suffer in the event of system failures or unplanned events;
- Any failure, inadequacy, interruption or security lapse of NeuroBo's information technology could prevent NeuroBo from accessing critical information or expose NeuroBo to liability;
- An active trading market for NeuroBo's common stock may not be maintained, and there is no public market for the Series B Convertible Preferred Stock or warrants;
- If securities analysts do not publish research or reports about NeuroBo's business or if they publish negative evaluations of NeuroBo's stock, the price of NeuroBo's stock could decline;
- NeuroBo incurs increased costs as a result of operating as a public company and its management is required to devote substantial time to compliance initiatives;
- NeuroBo does not anticipate declaring or paying, in the foreseeable future, any cash dividends on its capital stock and, consequently, the ability of its stockholders to achieve a return on their investment will depend on appreciation in the price of NeuroBo's common stock;
- NeuroBo's Bylaws designate the Court of Chancery of the State of Delaware as the sole and exclusive forum for certain types of actions and proceedings that may be initiated by NeuroBo's stockholders, which could limit the ability of NeuroBo's stockholders to obtain a favorable judicial forum for disputes with NeuroBo or its directors, officers or employees;
- Unstable market and economic conditions may have serious adverse consequences on NeuroBo's business, financial condition and stock price;
- NeuroBo's management will have broad discretion and flexibility in how the net proceeds from this offering are used, and it may use the net proceeds in ways with which you disagree or which may not prove effective;
- The liquidity and trading volume of NeuroBo's common stock could be low, its ownership will be concentrated and the market price of its common stock may be highly volatile;
- NeuroBo's common stock may be delisted from the Nasdaq Capital Market if its noncompliance with the continued listing requirements continues;
- You will incur immediate and substantial dilution as a result of this offering; and
- The terms of the Series B Convertible Preferred Stock and the warrants could impede NeuroBo's ability to enter into certain transactions or obtain additional financing.

Risks Related to the Business

We have incurred losses since inception, we anticipate that we will incur continued losses for the foreseeable future and there is substantial doubt about our ability to continue as a going concern for the full one-year period following the date of this prospectus. We require additional financing to accomplish our long-term business plan and failure to obtain necessary capital when needed on acceptable terms, or at all, could force us to delay, limit, reduce or terminate our operations.

We have experienced net losses and negative cash flows from operating activities since our inception and have an accumulated deficit of $88.0 million as of June 30, 2022. It is possible we will never generate revenue or profit.

As of June 30, 2022, we had cash and cash equivalents of $8.8 million. If we do not raise funds in this offering, we will not be able to consummate the 2022 License Agreement and we expect that our cash and cash equivalents will be adequate to fund operations into the first quarter of 2023.

If we consummate this offering and the consummate the 2022 License Agreement, we expect that our costs will increase significantly as we advance the development of these product candidates through clinical trials and other research. Because of the numerous risks and uncertainties associated with our commercialization efforts and future product development and ongoing government investigation, we are unable to predict when we will become profitable, and we may never become profitable. Even if we do achieve profitability, we may not be able to sustain or increase our profitability.

The amount and timing of any expenditures needed to implement our commercial strategy will depend on numerous factors, including:

- timing of clinical trials, including our ability to recruit clinical sites and enroll patients and timing of receipt of necessary approvals to commence clinical trials;
- timing and cost structure of product manufacturing for our clinical trials;
- our ability to establish and maintain strategic sub-licensing, collaboration, partnering or other arrangements and the financial terms of such agreements;
- the timing, receipt, and amount of license fees and sales of, or royalties on, our future products or future improvements on our existing products, if any;
- the cost to establish, maintain, expand, and defend the scope of our intellectual property portfolio, as well as any other action required in connection with licensing, preparing, filing, prosecuting, defending, and enforcing any patents or other intellectual property rights;
- the emergence of competing technologies and other adverse market developments; and
- our ability to achieve sufficient market acceptance, the ability for our customers to get coverage and adequate reimbursement from third-party payors and our ability to achieve acceptable market share.

If we raise additional capital or develop and/or commercialize our products with third parties through marketing and distribution arrangements or other collaborations, strategic alliances or licensing arrangements, we may have to develop our products on a slower timeline or relinquish certain valuable rights to our products, technologies, future revenue streams or research programs or grant licenses on terms that may not be favorable to us. If we raise additional capital through public or private equity offerings, the ownership interest of our existing stockholders will be diluted, and the terms of these securities may include liquidation or other preferences that adversely affect our stockholders' rights. If we raise additional capital through debt financing, we may be subject to covenants limiting or restricting our ability to take specific actions, such as incurring additional debt or making capital expenditures. If we are unable to obtain adequate financing on commercially reasonable terms when needed, we may have to delay, reduce the scope of or suspend our sales and marketing efforts, which would have a material adverse effect on our business, financial condition, and results of operations. We also expect the continuing economic uncertainty resulting from the COVID-19 pandemic to have a negative impact on our ability to secure additional financing in a timely manner or on favorable terms, if at all.

We have determined that there is substantial doubt about our ability to continue as a going concern, and we will need additional financings to execute our business plan and to fund our operations. We will need to raise additional funds to operate our business, but additional funds may not be available on acceptable terms, or at all. Any inability to raise required capital when needed could harm our liquidity, financial condition, business, operating results and prospects.

We do not yet generate revenues from our operations to fund our activities and are therefore dependent upon external sources for financing our operations. As a result, our financial statements include disclosures expressing substantial doubt about our ability to continue as a going concern. Our financial statements do not include any adjustments that might result from the outcome of the uncertainty regarding our ability to continue as a going concern. This disclosure with respect to our ability to continue as a going concern could materially limit our ability to raise additional funds through the issuance of equity or debt securities or otherwise. Future reports on our financial statements may continue to include such disclosures. If we cannot continue as a going concern, our stockholders may lose their entire investment in our common stock.

Historically, we have financed our operations through private and public placement of equity securities. Our ability to obtain financing is subject to multiple risks, many of which are beyond our control. We intend to raise additional capital in order to fund our operations and grow our business. We expect that we will continue to generate substantial operating losses for the foreseeable future assuming that the 2022 License Agreement is consummated and this offering is consummated until we complete development of DA-1241 or DA-1726 or our other product candidates and seek regulatory approvals to market such product candidates.

We plan to continue to fund our operations primarily through utilization of our current financial resources and additional raises of capital. We may raise funds from our current investors as well as potential outside investors. We expect to finance future cash needs through public or private equity or debt offerings or product collaborations. However, there is no assurance that such funding will be available to us or that it will be obtained on terms favorable to us or will provide us with sufficient funds to meet our objectives. Any failure to raise capital as and when needed could have a negative impact on our financial condition and on our ability to pursue our business plans and strategies.

Raising additional capital may cause dilution to existing stockholders, restrict our operations or require us to relinquish rights to our technologies.

Existing stockholders could suffer dilution or be negatively affected by fixed payment obligations we may incur if we raise additional funds through the issuance of additional equity securities or debt. Furthermore, these securities may have rights senior to those of our common stock and could contain covenants or protective rights that would restrict our operations and potentially impair our competitiveness, such as limitations on our ability to incur additional debt, limitations on our ability to acquire, sell or license intellectual property rights and other operating restrictions that could adversely impact our ability to conduct our business. If we need to secure additional financing, such additional fundraising efforts may divert our management and research efforts from our day-to-day activities, which may adversely affect our ability to develop and commercialize our product candidates.

To the extent we obtain additional funding through product collaborations, these arrangements would generally require us to relinquish rights to some of our technologies, product candidates or products, and we may not be able to enter into such agreements, on acceptable terms, if at all. If we are unable to obtain additional funding on a timely basis, we may be required to curtail or terminate some or all of our development programs or product candidates.

We are initially developing DA-1241 for the treatment of NASH, an indication for which there are no approved products. This makes it difficult to predict the timing and costs of the clinical development of DA-1241 and, if applicable, DA-1726, for the treatment of NASH.

Assuming this offering is consummated and the 2022 License Agreement is consummated, our research and development efforts will be focused in part on developing DA-1241 for the treatment of NASH, an indication for which there are no approved products. The regulatory approval process for novel product candidates such as DA-1241 for NASH can be more expensive and take longer than for other, better known or extensively studied product candidates. As other companies are in later stages of clinical trials for their potential NASH therapies, we expect that the path for regulatory approval for NASH therapies may continue to evolve in the near term as these other companies refine their regulatory approval strategies and interact with regulatory authorities. Such evolution may impact our future clinical trial designs, including trial size and endpoints, in ways that we cannot predict today. Our anticipated development costs would likely increase if development of DA-1241 or any future product candidate is delayed because we are required by the FDA to perform studies or trials in addition to, or different from, those that we currently anticipate. Because of the numerous risks and uncertainties associated with pharmaceutical product development, we are unable to predict the timing or amount of any increase in our anticipated development costs.

We may be required to make significant payments under the 2022 License Agreement.

Upon the consummation of this offering and the consummation of the 2022 License Agreement, we will have acquired exclusive rights (other than in the Republic of Korea) to DA-1241 and DA-1726 for the specific indications provided in the 2022 License Agreement. Under the 2022 License Agreement, in consideration for the license, we are making an upfront payment of $22.0 million in Series A Convertible Preferred Stock. As additional consideration for the license, we are required to pay Dong-A milestone payments upon the achievement of specified regulatory milestones and milestone payments upon the achievement of specified commercial milestones. Commencing on the first commercial sale of licensed products, we are obligated to pay royalties of single-digit percentages on annual net sales of the products covered by the license. If milestone or other non-royalty obligations become due, we may not have sufficient funds available to meet our obligations, which will materially adversely affect our business operations and financial condition.

Even if we obtain favorable clinical results, we may not be able to obtain regulatory approval for, or successfully commercialize, ANA001 or gemcabene.

We are not permitted to market ANA001 in the United States until we receive approval of an NDA from the FDA, or in any foreign countries until we receive the requisite approval from such countries. As a condition to submitting an NDA to the FDA for ANA001, we must complete our ongoing Phase 2 clinical trial, conduct and complete further Phase 3 clinical trials, and any additional nonclinical studies or clinical trials required by the FDA. To date, we have completed the Phase 1 Single Ascending Dosing (SAD) study and two Multiple Ascending Dosing (MAD) studies for ANA001. ANA001 may not be successful in clinical trials or receive regulatory approval. Further, ANA001 may not receive regulatory approval even if it is successful in clinical trials. Obtaining approval of an NDA is a complex, lengthy, expensive and uncertain process that typically takes many years following the commencement of clinical trials and depends upon numerous factors, including the substantial discretion of the regulatory authorities. In addition, the policies or regulations, or the type and amount of clinical data necessary to gain approval, may change during the course of a product candidate's clinical development and may vary among jurisdictions. Our development activities could be harmed or delayed by a partial shutdown of the U.S. government, including the FDA. We have not obtained regulatory approval for any product candidate and it is possible that ANA001 will never obtain regulatory approval. The FDA may delay, limit or deny approval of ANA001 for many reasons, including, among others:

- the results of our clinical trials may not meet the level of statistical or clinical significance required by the FDA for marketing approval;
- the FDA may disagree with the number, design, size, conduct or implementation of our clinical trials;
- the FDA may not approve the formulation, labeling or specifications of ANA001;
- the FDA may require that we conduct additional clinical trials;
- the contract research organizations ("CROs") or the clinical investigators that we retain to conduct our clinical trials may take actions outside of our control that materially adversely impact our clinical trials;
- we, our CROs or clinical investigators may fail to perform in accordance with the FDA's good clinical practice ("GCP") requirements;
- the FDA may disagree with our interpretation of data from our preclinical studies and clinical trials;
- the FDA may find deficiencies with the manufacturing processes or facilities of third-party manufacturers with which we contract; or
- the policies or regulations of the FDA may significantly change in a manner that renders our clinical data insufficient for approval or may require that we amend or submit new clinical protocols.

In addition, similar reasons may cause the EMA or other regulatory authorities to delay, limit or deny approval of ANA001 or gemcabene outside the United States. Any of these factors, many of which are beyond our control, could jeopardize our ability to obtain regulatory approval for and successfully market ANA001 or gemcabene.

Alternatively, even if we obtain regulatory approval, that approval may be for indications or patient populations that are not as broad as we intend or desire or may require labeling that includes significant use or distribution restrictions or safety warnings. We may also be required to perform additional, unanticipated clinical trials to obtain approval or be subject to additional post marketing testing requirements to maintain regulatory approval. In addition, regulatory authorities may withdraw their approval of a product or the FDA may require a risk evaluation and mitigation strategy ("REMS") for a product, which could impose restrictions on its distribution. Any of the foregoing scenarios could materially harm the commercial prospects for our product candidates.

Gemcabene was being evaluated in a Phase 2 randomized, double-blind, placebo-controlled study to assess its efficacy safety and tolerability in patients with severe hypertriglyceridemia. In January 2016, the gemcabene Phase 2 clinical study was placed on partial clinical hold as the FDA requested 2-year rat and

mouse carcinogenicity studies to be completed and submitted. The study currently remains on partial clinical hold for the treatment of dyslipidemia. NeuroBo is currently assessing the path forward for gemcabene for additional indications including COVID-19. As a result, there is a significant uncertainty around our development of gemcabene.

We may not be able to successfully obtain regulatory or marketing approval for, or successfully commercialize, any of our product candidates.

Although we currently have no drug product for sale and may never be able to develop marketable drug products, our business depends heavily on the successful clinical development (for our pharmaceutical drug products), regulatory approval and commercialization of our drug candidates.

The clinical trials of our product candidates are, and the manufacturing and marketing of our product candidates will be, subject to extensive and rigorous review and regulation by government authorities in the United States and in other countries where we intend to test and, if approved, market any product candidate. Before obtaining regulatory approvals for the commercial sale of any product candidate as a pharmaceutical product, we must successfully meet a number of critical developmental milestones, including:

- developing dosages that will be well-tolerated, safe and effective;
- completing the development and scale-up to permit manufacture of our product candidates in commercial quantities and at acceptable costs;
- demonstrating through pivotal clinical trials that the product candidate is safe and effective in patients for the intended indication;
- establishing commercial manufacturing capabilities or making arrangements with third-party manufacturers; and
- obtaining and maintaining exclusive rights, including patent and trade secret protection and non-patent exclusivity for our product candidates.

The time necessary to achieve these developmental milestones for any individual product candidate is long and uncertain, and we may not successfully complete these milestones for any product candidates that we may develop.

We are continuing to test and develop our product candidates and may explore possible design or formulation changes to address safety, efficacy, manufacturing efficiency and performance issues to the extent any arise. The design of a clinical trial may be able to determine whether its results will support approval of a product, and flaws in the design of a clinical trial may not become apparent until the clinical trial is well advanced or completed. There is no assurance that we will be able to design and complete a clinical trial to support marketing approval. Moreover, nonclinical and clinical data are often susceptible to multiple interpretations and analyses. A number of companies in the pharmaceutical and biotechnology industries have experienced significant setbacks in advanced clinical trials, even after promising results in earlier trials.

We may not be able to complete development of any product candidates that demonstrate safety and efficacy and that will have a commercially reasonable treatment and storage period. If the 2022 License Agreement is consummated and we are unable to complete development of DA-1241 and DA-1726 or any other product candidates that we may develop, we will not be able to commercialize and earn revenue from them.

The regulatory review and approval processes of the FDA and comparable foreign regulatory authorities are lengthy, time-consuming and inherently unpredictable, and if we are ultimately unable to obtain regulatory approval for our product candidates, our business will be substantially harmed.

Of the large number of drugs in development in the United States, only a small percentage receive FDA regulatory approval and are commercialized in the United States. We would not be permitted to market DA-1241, DA-1726, or any other product candidate as a pharmaceutical drug in the United States until we receive approval of an NDA from the FDA, or in any foreign countries until we receive the requisite approval from such countries or jurisdictions, such as the marketing authorization application, or MAA, in the European Union from the European Medicines Agency, or EMA.

Successfully completing clinical trials and obtaining approval of an NDA is a complex, lengthy, expensive and uncertain process, and the FDA, or a comparable foreign regulatory authority, may delay, limit or deny approval of an NDA for many reasons, including, among others:

- disagreement with the design or implementation of our clinical trials;
- disagreement with the sufficiency of our clinical trials;
- failure to demonstrate the safety and efficacy of the product candidate for the proposed indications;
- failure to demonstrate that any clinical and other benefits of the product candidate outweigh their safety risks;
- a negative interpretation of the data from our nonclinical studies or clinical trials;
- deficiencies in the manufacturing or control processes or failure of third-party manufacturing facilities with which our contracts for clinical and commercial supplies to comply with current Good Manufacturing Practice requirements, or cGMPs;
- deficiencies in the harvesting and processing of botanical raw materials under Good Agricultural and Collection Processes, or GACPs, or the inability to demonstrate that the final product is capable of being therapeutically consistent, as applicable to botanical drug products, as applicable;
- insufficient data collected from clinical trials or changes in the approval requirements that render our nonclinical and clinical data insufficient to support the filing of an NDA or to obtain regulatory approval; or
- changes in clinical practice in or approved products available for the treatment of the target patient population that could have an impact on the indications that we are pursuing for our product candidates.

The FDA or a comparable foreign regulatory authority may also require more information, including additional nonclinical or clinical data, to support approval, which may delay or prevent approval and our commercialization plans, or cause us to abandon the development program. Even if we obtain regulatory approval, our product candidates may be approved for fewer or more limited indications than we request, such approval may be contingent on the performance of costly post-marketing clinical trials, or we may not be allowed to include the labeling claims necessary or desirable for the successful commercialization of such product candidate.

Our pursuit of potential therapeutic and prophylactic treatments for COVID-19 is in an early stage and subject to many risks. We may be unable to receive approval for any of our COVID-19 product candidates a timely manner, if at all, and our COVID-19 product candidates may never be approved.

We may experience difficulties or delays in enrolling patients in clinical trials due to the impact of the global COVID-19 pandemic or other reasons. Many of the risks related to the development of these product candidates are beyond our control, including risks related to clinical development, the regulatory submission process, potential threats to our intellectual property rights, macro issues such as the ongoing invasion of Ukraine and manufacturing delays or difficulties. We may be unable to produce an efficacious and/or approved product for the treatment of patients with early COVID-19 in a timely manner, if at all.

The results of preclinical studies from our COVID-19 product candidates may not be predictive of the results of clinical trials, and the results of any early-stage clinical trials we commence may not be predictive of the results of the later-stage clinical trials. There can be no assurance that any of our clinical trials for our COVID-19 product candidates, or any other of our product candidates, will ultimately be successful or support further clinical development. In addition, the interpretation of the data from our clinical trials of ANA001 or Gemcabene by the FDA and other regulatory agencies may differ from our interpretation of such data and the FDA or other regulatory agencies may require that we conduct additional studies or analyses. Any of these factors could delay or prevent us from receiving regulatory approval of ANA001 or Gemcabene and there can be no assurance that any such product candidate will be approved in a timely manner, if at all.

If the COVID-19 outbreak is effectively contained or the risk of coronavirus infection is diminished or eliminated before we can successfully develop and manufacture our product candidates, the commercial viability of such product candidate may be diminished or eliminated. We are also committing financial resources and personnel to the development of these product candidates which may cause delays in or otherwise negatively impact our other development programs, despite uncertainties surrounding the longevity and extent of coronavirus as a global health concern. Our business could be negatively impacted by our allocation of significant resources to a global health threat that is unpredictable and could rapidly dissipate or against which our treatment, if successfully developed, may not be effective. In addition, other parties are currently producing therapeutic and vaccine candidates for COVID-19, which may be more efficacious or may be approved prior to our product.

The regulatory pathway for ANA001 and Gemcabene is continually evolving, and ma y result in unexpected or unforeseen challenges.

The speed at which parties are acting to create and test many therapeutics and vaccines for COVID-19 is unusual, and evolving or changing plans or priorities within the FDA, including those based on new knowledge of COVID-19 and how the disease affects the human body, may significantly affect the regulatory timeline for our product candidates. Results from ongoing clinical trials and discussions with regulatory authorities may raise new questions and require us to redesign proposed clinical trials, including revising proposed endpoints or adding new clinical trial sites or cohorts of subjects. Any such developments could delay the development timeline for our product candidates and materially increase the cost of the development for such candidates.

In light of the COVID-19 pandemic, it is possible that one or more government entities may take actions that directly or indirectly have the effect of abrogating some of our rights or opportunities. If we were to develop a treatment for COVID-19, the economic value of such a therapeutic treatment to us could be limited.

Various government entities, including the U.S. government, are offering incentives, grants and contracts to encourage additional investment by commercial organizations into preventative and therapeutic agents against coronavirus, which may have the effect of increasing the number of competitors and/or providing advantages to known competitors. Accordingly, there can be no assurance that we will be able to successfully establish a competitive market share for our COVID-19 therapeutic treatments, if any.

We are currently evaluating alternatives with respect to NB-01 and may not be able to develop NB-01 pursuant to other pathways, including as an orphan drug or as a nutraceutical candidate.

NB-01 has successfully completed two Phase 2 proof-of-concept clinical trials for PDN. However, in light of the present business environment including the impact of the COVID-19 disease that emerged in December 2019 as a global pandemic, we have determined to cease development of NB-01 on the prior regulatory pathway and not advance to Phase 3 clinical trials. We are currently evaluating alternatives with respect to the NB-01 asset. Among these alternatives, we may bring this asset to the market through a different regulatory pathway. Development of NB-01 as an orphan drug is among the alternatives we are considering, and we may conduct feasibility studies to identify a rare disease relevant to NB-01. Additionally, we are considering marketing the NB-01 product line as nutraceutical (non-pharmaceutical) products. There is no assurance that we will be able to pursue an alternative to take NB-01 to market using one of the alternatives referred to above or otherwise.

Our ability to successfully develop NB-01 as an orphan drug would be subject to the following additional risks, among others:

- the results from different types of animal models could be inconsistent from the previous data we have;
- a limited number of potential participants could make clinical trials for NB-01 difficult;
- disparate locations of a limited number of potential participants could make clinical trials difficult; and
- batch-by-batch consistency is difficult to achieve in clinical trials with small numbers of participants.

Our ability to successfully develop NB-01 as a nutraceutical product would be subject to the following risks, among others:

- the future growth and profitability of NB-01 would depend in large part upon our ability to successfully hire personnel with requisite marketing expertise, the effectiveness and efficiency of our marketing efforts and our ability to select effective markets and media in which to market and advertise;
- our inability to properly manage, motivate and retain third party distributors for NB-01, as applicable, could have a material adverse effect on us;
- the success of NB-01 would likely be linked to the size and growth rate of the vitamin, mineral and dietary supplement market, and an adverse change in the size or growth rate of that market could have a material adverse effect on us; and
- unfavorable publicity or consumer perception of NB-01 and any similar products distributed by other companies could have a material adverse effect on us.

Product candidates may cause undesirable side effects that could delay or prevent their marketing approval, limit the commercial profile of an approved label, or result in significant negative consequences following marketing approval, if any, including marketing withdrawal.

Undesirable side effects caused by any of our product candidates that we may develop or acquire could cause us or the FDA or other regulatory authorities to interrupt, delay or halt our clinical trials and could result in more restrictive labels or the delay or denial of marketing approval by the FDA or other regulatory authorities of such product candidates. Results of our clinical trials could reveal a high and unacceptable severity and prevalence of these or other side effects. In such an event, our trials could be suspended or terminated and the FDA or comparable foreign regulatory authorities could order us to cease further development of or deny approval of our product candidates for any or all targeted indications. In addition, any drug-related side effects could affect patient recruitment or the ability of enrolled patients to complete the trial or result in potential product liability claims. Any of these occurrences may harm our business, financial condition and prospects significantly.

Further, clinical trials by their nature utilize a sample of the potential patient population. With a limited number of patients, rare and severe side effects of our product candidates may only be uncovered with a significantly larger number of patients exposed to the product candidate. If our product candidates receive marketing approval and we or others identify undesirable side effects caused by such product candidates (or any other similar drugs) after such approval, a number of potentially significant negative consequences could result, including:

- regulatory authorities may withdraw or limit their approval of such product candidates;
- regulatory authorities may require the addition of labeling statements, such as a “boxed” warning or a contraindication;
- we may be required to recall the product, change the way such product candidates are distributed or administered, conduct additional clinical trials or change the labeling of the product candidates;
- regulatory authorities may require a Risk Evaluation and Mitigation Strategy (REMS) plan to mitigate risks, which could include medication guides to be distributed to patients, physician communication plans, or elements to assure safe use, such as restricted distribution methods, patient registries and other risk minimization tools;
- we may be subject to regulatory investigations and government enforcement actions;
- we may be subject to fines, injunctions or the imposition of civil or criminal penalties;
- we may decide to remove such product candidates from the marketplace after they are approved;
- the product may be rendered less competitive and sales may decrease;
- we could be sued and held liable for injury caused to individuals exposed to or taking its product candidates; and
- our reputation may suffer.

We believe that any of these events could prevent us from achieving or maintaining market acceptance of the affected product candidates and could substantially increase the costs of commercializing our product candidates, if approved, and significantly impact our ability to successfully commercialize our product candidates and generate revenues.

Delays in our clinical trials may lead to a delay in the submission of marketing approval applications and jeopardize our ability to potentially receive approvals and generate revenues from the sale of our products.

We may experience delays in clinical trials. We do not know whether planned clinical trials will begin or enroll subjects on time, need to be redesigned or be completed on schedule, if at all. Clinical trials may be delayed, suspended or terminated for a variety of reasons, such as:

- delay or failure in reaching agreement with the FDA or a comparable foreign regulatory authority on a trial design that we are able to execute;
- delay or failure in obtaining authorization to commence a trial or inability to comply with conditions imposed by a regulatory authority regarding the scope or design of a clinical trial;
- inability, delay or failure in identifying and maintaining a sufficient number of trial sites, many of which may already be engaged in competing clinical trial programs;
- issues with the manufacture of drug substance for use in clinical trials;
- delay or failure in recruiting and enrolling suitable subjects to participate in a trial;
- delay or failure in having subjects complete a trial or return for post-treatment follow-up;
- clinical sites and investigators deviating from trial protocol, failing to conduct the trial in accordance with regulatory requirements, or dropping out of a trial;
- delay or failure in reaching agreement on acceptable terms with prospective clinical research organizations, or CROs, and clinical trial sites, the terms of which can be subject to extensive negotiation and may vary significantly among different CROs and trial sites;
- delay or failure in obtaining institutional review board, or IRB, approval to conduct a clinical trial at each site;
- delays resulting from negative or equivocal findings of the Data Safety Monitoring Board, or DSMB, if any;
- ambiguous or negative results;
- decision by the FDA, a comparable foreign regulatory authority, or recommendation by a DSMB to suspend or terminate clinical trials at any time for safety issues or for any other reason;
- conflicts affecting clinical trial sites and regions where clinical trials are being completed;
- lack of adequate funding to continue the product development program; or
- changes in governmental regulations or requirements.

Any delays in completing our clinical trials will increase our costs, slow down our product candidate development and approval process and jeopardize our ability to commence product sales and generate revenues. Any of these occurrences may significantly harm our business, financial condition and prospects. In addition, many of the factors that cause, or lead to, a delay in the commencement or completion of clinical trials may also ultimately lead to the denial of regulatory approval of our product candidates.

We may develop DA-1241 and DA-1726, and potentially future product candidates, in combination with other therapies, which exposes us to additional risks.

If the 2022 License Agreement is consummated, we may develop DA-1241 and DA-1726 and future product candidates in combination with one or more currently approved therapies. Even if any product candidate we develop were to receive marketing approval or be commercialized for use in combination with other existing therapies, we would continue to be subject to the risks that the FDA or similar regulatory

authorities outside of the United States could revoke approval of the therapy used in combination with our product candidate or that safety, efficacy, manufacturing or supply issues could arise with these existing therapies. This could result in our own products being removed from the market or being less successful commercially.

We may also evaluate DA-1241 and DA-1726 or any other future product candidates in combination with one or more other therapies that have not yet been approved for marketing by the FDA or similar regulatory authorities outside of the United States. We will not be able to market and sell DA-1241 and DA-1726 or any product candidate we develop in combination with any such unapproved therapies that do not ultimately obtain marketing approval. If the FDA or similar regulatory authorities outside of the United States do not approve these other drugs or revoke their approval of, or if safety, efficacy, manufacturing, or supply issues arise with, the drugs we choose to evaluate in combination with DA-1241 and DA-1726 or any other product candidate we develop, we may be unable to obtain approval of or market DA-1241 and DA-1726 or any other product candidate we develop.

Enrollment and retention of patients in clinical trials is an expensive and time-consuming process and could be made more difficult or rendered impossible by multiple factors outside our control, including difficulties in identifying patients with NASH and significant competition for recruiting such patients in clinical trials.

Identifying and qualifying patients to participate in our clinical trials is critical to our success. We may encounter delays in enrolling, or be unable to enroll, a sufficient number of patients to complete any of our clinical trials, and even once enrolled we may be unable to retain a sufficient number of patients to complete any of our trials. In particular, as a result of the inherent difficulties in diagnosing NASH and the significant competition for recruiting patients with NASH in clinical trials, there may be delays in enrolling the patients we need to complete clinical trials on a timely basis, or at all. This risk may be more significant for us than other companies conducting clinical trials for the treatment of patients with NASH because we plan to enroll only patients with a biopsy-confirmed diagnosis of NASH in our planned clinical trials.

Factors that may generally affect patient enrollment include:

- the size and nature of the patient population;
- the number and location of clinical sites we enroll;
- competition with other companies for clinical sites or patients;
- the eligibility and exclusion criteria for the trial;
- the design of the clinical trial;
- inability to obtain and maintain patient consents;
- risk that enrolled participants will drop out before completion; and
- competing clinical trials and clinicians' and patients' perceptions as to the potential advantages of the drug being studied in relation to other available therapies, including any new drugs that may be approved for the indications we are investigating.

In addition, if any significant adverse events or other side effects are observed in any of our future clinical trials, it may make it more difficult for us to recruit patients to our clinical trials and patients may drop out of our trials, or we may be required to abandon the trials or our development efforts of one or more product candidates altogether. Our inability to enroll a sufficient number of patients for our clinical trials would result in significant delays, which would increase our costs and have an adverse effect on our company.

We face substantial competition, which may result in others discovering, developing or commercializing products before or more successfully than we do.

The development and commercialization of new products is highly competitive. Our future success depends on our ability to demonstrate and maintain a competitive advantage with respect to the development and commercialization of our product candidates. Our objective is to develop and commercialize new products with superior efficacy, convenience, tolerability and safety. In many cases, the products that we commercialize will compete with existing, market-leading products.

Many of our potential competitors have significantly greater financial, manufacturing, marketing, drug development, technical and human resources than we do. Large pharmaceutical companies, in particular, have extensive experience in clinical testing, obtaining regulatory approvals, recruiting patients and in manufacturing pharmaceutical products. In particular, these companies have greater experience and expertise in securing government contracts and grants to support their research and development efforts, conducting testing and clinical trials, obtaining regulatory approvals to market products, manufacturing such products on a broad scale and marketing approved products. These companies also have significantly greater research and marketing capabilities than we do and may also have products that have been approved or are in late stages of development, and have collaborative arrangements in our target markets with leading companies and research institutions. Established pharmaceutical companies may also invest heavily to accelerate discovery and development of novel compounds or to in-license novel compounds that could make the product that we develop obsolete. As a result of all of these factors, our competitors may succeed in obtaining patent protection and/or FDA approval or discovering, developing and commercializing products before, or more effectively than, we do. In addition, any new product that competes with an approved product must demonstrate compelling advantages in efficacy, convenience, tolerability and safety in order to overcome price competition and to be commercially successful. If we are not able to compete effectively against potential competitors, our business will not grow and our financial condition and operations will suffer.

To the extent any of our product candidates are approved for cardio-metabolic indications, particularly obesity, the commercial success of our products will also depend on our ability to demonstrate benefits over the then-prevailing standard of care, including diet and exercise. Finally, morbidly obese patients sometimes undergo the gastric bypass procedure, with salutary effects on the many co-morbid conditions of obesity. Some of these programs have been advanced further in clinical development then our clinical programs or have already received regulatory approval.

T2D

There are a number of large pharmaceutical and biotechnology companies that currently market and sell products or are pursuing the development of products for T2D. Some of these competitive products and therapies are based on scientific approaches that are the same as or similar to our approach and others are based on entirely different approaches. Potential competitors also include academic institutions, government agencies and other public and private research organizations that conduct research, seek patent protection and establish collaborative arrangements for research, development, manufacturing and commercialization.

NASH

There are currently no medications approved for the treatment of NASH. However, various therapeutics are used off-label for the treatment of NASH, including vitamin E (an antioxidant), insulin sensitizers (e.g., metformin, pioglitazone), antihyperlipidemic agents (e.g., gemfibrozil), pentoxifylline and ursodeoxycholic acid (UDCA). There are several product candidates in Phase 3 or earlier clinical or preclinical development for the treatment of NASH, including Madrigal Pharmaceuticals, Inc.'s THR beta agonist (resmetirom), Novo Nordisk's GLP1 agonist (semaglutide), and Inventiva's pan-PPAR agonist (lanifibranor), as well as FXR agonists from Intercept Pharmaceuticals Inc. (obeticholic acid), Novartis AG (tropifexor, nidufexor), Metacrine (MET409, MET642), Terns Pharmaceuticals (TERN-101), Gilead Sciences, Inc. (cilofexor) and Enanta Pharmaceuticals, Inc. (EDP-305).

Obesity

Due to the growing overweight and obesity epidemic and consumer demand, there are many competitors in the field of obesity treatment. Obesity treatments range from behavioral modification, to drugs and medical devices, and surgery, generally as a last resort. If DA-1726 were approved for obesity, our primary competition in the obesity treatment market would currently be from approved and marketed products, including, liragluitde (SAXENDA®), semaglutide (WEGOVY®), phentermine/topiramate (QSYMIA®), naltrexone/bupropion (CONTRAVE®) and orlistat (XENICAL®/ ALLI®). Further competition could arise from products currently in development, including Lilly's GLP-1/GIP receptor dual agonist (tierzepatide),

Novo Nordisk's CagriSema (a combination drug of semaglutide and a novel amylin analogue), Zafgen's ZGN-1061 or ZGN-1258 (MetAP2) product candidates and various FGF21 ligands in development.

ANA001

We expect that, if approved, ANA001 will compete with a number of drugs that are being studied for the treatment of symptoms of COVID-19. In addition to widely distributed vaccines designed to stop the spread of COVID-19, which could adversely affect the addressable population for ANA001, several antiviral therapies are currently approved by the FDA for the treatment of COVID-19 (remdesivir [VEKLURY®], nirmatrelvir/ritonavir [PAXLOVID™] and molnupiravir), and several antibody treatments have received emergency use authorization from the FDA (sotrovimab, bebtelovimab, casirivimab/imdevimab [REGEN-COV®], tixagevimab/cilgavimab [EVUSHELD™] and bamlanivimab/etesevimab). We are aware due to the rapidly changing mutations that some of the EUA approved therapies have been restricted in many states according to the drug's susceptibility to the local variant outbreak. Additional therapies continue to be studied in clinical trials for the treatment of COVID-19.

In addition to the marketed therapies, we are aware of several companies currently developing and commercializing niclosamide for the treatment of COVID-19 symptoms, including Daewoong, Union Therapeutics, TFF and FirstWave. Approved therapies and additional therapies that may be approved in the near term could significantly and adversely affect the market opportunity for ANA001.

NB-01 and NB-02

There are a number of large pharmaceutical and biotechnology companies that currently market and sell products or are pursuing the development of products for the treatment of painful diabetic neuropathy and for the symptomatic and disease modifying treatment of neurodegenerative diseases, including Alzheimer's disease and tauopathies. Some of these competitive products and therapies are based on scientific approaches that are the same as or similar to our approach and others are based on entirely different approaches. Potential competitors also include academic institutions, government agencies and other public and private research organizations that conduct research, seek patent protection and establish collaborative arrangements for research, development, manufacturing and commercialization.

NB-01 has been in clinical development for the treatment of painful diabetic neuropathy. We are also developing NB-02 for the symptomatic and disease modifying treatment of neurodegenerative diseases, including Alzheimer's disease and tauopathies. For painful diabetic neuropathy, there are no products currently marketed for disease modification, although there are products available to treat painful diabetic neuropathy. For Alzheimer's disease, current symptomatic treatments have limited effectiveness and no disease-modifying therapy is currently available. Some of the currently approved drug therapies are branded and subject to patent protection, and others are available on a generic basis. Many of these approved drugs are well-established therapies and are widely accepted by physicians, patients and third-party payors. Insurers and other third-party payors may also encourage the use of generic products.

Our commercial success depends upon attaining significant market acceptance of our product candidates, if approved, among hospitals, physicians, patients and healthcare payors.

Even if we obtain regulatory approval for any of our product candidates that we may develop or acquire in the future, the product may not gain market acceptance among hospitals, physicians, health care payors, patients and the medical community. Market acceptance of any of our product candidates for which we receive regulatory approval depends on a number of factors, including:

- the clinical indications for which the product candidate is approved;
- acceptance by major operators of hospitals, physicians and patients of the product candidate as a safe and effective treatment, particularly the ability of our product candidates to establish themselves as a new standard of care in the treatment paradigm for the indications that we are pursuing;
- the potential and perceived advantages of our product candidates over alternative treatments as compared to the relative costs of the product candidates and alternative treatments;

- the willingness of physicians to prescribe, and patients to take, a product candidate that is based on a botanical source;
- the prevalence and severity of any side effects with respect to our product candidates, and any elements that may be imposed by the FDA under a REMS program that could discourage market uptake of the products;
- the availability of adequate reimbursement and pricing for any approved products by third party payors and government authorities;
- inability of certain types of patients to take our product;
- demonstrated ability to treat patients and, if required by any applicable regulatory authority in connection with the approval for target indications, to provide patients with incremental cardiovascular disease benefits, as compared with other available therapies;
- the relative convenience and ease of administration of our product candidates, including as compared with other treatments available for approved indications;
- limitations or warnings contained in the labeling approved by the FDA;
- availability of alternative treatments already approved or expected to be commercially launched in the near future;
- the effectiveness of our sales and marketing strategies;
- guidelines and recommendations of organizations involved in research, treatment and prevention of various diseases that may advocate for alternative therapies;
- the willingness of patients to pay out-of-pocket in the absence of third-party coverage;
- physicians or patients may be reluctant to switch from existing therapies even if potentially more effective, safe or convenient;
- efficacy, safety, and potential advantages compared to alternative treatments;
- the ability to offer our product for sale at competitive prices;
- the willingness of the target patient population to try new therapies and of physicians to prescribe these therapies;
- any restrictions on the use of our product together with other medications;
- interactions of our product with other medicines patients are taking; and
- the timing of market introduction of our products as well as competitive products.

There may be delays in getting our product candidates, if approved, on hospital or insurance formularies or limitations on coverages that may be available in the early stages of commercialization for newly approved drugs. If any of our product candidates are approved but fail to achieve market acceptance among hospitals, physicians, patients or health care payors, we will not be able to generate significant revenues, which would have a material adverse effect on our business, prospects, financial condition and results of operations.

Even if we are able to commercialize a future pharmaceutical drug candidate, the profitability of such product candidate will likely depend in significant part on third-party reimbursement practices, which, if unfavorable, would harm our business.

Our ability to commercialize a drug successfully will depend in part on the extent to which coverage and adequate reimbursement will be available from government health administration authorities, private health insurers and other organizations. Government authorities and third-party payors, such as private health insurers and health maintenance organizations, decide which medications they will pay for and establish reimbursement levels. Government authorities and third-party payors have attempted to control costs by limiting coverage and the amount of reimbursement for particular medications. Increasingly, third-party payors are requiring that drug companies provide them with predetermined discounts from list prices and are challenging the prices charged for medical products. We cannot be sure that coverage will be available for

any product candidate that we commercialize and, if coverage is available, whether the level of reimbursement will be adequate. Assuming we obtain coverage for our product candidates, if approved, by a third-party payor, the resulting reimbursement payment rates may not be adequate or may require co-payments that patients find unacceptably high. Patients who are prescribed medications for the treatment of their conditions, and their prescribing physicians, generally rely on third-party payors to reimburse all or part of the costs associated with their prescription drugs. Patients are unlikely to use a product candidate, if approved, unless coverage is provided and reimbursement is adequate to cover all or a significant portion of the cost of our products. Therefore, coverage and adequate reimbursement is critical to new product acceptance. If reimbursement is not available or is available only to limited levels, we may not be able to successfully commercialize any product candidate for which we obtain marketing approval.

There may be significant delays in obtaining reimbursement for newly approved drugs, and coverage may be more limited than the purposes for which a product candidate is approved by the FDA or similar regulatory authorities outside the United States. Moreover, eligibility for reimbursement does not imply that any product will be paid for in all cases or at a rate that covers its costs, including research, development, manufacture, sale and distribution. Interim reimbursement levels for a new product, if applicable, may also not be sufficient to cover our costs and may not be made permanent. Reimbursement rates may vary according to the use of the product and the clinical setting in which it is used, may be based on reimbursement levels already set for lower cost medicines and may be incorporated into existing payments for other services. Net prices for products may be reduced by mandatory discounts or rebates required by government healthcare programs or private payors and by any future relaxation of laws that presently restrict imports of medicines from countries where they may be sold at lower prices than in the United States. Third-party payors often rely upon Medicare coverage policy and payment limitations in setting their own reimbursement policies. However, no uniform policy requirement for coverage and reimbursement for drug products exists among third-party payors in the United States. Therefore, coverage and reimbursement for drug products can differ significantly from payor to payor. As a result, the coverage determination process is often a time-consuming and costly process that will require us to provide scientific and clinical support for the use of our products to each payor separately with no assurance that coverage and adequate reimbursement will be applied consistently or obtained in the first instance.

Our inability to promptly obtain coverage and profitable payment rates from both government-funded and private payors for any approved products that we develop could have an adverse effect on our operating results, our ability to raise capital needed to commercialize products and our overall financial condition.

Product liability lawsuits against us could cause us to incur substantial liabilities and could limit commercialization of any product candidate that we may develop.

We face an inherent risk of product liability exposure related to the testing of our product candidates in human clinical trials and will face an even greater risk if we commercially sell any product that we may develop. Product liability claims might be brought against us by patients, healthcare providers or others selling or otherwise coming into contact with any of our products or future product candidate during product testing, manufacturing, marketing or sale. For example, we may be sued on allegations that a product candidate caused injury or that the product is otherwise unsuitable. Any such product liability claims may include allegations of defects in manufacturing, defects in design, a failure to warn of dangers inherent in the product, including as a result of interactions with alcohol or other drugs, negligence, strict liability, and a breach of warranties. Claims could also be asserted under state consumer protection acts.

If we cannot successfully defend against claims that our product caused injuries, we could incur substantial liabilities. Regardless of merit or eventual outcome, liability claims may result in:

- decreased demand for any product candidate that we are developing;
- injury to our reputation and significant negative media attention;
- withdrawal of clinical trial participants;
- increased FDA warnings on product labels;
- significant costs to defend the related litigation;

- substantial monetary awards to trial participants or patients;
- distraction of management's attention from our primary business;
- loss of revenue;
- the inability to commercialize any product candidate that we may develop;
- the removal of a product from the market; and
- increased insurance costs.

We do not currently maintain clinical trial insurance coverage for clinical trials. Even if we obtain such insurance in the future, it may not be adequate to cover all liabilities that we may incur. Insurance coverage is increasingly expensive. We may not be able to obtain or maintain insurance coverage at a reasonable cost or in an amount adequate to satisfy any liability that may arise.

If we or our third-party manufacturers fail to comply with environmental, health and safety laws and regulations, we could become subject to fines or penalties or incur costs that could have an adverse effect on the success of our business.

Our research and development activities involve the controlled use of potentially hazardous substances, including chemical and biological materials, by us and our third-party manufacturers. Our manufacturers are subject to federal, state and local laws and regulations in the United States and abroad governing laboratory procedures and the use, manufacture, storage, handling and disposal of medical and hazardous materials. Although we believe that our manufacturers' procedures for using, handling, storing and disposing of these materials comply with legally prescribed standards, we cannot completely eliminate the risk of contamination or injury resulting from medical or hazardous materials. As a result of any such contamination or injury, we may incur liability or local, city, state or federal authorities may curtail the use of these materials and interrupt our business operations. In the event of an accident, we could be held liable for damages or penalized with fines, and the liability could exceed our resources. We do not have any insurance for liabilities arising from medical or hazardous materials. Although we maintain workers' compensation insurance to cover us for costs and expenses we may incur due to injuries to our employees resulting from the use of hazardous materials, this insurance may not provide adequate coverage against potential liabilities. Compliance with applicable environmental, health and safety laws and regulations is expensive, and current or future environmental regulations may impair our research, development and production efforts, which could harm our business, prospects, financial condition or results of operations.

We rely and will continue to rely on collaborative partners regarding the development of our research programs and product candidates.

We are and expect to continue to be dependent on collaborations with partners relating to the development and commercialization of our existing and future research programs and product candidates. We had, have and will continue to have discussions on potential partnering opportunities with various pharmaceutical and medical device companies. If we fail to enter into or maintain collaborative agreements on reasonable terms or at all, our ability to develop our existing or future research programs and product candidates could be delayed, the commercial potential of our products could change, and our costs of development and commercialization could increase.

Our dependence on collaborative partners subjects it to a number of risks, including, but not limited to, the following:

- We may not be able to control the amount or timing of resources that collaborative partners devote to our research programs and product candidates;
- We may be required to relinquish significant rights, including intellectual property, marketing and distribution rights;
- We rely on the information and data received from third parties regarding our research programs and product candidates and will not have control of the process conducted by the third party in gathering and composing such data and information. We may not have formal or appropriate guarantees from our contract parties with respect to the quality and the completeness of such data;

- A collaborative partner may develop a competing product either by itself or in collaboration with others, including one or more of our competitors;
- Our collaborative partners' willingness or ability to complete their obligations under our collaboration arrangements may be adversely affected by business combinations or significant changes in a collaborative partner's business strategy; and/or
- We may experience delays in, or increases in the costs of, the development of our research programs and product candidates due to the termination or expiration of collaborative research and development arrangements.

If we are unable to establish sales and marketing capabilities to market and sell our product candidates, if they are approved for such marketing, we may be unable to generate any revenue.

In order to market and sell our product candidates in development, we currently intend to build and develop our own sales, marketing and distribution operations. Although our management team has previous experience with such efforts for pharmaceutical products, there can be no assurance that we will be successful in building these operations. The establishment and development of our own commercial sales and marketing teams to discuss any products we may develop will be expensive and time-consuming and could delay any product launch.

If we are unable to establish adequate sales, marketing and distribution capabilities, we may not be able to generate product revenue and may not become profitable. We will also be competing with many companies that currently have extensive and well-funded sales and marketing operations. If any of our product candidates are approved, we may be unable to compete successfully against these more established companies.

If, in the future, we are unable to establish sales and marketing capabilities or to selectively enter into agreements with third parties to sell and market our product candidates, we may not be successful in commercializing our product candidates if and when they are approved.

We do not have a sales or marketing infrastructure and have no experience in the sale, marketing or distribution of pharmaceutical products. To achieve commercial success for any approved product for which we retain sales and marketing responsibilities, we must either develop a sales and marketing organization or outsource these functions to other third parties. In the future, we may choose to build a focused sales and marketing infrastructure to sell some of our product candidates if and when they are approved.

There are risks involved both with establishing our own sales and marketing capabilities and with entering into arrangements with third parties to perform these services. For example, recruiting and training a sales force is expensive and time consuming and could delay any product launch. If the commercial launch of a product candidate for which we recruit a sales force and establish marketing capabilities is delayed or does not occur for any reason, we would have prematurely or unnecessarily incurred these commercialization expenses. This may be costly, and our investment would be lost if we cannot retain or reposition our sales and marketing personnel.

Factors that may inhibit our efforts to commercialize our product candidates on our own include:

- our inability to recruit and retain adequate numbers of effective sales and marketing personnel;
- the inability of sales personnel to obtain access to physicians or persuade adequate numbers of physicians to prescribe any future pharmaceutical products; and
- unforeseen costs and expenses associated with creating an independent sales and marketing organization.

If we enter into arrangements with third parties to perform sales, marketing and distribution services, our product revenue or the profitability of these product revenue may be lower than if we were to market and sell any products that we develop ourselves. In addition, we may not be successful in entering into arrangements with third parties to sell and market our product candidates or may be unable to do so on terms that are favorable to us. We may have little control over such third parties, and any of them may fail to devote the necessary resources and attention to sell and market our products effectively. If we do not establish

sales and marketing capabilities successfully, either on our own or in collaboration with third parties, we will not be successful in commercializing our product candidates.

Any product candidate for which we obtain marketing approval could be subject to marketing restrictions or withdrawal from the market, and we may be subject to penalties if we fail to comply with regulatory requirements or if we experience unanticipated problems with our products.

Any pharmaceutical product candidate for which we obtain marketing approval will be subject to continual requirements of and review by the FDA and other regulatory authorities. These requirements include submissions of safety and other post-marketing information and reports, registration and listing requirements, cGMP requirements, quality assurance and corresponding maintenance of records and documents and requirements regarding the distribution of samples to physicians and recordkeeping. Even if marketing approval of a product candidate is granted, the approval may be subject to limitations on the indicated uses for which the product may be marketed or to the conditions of approval, or contain requirements for costly post-marketing testing and surveillance to monitor the safety or efficacy of the medicine. The FDA closely regulates the post-approval marketing and promotion of drugs to ensure that they are marketed only for the approved indications and in accordance with the provisions of the approved labeling. The FDA imposes stringent restrictions on manufacturers' communications regarding off-label use and if we do not market our products for their approved indications, we may be subject to enforcement action for off-label marketing and/or promotion.

In addition, later discovery of previously unknown problems with our products, manufacturers or manufacturing processes, or failure to comply with regulatory requirements, may result in, among other things:

- restrictions on such products, manufacturers or manufacturing processes;
- restrictions on the labeling, marketing, distribution or use of a product;
- requirements to conduct post-approval clinical trials;
- warning or untitled letters;
- withdrawal of the products from the market;
- refusal to approve pending applications or supplements to approved applications that we submit;
- recall of products;
- fines, restitution or disgorgement of profits or revenue;
- suspension or withdrawal of marketing approvals for the drug products;
- refusal to permit the import or export of our products;
- product seizure; and
- injunctions or the imposition of civil or criminal penalties.

Any product marketed as a nutraceutical could also be subject to FDA review or adverse action and we could be forced to remove such product from the market.

We or any potential collaborator may never receive regulatory approval to market our product candidates outside of the United States.

The activities associated with the development and commercialization of pharmaceutical drugs are subject to comprehensive regulation by the FDA, other regulatory agencies in the United States and by comparable authorities in other countries. Failure to obtain regulatory approval for our product candidates will prevent us or any potential collaborator from commercializing our product candidates as pharmaceutical drugs. We have not received regulatory approval to market any of our product candidates in any jurisdiction, and we do not expect to obtain FDA or any other regulatory approvals to market any of our product candidates for the foreseeable future, if at all. The process of obtaining regulatory approvals is expensive,

often takes many years, if approval is obtained at all, and can vary substantially based upon the type, complexity and novelty of the product candidates involved.

We may seek to avail ourselves of mechanisms to expedite and/or reduce the cost for development or approval of any of our product candidates or product candidates we may pursue in the future, such as fast track designation or orphan drug designation, but such mechanisms may not actually lead to a faster or less expensive development or regulatory review or approval process.

We may seek fast track designation, priority review, orphan drug designation, or accelerated approval for any product candidate we may pursue in the future. For example, if a drug is intended for the treatment of a serious or life-threatening condition and the drug demonstrates the potential to address unmet medical needs for this condition, the drug sponsor may apply for FDA fast track designation. However, the FDA has broad discretion with regard to these mechanisms, and even if we believe a particular product candidate is eligible for any such mechanism, it cannot assure you that the FDA would decide to grant it. Even if we obtain fast track or priority review designation or pursue an accelerated approval pathway, we may not experience a faster and/or less costly development process, review or approval compared to conventional FDA procedures. The FDA may withdraw a particular designation if it believes that the designation is no longer supported by data from our clinical development program.

Current and future legislation may increase the difficulty and cost to obtain marketing approval of and commercialize our product candidates and affect the prices we may obtain.

In the United States and some foreign jurisdictions, there have been a number of legislative and regulatory changes and proposed changes regarding the healthcare system that could prevent or delay marketing approval of our product candidates, restrict post-approval activities and affect our ability to profitably sell any product candidates for which we obtain marketing approval. See the section titled "Item 1-Business-Government Regulation" above.

Legislative and regulatory proposals have been made to expand post-approval requirements and restrict sales and promotional activities for pharmaceutical products. New legislation or regulations may adversely affect the potential for our products as nutraceuticals. We cannot be sure whether additional legislative changes will be enacted, or whether FDA regulations, guidance or interpretations will be changed, or what the impact of such changes on the marketing approvals, if any, of our product candidates may be. In addition, increased scrutiny by the U.S. Congress of the FDA's approval process may significantly delay or prevent marketing approval, as well as subject us to more stringent product labeling and post-marketing conditions and other requirements.

Governments outside the United States tend to impose strict price controls, which may adversely affect our revenues, if any.

In some countries, particularly the countries of the European Union, the pricing of prescription pharmaceuticals is subject to governmental control. In these countries, pricing negotiations with governmental authorities can take considerable time after the receipt of marketing approval for a product. To obtain reimbursement or pricing approval in some countries, we may be required to conduct a clinical trial that compares the cost-effectiveness of its product candidate to other available therapies. If reimbursement of our products is unavailable or limited in scope or amount, or if pricing is set at unsatisfactory levels, our business could be harmed, possibly materially.

Our relationships with healthcare providers and third-party payors will be subject to applicable anti-kickback, fraud and abuse and other healthcare laws and regulations, which could expose us to criminal sanctions, civil penalties, contractual damages, reputational harm and diminished profits and future earnings, among other penalties and consequences.

Healthcare providers and third-party payors will play a primary role in the recommendation and prescription of any product candidate for which we obtain marketing approval. Our arrangements with third-party payors and customers may expose us to broadly applicable fraud and abuse and other healthcare laws and regulations that may constrain the business or financial arrangements and relationships through which we market, sell and distribute any product candidate for which we obtain marketing approval.

Restrictions and obligations under applicable federal and state healthcare laws and regulations are noted in the section "Business-Government Regulation" below.

Efforts to ensure that our business arrangements with third parties will comply with applicable healthcare laws and regulations will involve substantial costs. It is possible that governmental authorities will conclude that our business practices may not comply with current or future statutes, regulations or case law involving applicable fraud and abuse or other healthcare laws and regulations. If our operations are found to be in violation of any of these laws or any other governmental regulations that may apply to it, we may be subject to significant civil, criminal and administrative penalties, damages, fines, imprisonment, exclusion of products from government funded healthcare programs, such as Medicare and Medicaid, and the curtailment or restructuring of our operations. If any of the physicians or other healthcare providers or entities with whom we expect to do business is found to be not in compliance with applicable laws, they may be subject to criminal, civil or administrative sanctions, including exclusions from government funded healthcare programs.

We are subject to U.S. and certain foreign export and import controls, sanctions, embargoes, anti-corruption laws, and anti-money laundering laws and regulations. Compliance with these legal standards could impair its ability to compete in domestic and international markets. We can face criminal liability and other serious consequences for violations which can harm its business.

We are subject to export control and import laws and regulations, including the U.S. Export Administration Regulations, U.S. Customs regulations, various economic and trade sanctions regulations administered by the U.S. Treasury Department's Office of Foreign Assets Controls, the U.S. Foreign Corrupt Practices Act of 1977, as amended, the U.S. domestic bribery statute contained in 18 U.S.C. § 201, the U.S. Travel Act, the USA PATRIOT Act, and other state and national anti-bribery and anti-money laundering laws in the countries in which we conduct activities. Anti-corruption laws are interpreted broadly and prohibit companies and their employees, agents, contractors, and other partners from authorizing, promising, offering, or providing, directly or indirectly, improper payments or anything else of value to recipients in the public or private sector. We may engage third parties for clinical trials outside of the United States to sell our products abroad and/or to obtain necessary permits, licenses, patent registrations, and other regulatory approvals. We have direct or indirect interactions with officials and employees of government agencies or government-affiliated hospitals, universities, and other organizations. We can be held liable for the corrupt or other illegal activities of our employees, agents, contractors, and other partners, even if it does not explicitly authorize or have actual knowledge of such activities. Our violations of the laws and regulations described above may result in substantial civil and criminal fines and penalties, imprisonment, the loss of export or import privileges, debarment, tax reassessments, breach of contract and fraud litigation, reputational harm, and other consequences.

Our ability to use our NOLs to offset future taxable income may be subject to certain limitations

In general, under Section 382 of Internal Revenue Code of 1986, as amended (the "Code"), a corporation that undergoes an "ownership change" is subject to limitations on its ability to utilize its carryforwards to offset future taxable income. Our existing NOL carryforwards, or NOLs, may be subject to limitations arising from previous ownership changes, including in connection with the 2019 and 2020 Mergers. Future changes in our stock ownership, some of which are outside of our control, could result in further ownership changes under Section 382 of the Code. There is also a risk that due to regulatory changes, such as suspensions on the use of NOLs, or other unforeseen reasons, our existing and any future NOLs could expire or otherwise be unavailable to offset future income tax liabilities.

We believe that we have undergone an ownership change as a result of our transactions in 2019 and 2020 and may undergo an additional ownership change if the 2022 License Agreement is consummated, however, we have not conducted a study to assess whether there have been multiple ownership changes since inception due to the significant complexity and cost associated with such a study.

Tax matters, including the changes in corporate tax rates, disagreements with taxing authorities and imposition of new taxes could impact our results of operations and financial condition.

We are subject to income and other taxes in the United States and our operations, plans and results are affected by tax and other initiatives. On December 22, 2017, comprehensive changes to the Code were signed

into law, informally titled the Tax Cuts and Jobs Act (the "Tax Act"). The Tax Act included significant changes that could materially impact the taxation of corporations, like us, including, among other things, changes to the corporate income tax rate, limitation of the tax deduction for interest expense to business interest income plus 30% of adjusted taxable income (except for certain small businesses), immediate deductions for certain new investments instead of deductions for depreciation expense over time, and modifying or repealing many business deductions and credits (including changes to the orphan drug tax credit and changes to the deductibility of research and experimental expenditures that will be effective in the future). The Tax Act also included a limitation of the deduction for net operating losses ("NOLs") generated in tax years beginning after December 31, 2017 to 80% of current year taxable income and the general elimination of carrybacks of NOLs generated in taxable years ending after December 31, 2017. However, the Coronavirus Aid, Relief, and Economic Security Act ("CARES Act") signed into law on March 27, 2020, provided that NOLs generated in a taxable year beginning in 2018, 2019, or 2020 may now be carried back five years. In addition, the 80% taxable income limitation is temporarily removed, allowing NOLs to fully offset net taxable income. Notwithstanding the reduction in the corporate income tax rate, the overall impact of the Tax Act and any future tax reform is uncertain and our business and financial condition could be adversely affected. The impact of the Tax Act and any future tax reform on holders of our common stock is likewise uncertain and could be adverse.

We are also subject to regular reviews, examinations, and audits by the IRS and other taxing authorities with respect to our taxes. Although we believe our tax estimates are reasonable, if a taxing authority disagrees with the positions we have taken, we could face additional tax liability, including interest and penalties. There can be no assurance that payment of such additional amounts upon final adjudication of any disputes will not have a material impact on our results of operations and financial position.

We also need to comply with new, evolving or revised tax laws and regulations. The enactment of or increases in tariffs, or other changes in the application or interpretation of the Tax Act, or on specific products that we may ultimately sell or with which our products compete, may have an adverse effect on our business or on our results of operations.

Inadequate funding for the FDA and other government agencies could hinder their ability to hire and retain key leadership and other personnel, prevent new products and services from being developed or commercialized in a timely manner or otherwise prevent those agencies from performing normal business functions on which the operation of our business may rely, which could negatively impact our business.

The ability of the FDA to review and approve new products can be affected by a variety of factors, including government budget and funding levels, the ability to hire and retain key personnel and accept the payment of user fees, and statutory, regulatory and policy changes. Average review times at the agency have fluctuated in recent years as a result. In addition, government funding of other government agencies on which the combined organization's operations may rely, including those that fund research and development activities is subject to the political process, which is inherently fluid and unpredictable.

Disruptions at the FDA and other agencies may also slow the time necessary for new drugs to be reviewed and/or approved by necessary government agencies, which would adversely affect our business. For example, over the last several years the U.S. government has shut down several times and certain regulatory agencies, such as the FDA, have had to furlough critical FDA and other government employees and stop critical activities. If a prolonged government shutdown occurs, it could significantly impact the ability of the FDA to timely review and process our regulatory submissions, which could have a material adverse effect on our business. Further, in our operations as a public company, future government shutdowns could impact our ability to access the public markets and obtain necessary capital in order to properly capitalize and continue our operations.

Federal legislation and actions by state and local governments may permit reimportation of drugs from foreign countries into the United States, including foreign countries where the drugs are sold at lower prices than in the United States, which could adversely affect our operating results.

We may face competition for our product candidates, if approved, from cheaper alternatives sourced from foreign countries that have placed price controls on pharmaceutical products. The Medicare Modernization Act contains provisions that may change U.S. importation laws and expand pharmacists'

and wholesalers' ability to import cheaper versions of an approved drug and competing products from Canada, where there are government price controls. These changes to U.S. importation laws will not take effect unless and until the Secretary of Health and Human Services certifies that the changes will pose no additional risk to the public's health and safety and will result in a significant reduction in the cost of products to consumers. In July of 2021, President Biden issued an executive order to bolster health-care industry competition in the interest of lowering drug prices. Among its proposals are a push for the Food and Drug Administration to work with states to import prescription drugs from Canada. It remains to be seen how this action will affect the Company and the pharmaceutical industry as a whole.

Risks Related to Dependence on Third Parties

We have relied and will rely on third-party clinical research organizations (CROs) to conduct our preclinical studies and clinical trials. If these CROs do not successfully carry out their contractual duties or meet expected deadlines, we may not be able to obtain regulatory approval for or commercialize our product candidates and our business could be substantially harmed.

We have relied upon and plan to continue to rely upon CROs and clinical data management organizations to monitor and manage data for our ongoing preclinical and clinical programs. Although we control only certain aspects of their activities, we are responsible for ensuring that each of our studies is conducted in accordance with the applicable protocol and legal, regulatory and scientific standards, and our reliance on the CROs does not relieve us of our regulatory responsibilities. We also rely on third parties to conduct our preclinical studies in accordance with Good Laboratory Practice, or GLP, requirements and the Laboratory Animal Welfare Act of 1966 requirements. We, our CROs and our clinical trial sites are required to comply with regulations and current Good Clinical Practices, or GCP, and comparable foreign requirements to ensure that the health, safety and rights of patients are protected in clinical trials, and that data integrity is assured. Regulatory authorities ensure compliance with GCP requirements through periodic inspections of trial sponsors and trial sites. If we, any of our CROs or our clinical trial sites fail to comply with applicable GCP requirements, the clinical data generated in our clinical trials or a specific site may be deemed unreliable and the FDA or comparable foreign regulatory authorities may require us to perform additional clinical trials before approving our marketing applications.

Our CROs are not our employees, and except for remedies available to us under our agreements with such CROs, we cannot control whether or not they devote sufficient time and resources to our ongoing clinical and preclinical programs. If CROs do not successfully carry out their contractual obligations or meet expected timelines or if the quality or accuracy of the clinical data they obtain is compromised due to the failure to adhere to our clinical protocols, regulatory requirements or for other reasons, our clinical trials may be extended, delayed or terminated and we may not be able to obtain regulatory approval for or successfully commercialize our product candidates. As a result, our results of operations and the commercial prospects for our product candidates would be harmed, our costs could increase and our ability to generate revenues could be delayed.

We rely on third parties to manufacture our product candidates and preclinical and clinical drug supplies.

We have no experience manufacturing our product candidates on a large clinical or commercial scale and have no manufacturing facility. We are currently dependent on Dong-A ST as our sole third party manufacturer for the manufacture of NB-01. We rely completely on third parties to supply and manufacture our preclinical and clinical drug supplies for Gemcabene and ANA001, and we intend to rely on third parties to produce commercial supplies of these product candidates.

We do not own or operate facilities for the manufacture of Gemcabene. We currently have no plans to build our own clinical or commercial scale manufacturing capabilities. We currently work exclusively with Dong-A ST as the sole manufacturer for the production of NB-01 and rely completely on third parties to supply and manufacture our preclinical and clinical drug supplies for Gemcabene and ANA001. To meet our projected needs for clinical supplies to support our activities through regulatory approval and commercial manufacturing, Dong-A ST or our other third party providers will need to provide sufficient scale of production for these projected needs. If any issues arise in the manufacturing and we are unable to arrange for alternative third-party manufacturing sources, we are unable to find an alternative third party capable of

reproducing the existing manufacturing method or we are unable to do so on commercially reasonable terms or in a timely manner, we may not be able to complete development of our product candidates, or market or distribute them.

In addition, under FDA's guidelines for botanical drug products, the harvesting and processing of the botanical raw materials that are the basis of our product candidates must be done in compliance with Good Agricultural and Collection Processes, or GACPs. We are relying on Dong-A ST and other third parties to ensure that their practices comply with applicable GACPs.

Reliance on third-party manufacturers entails risks to which we would not be subject if we manufactured our product candidates and preclinical and clinical drug supplies, including:

- reliance on the third party for regulatory compliance and quality assurance;
- the possibility of breach of the manufacturing agreement by the third party because of factors beyond our control (including a failure to synthesize and manufacture our product candidates or any products that we may eventually commercialize in accordance with our specifications);
- the possibility of termination or nonrenewal of the agreement by the third party, based on our own business priorities, at a time that is costly or damaging to us;
- delay in, or failure to obtain, regulatory approval of any of our product candidates because of the failure by our third-party manufacturer to comply with cGMP or failure to scale up manufacturing processes; and
- current manufacturer and any future manufacturers may not be able to manufacture our product candidates at a cost or in quantities or in a timely manner necessary to make commercially successful products.

If third-party manufacturers do not successfully carry out their contractual obligations or meet expected timelines or if the quality or accuracy of the clinical data they obtain is compromised due to the failure to adhere to our clinical protocols, regulatory requirements or for other reasons, our clinical trials may be extended, delayed or terminated and we may not be able to obtain regulatory approval for or successfully commercialize our product candidates.

We may engage in future acquisitions or in-licenses of technology that could disrupt our business, cause dilution to the organization's stockholders and harm our financial condition and operating results.

While we currently have no specific plans to acquire any other businesses or in-license any additional products or technology, we may, in the future, make acquisitions or licenses of, or investments in, companies, products or technologies that we believe are a strategic or commercial fit with its current product candidates and business or otherwise offer opportunities for us. In connection with these acquisitions or investments, the organization may:

- issue stock that would dilute its stockholders' percentage of ownership;
- expend cash;
- incur debt and assume liabilities; and
- incur amortization expenses related to intangible assets or incur large and immediate write-offs.

We also may be unable to find suitable acquisition or license candidates and we may not be able to complete acquisitions or licenses on favorable terms, if at all. If we do complete an acquisition or license, we cannot assure you that it will ultimately strengthen our competitive position or that it will not be viewed negatively by customers, financial markets or investors. Further, future acquisitions or licenses could also pose numerous additional risks to our operations, including:

- problems integrating the purchased or licensed business, products or technologies;
- increases to our expenses;
- the failure to have discovered undisclosed liabilities of the acquired or licensed asset or company;

- diversion of management's attention from their day-to-day responsibilities;
- harm to our operating results or financial condition;
- entrance into markets in which we have limited or no prior experience; and
- potential loss of key employees, particularly those of the acquired entity.

We may not be able to complete one or more acquisitions or effectively integrate the operations, products or personnel gained through any such acquisition without a material adverse effect on our business, financial condition and results of operations.

We may form or seek strategic alliances or enter into additional licensing arrangements in the future, and we may not realize the benefits of such alliances or licensing arrangements.

We may form or seek strategic alliances, create joint ventures or collaborations or enter into additional licensing arrangements with third parties that we believe will complement or augment our development and commercialization efforts with respect to our products and any future product candidates that we may develop. Any strategic alliance or collaboration may require us to incur non-recurring and other charges, increase our near and long-term expenditures, issue securities that dilute our existing stockholders or disrupt our management and business. Our likely collaborators include large and mid-size pharmaceutical companies, regional and national pharmaceutical companies and biotechnology companies. If we enter into any such arrangements with any third parties, we will likely have limited control over the amount and timing of resources that our collaborators dedicate to the development or commercialization of our products or any future product candidate. Our ability to generate revenues from these arrangements will depend on our collaborators' abilities to successfully perform the functions assigned to them in these arrangements. We cannot be certain that, following a strategic transaction or license, we will achieve the revenue or specific net income that justifies such transaction.

Collaborations involving our product candidates or any future product candidate pose the following risks to us:

- collaborators have significant discretion in determining the efforts and resources that they will apply to these collaborations;
- collaborators may not perform their obligations as expected;
- collaborators may not pursue development and commercialization or may elect not to continue or renew development or commercialization programs based on clinical trial results, changes in the collaborator's strategic focus or available funding or external factors such as an acquisition that diverts resources or creates competing priorities;
- collaborators may delay clinical trials, provide insufficient funding for a clinical trial program, stop a clinical trial or abandon a product candidate, repeat or conduct new clinical trials or require a new formulation of a product candidate for clinical testing;
- collaborators could independently develop, or develop with third parties, products that compete directly or indirectly with our product candidates if the collaborators believe that competitive products are more likely to be successfully developed or can be commercialized under terms that are more economically attractive;
- a collaborator with marketing and distribution rights to one or more product candidates may not commit sufficient resources to the marketing and distribution of any such product candidate;
- collaborators may not properly maintain or defend our intellectual property rights or may use our proprietary information in such a way as to invite litigation that could jeopardize or invalidate our proprietary information or expose us to potential litigation;
- collaborators may infringe the intellectual property rights of third parties, which may expose us to litigation and potential liability;
- disputes may arise between the collaborators and us that result in the delay or termination of the research, development or commercialization of our product candidate or that result in costly litigation or arbitration that diverts management's attention and resources;

- we may lose certain valuable rights under circumstances identified in its collaborations, including if it undergoes a change of control;
- collaborations may be terminated and, if terminated, may result in a need for additional capital to pursue further development or commercialization of the applicable product candidates;
- collaborators may learn about our discoveries and use this knowledge to compete with us in the future;
- the results of collaborators' preclinical or clinical studies could harm or impair other development programs;
- there may be conflicts between different collaborators that could negatively affect those collaborations and potentially others;
- the number and type of our collaborations could adversely affect our attractiveness to future collaborators or acquirers;
- collaboration agreements may not lead to development or commercialization of our product candidate in the most efficient manner or at all. If our present or future collaborator were to be involved in a business combination, the continued pursuit and emphasis on our product development or commercialization program under such collaboration could be delayed, diminished or terminated; and
- collaborators may be unable to obtain the necessary marketing approvals.

If future collaboration partners fail to develop or effectively commercialize our product candidates or any future product candidate for any of these reasons, such product candidate may not be approved for sale and our sales of such product candidate, if approved, may be limited, which would have an adverse effect on our operating results and financial condition.

If we are not able to establish new collaborations on commercially reasonable terms, we may have to alter our development and commercialization plans.

We may selectively seek additional third-party collaborators for the development and commercialization of our product candidates. Our likely collaborators for any collaboration arrangements include large and mid-size pharmaceutical companies, regional and national pharmaceutical companies and biotechnology companies. If we enter into any such arrangements with any third parties, we will likely have limited control over the amount and timing of resources that our collaborators dedicate to the development or commercialization of our product candidates. Our ability to generate revenue from these arrangements will depend on our collaborators' abilities to successfully perform the functions assigned to them in these arrangements.

We may be restricted under existing collaboration agreements from entering into future agreements on certain terms with potential collaborators. Collaborations are complex and time-consuming to negotiate and document. In addition, there have been a significant number of recent business combinations among large pharmaceutical companies that have resulted in a reduced number of potential future collaborators.

We may not be able to negotiate collaborations on a timely basis, on acceptable terms, or at all. If we are unable to do so, we may have to curtail the development of the product candidate for which we are seeking to collaborate, reduce or delay our development program or one or more of our other development programs, delay our potential commercialization or reduce the scope of any sales or marketing activities, or increase our expenditures and undertake development or commercialization activities at our own expense. If we elect to increase our expenditures to fund development or commercialization activities on our own, we may need to obtain additional capital, which may not be available to us on acceptable terms or at all. If we do not have sufficient funds, we may not be able to further develop our product candidate or bring it to market and generate product revenue.

Our employees, principal investigators, CROs and consultants may engage in misconduct or other improper activities, including noncompliance with regulatory standards and requirements, which could have a material adverse effect on our business.

We are exposed to the risk that our employees, principal investigators, CROs and consultants may engage in fraudulent conduct or other illegal activity. Misconduct by these parties could include failures to

comply with FDA regulations or similar regulations of comparable foreign regulatory authorities, to provide accurate information to the FDA or comparable foreign regulatory authorities, to comply with manufacturing standards we have established, to comply with federal and state healthcare fraud and abuse laws and regulations and similar laws and regulations established and enforced by comparable foreign regulatory authorities, to report financial information or data accurately or to disclose unauthorized activities to us. In particular, sales, marketing and business arrangements in the healthcare industry are subject to extensive laws and regulations intended to prevent fraud, kickbacks, self-dealing and other abusive practices. These laws and regulations may restrict or prohibit a wide range of pricing, discounting, marketing and promotion, sales commission, customer incentive programs and other business arrangements. Employee or third-party misconduct could also involve the improper use of information obtained in the course of clinical trials, which could result in regulatory sanctions and serious harm to our reputation. It is not always possible to identify and deter employee misconduct, and the precautions we take to detect and prevent this activity, such as employee training, may not be effective in controlling unknown or unmanaged risks or losses or in protecting us from governmental investigations or other actions or lawsuits stemming from a failure to be in compliance with such laws or regulations. If any such actions are instituted against us, and we are not successful in defending such action or asserting our rights, those actions could have a significant impact on our business and results of operations, including the imposition of significant fines or other sanctions.

Risks Related to Intellectual Property

If we are unable to obtain and maintain sufficient intellectual property rights, our competitive position could be harmed.

Our commercial success depends in part on our ability to protect our proprietary technology and products. We rely on trade secret, patent, copyright and trademark laws, and confidentiality, licensing and other agreements with employees and third parties, all of which offer only limited protection. We depend in large part on our ability to obtain and maintain patent protection in the United States and other countries with respect to our proprietary technology and products. Where we are permitted to do so under our license agreements, we seek to protect our proprietary position by filing patent applications in the United States and other countries that are related to our novel technologies and products that are important to our business.

The patent positions of biotechnology and pharmaceutical companies generally are highly uncertain, involve complex legal and factual questions and have in recent years been the subject of much litigation. As a result, the issuance, scope, validity, enforceability and commercial value of our patents, including those patent rights licensed to us by third parties, are highly uncertain.

The steps we have taken to protect our proprietary rights may not be sufficient to prevent misappropriation of our proprietary information or infringement of our intellectual property rights, both inside and outside the United States. If we are unable to adequately protect our intellectual property and proprietary technology, including through obtaining and maintaining patent protection for our technology and products, or if the scope of the patent protection obtained is not sufficient, our competitors could develop and commercialize technology and products similar or superior to ours, which could erode or negate any competitive advantage we may have and adversely affect our business.

With respect to patent rights, we do not know whether any of our owned or licensed pending patent applications for any of our product candidates will result in the issuance of patents that protect our technology or products, or which will effectively prevent others from commercializing competitive technologies and products. Our owned or licensed pending applications cannot be enforced against third parties practicing the technology claimed in such applications unless and until a patent issues from such applications. Further, the examination process may require us or our licensors to narrow the claims, which may limit the scope of patent protection that may be obtained. Although we currently have, and the 2022 License Agreement includes, a number of issued patents that are exclusively licensed to us, the issuance of a patent is not conclusive as to its inventorship, scope, validity or enforceability, and so issued patents that we own or have licensed from third parties may be challenged in the courts or patent offices in the United States and abroad. Such challenges may result in the loss of patent protection, the narrowing of claims in such patents, or the invalidity or unenforceability of such patents, which could limit our ability to stop others from using or commercializing similar or identical technology and products, or limit the duration of the patent

protection for our technology and products. Protecting against the unauthorized use of our owned and licensed patented technology, trademarks and other intellectual property rights is expensive, difficult and may, in some cases, not be possible. In some cases, it may be difficult or impossible to detect third party infringement or misappropriation of our intellectual property rights, even in relation to issued patent claims, and proving any such infringement may be even more difficult.

Laws and rulings by U.S. courts make it difficult to predict how patents will be issued or enforced in the biotechnology industry.

Changes in either the patent laws or interpretation of the patent laws in the United States and other countries may have a significant impact on our ability to protect our technology and enforce our intellectual property rights. There have been numerous changes to the patent laws and to the rules of the United States Patent and Trademark Office, or USPTO, which may have a significant impact on our ability to protect our technology and enforce our intellectual property rights. For example, the Leahy-Smith America Invents Act, which was signed into law in 2011, includes a transition from a "first-to-invent" system to a "first-to-file" system, and changes the way issued patents are challenged. Certain changes, such as the institution of inter partes review proceedings, came into effect on September 16, 2012. Substantive changes to patent law associated with the America Invents Act may affect our ability to obtain patents, and, if obtained, to enforce or defend them in litigation or post-grant proceedings, all of which could harm our business.

Furthermore, the patent positions of companies engaged in the development and commercialization of biologics and pharmaceuticals are particularly uncertain. Two cases involving diagnostic method claims and "gene patents" have been decided by the Supreme Court. On March 20, 2012, the Supreme Court issued a decision in Mayo Collaborative Services v. Prometheus Laboratories, Inc., or Prometheus, a case involving patent claims directed to measuring a metabolic product in a patient to optimize a drug dosage amount for the patient. According to the Supreme Court, the addition of well-understood, routine or conventional activity such as "administering" or "determining" steps was not enough to transform an otherwise patent ineligible natural phenomenon into patent eligible subject matter. On July 3, 2012, the USPTO issued guidance indicating that process claims directed to a law of nature, a natural phenomenon or an abstract idea that do not include additional elements or steps that integrate the natural principle into the claimed invention such that the natural principle is practically applied and the claim amounts to significantly more than the natural principle itself should be rejected as directed to non-statutory subject matter. On June 13, 2013, the Supreme Court issued its decision in Association for Molecular Pathology v. Myriad Genetics, Inc., or Myriad, a case involving patent claims held by Myriad Genetics, Inc. relating to the breast cancer susceptibility genes BRCA1 and BRCA2. Myriad held that isolated segments of naturally occurring DNA, such as the DNA constituting the BRCA1 and BRCA2 genes, is not patent eligible subject matter, but that complementary DNA, which is an artificial construct that may be created from RNA transcripts of genes, may be patent eligible. We cannot assure you that our current patent protection and our efforts to seek patent protection for our technology and products will not be negatively impacted by the decisions described above, rulings in other cases or changes in guidance or procedures issued by the USPTO.

Moreover, although the Supreme Court has held in Myriad that isolated segments of naturally occurring DNA are not patent-eligible subject matter, certain third parties could allege that activities that we may undertake infringe other gene-related patent claims, and we may deem it necessary to defend against these claims by asserting non-infringement and/or invalidity positions, or pay to obtain a license to these claims. In any of the foregoing or in other situations involving third-party intellectual property rights, if we are unsuccessful in defending against claims of patent infringement, we could be forced to pay damages or be subjected to an injunction that would prevent us from utilizing the patented subject matter. Such outcomes could harm our business.

We may not be able to protect or practice our intellectual property rights throughout the world.

In jurisdictions where we or our licensors have not obtained patent protection, competitors may use our owned or licensed intellectual property to develop their own products and, further, may export otherwise infringing products to territories where we or our licensors have patent protection, but where it is more difficult to enforce a patent as compared to the U.S. Such competitor products may compete with our product candidates, including ANA001, NB-01 and NB-02 and, if the 2022 License Agreement is consummated,

DA-1241 and DA-1726, if approved, or any future product candidate in jurisdictions where we or our licensors do not have issued or granted patents or where our owner or licensed issued or granted patent claims or other intellectual property rights are not sufficient to prevent competitor activities in these jurisdictions. The legal systems of certain countries, particularly certain developing countries, make it difficult to enforce patents and such countries may not recognize other types of intellectual property protection, particularly that relate to pharmaceuticals. This could make it difficult for us to prevent the infringement of our owned or licensed patents or marketing of competing products in violation of our proprietary rights generally in certain jurisdictions. Proceedings to enforce our owned or licensed patent rights in foreign jurisdictions could result in substantial cost and divert its efforts and attention from other aspects of our business.

The laws of some jurisdictions do not protect intellectual property rights to the same extent as the laws in the United States, and many companies have encountered significant difficulties in protecting and defending such rights in such jurisdictions. If we, or our licensors, encounter difficulties in protecting, or are otherwise precluded from effectively protecting, the intellectual property rights important for our business in such jurisdictions, the value of these rights may be diminished and we may face additional competition from others in those jurisdictions. Many countries have compulsory licensing laws under which a patent owner may be compelled to grant licenses to third parties. In addition, many countries limit the enforceability of patents against government agencies or government contractors. In these countries, the patent owner may have limited remedies, which could materially diminish the value of such patent. If we, or any of our licensors, are forced to grant a license to third parties with respect to any patents relevant to our business, our competitive position in the relevant jurisdiction may be impaired and our business and results of operations may be adversely affected.

We may become involved in lawsuits to protect or enforce our owned or licensed intellectual property, which could be expensive, time consuming and unsuccessful.

In addition to the possibility of litigation relating to infringement claims asserted against us, we may become a party to other patent litigation and other proceedings, including inter partes review proceedings, post-grant review proceedings, derivation proceedings declared by the USPTO and similar proceedings in foreign countries, regarding intellectual property rights with respect to our current or future technologies or product candidates or products. The cost to us of any patent litigation or other proceeding, even if resolved in our favor, could be substantial. Some of our competitors may be able to sustain the costs of such litigation or proceedings more effectively than we can because of their substantially greater financial resources. Patent litigation and other proceedings may also absorb significant management time. Uncertainties resulting from the initiation and continuation of patent litigation or other proceedings could impair our ability to compete in the marketplace.

Competitors may infringe or otherwise violate our intellectual property, including patents that may issue to or be licensed by us. As a result, we may be required to file claims in an effort to stop third-party infringement or unauthorized use. Any such claims could provoke these parties to assert counterclaims against us, including claims alleging that we infringe their patents or other intellectual property rights. This can be prohibitively expensive, particularly for a company of our size, and time-consuming, and even if we are successful, any award of monetary damages or other remedy we may receive may not be commercially valuable. In addition, in an infringement proceeding, a court may decide that our asserted intellectual property is not valid or is unenforceable, or may refuse to stop the other party from using the technology at issue on the grounds that our owned or licensed intellectual property does not cover its technology. An adverse determination in any litigation or defense proceedings could put our owned or licensed intellectual property at risk of being invalidated or interpreted narrowly and could put our owned or licensed patent applications at risk of not issuing.

If the breadth or strength of our patent or other intellectual property rights, whether owned or licensed, is compromised or threatened, it could allow third parties to commercialize our technology or products or result in our inability to commercialize our technology and products without infringing third-party intellectual property rights. Further, third parties may be dissuaded from collaborating with us.

Interference or derivation proceedings brought by the USPTO or its foreign counterparts may be necessary to determine the priority of inventions with respect to our patent applications, and we or our

licensors may also become involved in other proceedings, such as re-examination proceedings, before the USPTO or its foreign counterparts. Due to the substantial competition in the pharmaceutical space, the number of such proceedings may increase. This could delay the prosecution of our pending patent applications or impact the validity and enforceability of any future patents that we may obtain. In addition, any such litigation, submission or proceeding may be resolved adversely to us and, even if successful, may result in substantial costs and distraction to our management.

Furthermore, because of the substantial amount of discovery required in connection with intellectual property litigation, there is a risk that some of our confidential information could be compromised by disclosure during this type of litigation. Moreover, intellectual property law relating to the fields in which we operate is still evolving and, consequently, patent and other intellectual property positions in our industry are subject to change and are often uncertain. We may not prevail in any of these suits or other efforts to protect its technology, and the damages or other remedies awarded, if any, may not be commercially valuable. During the course of this type of litigation, there could be public announcements of the results of hearings, motions or other interim proceedings or developments. If securities analysts or investors perceive these results to be negative, the market price for our common stock could be significantly harmed.

Third parties may initiate legal proceedings alleging that we are infringing their intellectual property rights, the outcome of which would be uncertain and could have a material adverse effect on the success of our business.

Our commercial success depends upon our ability to develop, manufacture, market and sell our product candidates, including ANA001, NB-01 and NB-02 and, if the 2022 License Agreement is consummated, DA-1241 and DA-1726, and to use our proprietary technologies without infringing the proprietary rights of third parties. We may become party to, or threatened with, future adversarial proceedings or litigation regarding intellectual property rights with respect to our products and technology, including interference and various post grant proceedings before the USPTO or non-U.S. opposition proceedings. Third parties may assert infringement claims against us based on existing patents or patents that may be granted in the future.

As a result of any such infringement claims, or to avoid potential claims, we may choose or be compelled to seek intellectual property licenses from third parties. These licenses may not be available on acceptable terms, or at all. Even if we are able to obtain a license, the license would likely obligate us to pay license fees or royalties or both, and the rights granted to us likely would be nonexclusive, which would mean that our competitors also could obtain licenses to the same intellectual property. Ultimately, we could be prevented from commercializing a product candidate or technology or be forced to cease some aspect of our business operations if, as a result of actual or threatened infringement claims, we are unable to enter into licenses of the relevant intellectual property on acceptable terms. Further, if we attempt to modify a product candidate or technology or to develop alternative methods or products in response to infringement claims or to avoid potential claims, we could incur substantial costs, encounter delays in product introductions or interruptions in sales. Ultimately, such efforts could be unsuccessful.

Intellectual property litigation could cause us to spend substantial resources and distract our personnel from their normal responsibilities.

Litigation or other legal proceedings relating to intellectual property claims, with or without merit, is unpredictable and generally expensive and time consuming and is likely to divert significant resources from our core business, including distracting our technical and management personnel from their normal responsibilities. Furthermore, because of the substantial amount of discovery required in connection with intellectual property litigation, there is a risk that some of our confidential information could be compromised by disclosure during this type of litigation. In addition, there could be public announcements of the results of hearings, motions or other interim proceedings or developments and if securities analysts or investors perceive these results to be negative, it could have a substantial adverse effect on the price of our common stock and negatively impact our ability to raise additional funds. Such litigation or proceedings could substantially increase our operating losses and reduce the resources available for development activities or any future sales, marketing or distribution activities.

We may not have sufficient financial or other resources to adequately conduct such litigation or proceedings. Some of our competitors may be able to sustain the costs of such litigation or proceedings

more effectively than we can because of their greater financial resources and more mature and developed intellectual property portfolios. Accordingly, despite our efforts, we may not be able to prevent third parties from infringing upon or misappropriating or from successfully challenging our intellectual property rights. Uncertainties resulting from the initiation and continuation of patent litigation or other proceedings could have a material adverse effect on our ability to compete in the marketplace.

Our trade secrets are difficult to protect and if we are unable to protect the confidentiality of our trade secrets, our business and competitive position would be harmed.

In addition to seeking patents for some of our technologies and product candidates, we also rely on trade secrets, including unpatented know-how, technology and other proprietary information, to maintain our competitive position. We seek to protect these trade secrets, in part, by entering into non-disclosure and confidentiality agreements with parties who have access to them, such as our employees, corporate collaborators, outside scientific collaborators, contract manufacturers, consultants, advisors and other third parties. We also enter into confidentiality, non-competition, non-solicitation, and invention assignment agreements with our employees and consultants that obligate them to assign to us any inventions developed in the course of their work for us. However, we cannot guarantee that we have executed these agreements with each party that may have or have had access to our trade secrets or that the agreements we have executed will provide adequate protection. Despite these efforts, any of these parties may breach the agreements and disclose our proprietary information, including our trade secrets, and we may not be able to seek patent protection on technology relating to our product candidates or obtain adequate remedies for such breaches. As a result, we may be forced to bring claims against third parties, or defend claims that they bring against us, to determine ownership of what we regard as our intellectual property. Monitoring unauthorized disclosure is difficult and we do not know whether the procedures that we have followed to prevent such disclosure are or will be adequate. Enforcing a claim that a party illegally disclosed or misappropriated a trade secret is difficult, expensive and time-consuming, and the outcome is unpredictable. In addition, some courts inside and outside the United States may be less willing or unwilling to protect trade secrets.

Furthermore, if any of the technology or information that we protect as trade secrets were to be lawfully obtained or independently developed by a competitor, we would have no right to prevent them from using that technology or information to compete with us. If any of our trade secrets were to be disclosed to, or independently developed by, a competitor, our competitive position would be harmed.

Obtaining and maintaining our patent protection depends on compliance with various procedural, documentary, fee payment and other requirements imposed by governmental patent agencies, and our patent protection could be reduced or eliminated for non-compliance with these requirements.

Periodic maintenance fees on any issued patent are due to be paid to the USPTO, and foreign patent agencies in several stages over the lifetime of the patent. The USPTO and various foreign governmental patent agencies require compliance with a number of procedural, documentary, fee payment and other requirements during the patent application process. While an inadvertent lapse can in many cases be cured by payment of a late fee or by other means in accordance with the applicable rules, there are situations in which noncompliance can result in abandonment or lapse of the patent or patent application, resulting in partial or complete loss of patent rights in the relevant jurisdiction. Non-compliance events that could result in abandonment or lapse of a patent or patent application include, but are not limited to, failure to respond to official actions within prescribed time limits, non-payment of fees and failure to properly legalize and submit formal documents. If we or our licensors fail to maintain the patents and patent applications covering our product candidates, our competitors might be able to enter the market, which would have a material adverse effect on our business.

Intellectual property rights do not necessarily address all potential threats to our competitive advantage.

The degree of future protection afforded by our intellectual property rights is uncertain because intellectual property rights have limitations, and may not adequately protect our business or permit us to maintain our competitive advantage. For example:

- others may be able to make product candidates that are similar to our candidates but that are not covered by the claims of the patents that we own or have exclusively licensed;

- we or our future licensors or collaborators might not have been the first to make the inventions covered by the issued patent or pending patent application that we own or have exclusively licensed;
- we or our future licensors or collaborators might not have been the first to file patent applications covering certain of our inventions;
- others may independently develop similar or alternative technologies or duplicate any of our technologies without infringing our intellectual property rights;
- it is possible that our owned or exclusively licensed pending patent applications will not lead to issued patents;
- issued patents that we own or have exclusively licensed may be held invalid or unenforceable, as a result of legal challenges by our competitors;
- our competitors might conduct research and development activities in countries where we do not have patent rights and then use the information learned from such activities to develop competitive products for sale in our major commercial markets;
- we may not develop additional proprietary technologies that are patentable; and
- the patents of others may have an adverse effect on our business.

Should any of these events occur, they could significantly harm our business, results of operations and prospects.

Risks Relating to Our Common Stock and Ownership

If this offering is completed and the Series A Convertible Preferred Stock is issued to Dong-A and we receive stockholder approval for its conversion to common stock, Dong-A will have a significant interest in and may control us, and its interests may conflict with ours or yours in the future.

If this offering is completed and the Series A Convertible Preferred Stock is issued to Dong-A and we receive stockholder approval for its conversion to common stock, Dong-A will have a significant interest in and may own more than 50% of our outstanding common stock. In addition, pursuant to the Investor Rights Agreement between us and Dong-A, if this offering is consummated and we receive stockholder approval, Dong-A will have the right to appoint a number of our directors commensurate with its percentage holding of our common stock, which may result in Dong-A controlling both the determinations of the Board of Directors and the vote of all matters submitted to a vote of our shareholders, which enables them to control all corporate decisions. This concentration of ownership may delay, deter or prevent acts that would be favored by our other shareholders. The interests of Dong-A may not always coincide with our interests or the interests of our other shareholders. For as long as Dong-A owns shares of our common stock and the Investor Rights Agreement is effective, Dong-A will have significant influence with respect to our management, business plans and policies, including the appointment and removal of our officers, decisions on whether to raise future capital and amending our charter and bylaws, which govern the rights attached to our common stock. In particular, if Dong-A owns a significant percentage of our stock, the Principal Shareholders will be able to cause or prevent a change of control of us or a change in the composition of our Board and could preclude any unsolicited acquisition of us. The concentration of ownership could deprive you of an opportunity to receive a premium for your shares of common stock as part of a sale of us and ultimately might affect the market price of our common stock. In addition, this concentration of ownership may adversely affect the trading price of our common stock because investors may perceive disadvantages in owning shares in a company with significant stockholders.

Dong-A and its affiliates engage in a broad spectrum of activities, including investments in the healthcare industry generally. In the ordinary course of its business activities, Dong-A and its affiliates may engage in activities where their interests conflict with our interests or those of our other shareholders, such as investing in or advising businesses that directly or indirectly compete with certain portions of our business or are suppliers or customers of ours. Our certificate of incorporation provides that neither Dong-A or any of their affiliates or any director who is not employed by us (including any non-employee director who serves as one of our officers in both her or his director and officer capacities) or its affiliates have any

duty to refrain from engaging, directly or indirectly, in the same business activities or similar business activities or lines of business in which we operate. Dong-A also may pursue acquisition opportunities that may be complementary to our business, and, as a result, those acquisition opportunities may not be available to us. In addition, Dong-A may have an interest in pursuing acquisitions, divestitures and other transactions that, in their judgment, could enhance its investment, even though such transactions might involve risks to you.

If this offering is completed and the Series A Convertible Preferred Stock is issued to Dong-A and we receive stockholder approval for its conversion to common stock, we may be a "controlled company" within the meaning of the Nasdaq listing rules and may follow certain exemptions from certain corporate governance requirements that could adversely affect our public shareholders.

Upon the closing of this offering and the Series A Convertible Preferred Stock is issued to Dong-A and we receive stockholder approval for its conversion to common stock, Dong-A may own more than 50% of our outstanding common stock. In that case, we would meet the definition of a "*controlled company*" under the corporate governance standards for Nasdaq listed companies and for so long as we remain a "*controlled company*" under this definition, we would be eligible to utilize certain exemptions from the corporate governance requirements of Nasdaq, including the requirements (i) that a majority of the Board consist of independent directors, (ii) to have a governance committee that is composed entirely of independent directors with a written charter addressing the committee's purpose and responsibilities, (iii) to have a compensation committee that is composed entirely of independent directors with a written charter addressing the committee's purpose and responsibilities, (iv) that the compensation committee consider certain independence factors when engaging legal counsel and other committee advisors and (v) for an annual performance evaluation of the governance and compensation committees. Although we do not intend to rely on the "*controlled company*" exemptions under the Nasdaq listing rules even if we are deemed a "*controlled company*," we could elect to rely on these exemptions in the future. If we were to elect to rely on the "*controlled company*" exemptions, a majority of the members of the Board might not be independent directors and our nominating and corporate governance and compensation committees might not consist entirely of independent directors. Accordingly, if we rely on the exemptions, during the period we remain a *controlled company* and during any transition period following a time when we are no longer a *controlled company*, you would not have the same protections afforded to shareholders of companies that are subject to all of the corporate governance requirements of Nasdaq.

Provisions in our corporate charter documents and under Delaware law could make an acquisition of us, which may be beneficial to our stockholders, more difficult and may prevent attempts by our stockholders to replace or remove our current management.

Provisions in our certificate of incorporation and the bylaws may discourage, delay or prevent a merger, acquisition or other change in control of us that stockholders may consider favorable, including transactions in which our stockholders might otherwise receive a premium for their shares. These provisions could also limit the price that investors might be willing to pay in the future for shares of our common stock, thereby depressing the market price of our common stock. In addition, because our board is responsible for appointing the members of our management team, these provisions may frustrate or prevent any attempts by stockholders to replace or remove their current management by making it more difficult for stockholders to replace members of our board. Among other things, these provisions:

- establish a classified board of directors such that not all members of the board are elected at one time;
- allow the authorized number of our directors to be changed only by resolution of our board of directors;
- limit the manner in which our stockholders can remove directors from the board;
- establish advance notice requirements for stockholder proposals that can be acted on at stockholder meetings and nominations to our board of directors;
- require that stockholder actions must be effected at a duly called stockholder meeting and prohibit actions by our stockholders by written consent;

- prohibit our stockholders from calling special meetings;
- authorize our board to issue preferred stock without stockholder approval, which preferred stock may include rights superior to the rights of the holders of common stock, and which could be used to institute a shareholder rights plan, or so-called "poison pill," that would work to dilute the stock ownership of a potential hostile acquirer, effectively preventing acquisitions that have not been approved by our board; and
- require the approval of the holders of at least two-thirds of the votes that all our stockholders would be entitled to cast to amend or repeal certain provisions of our charter or bylaws.

Moreover, because we are incorporated in Delaware, we are governed by the provisions of Section 203 of the Delaware General Corporation Law, which prohibits a person who owns in excess of 15% of our outstanding voting stock from merging or combining with it for a period of three years after the date of the transaction in which the person acquired in excess of 15% of our outstanding voting stock, unless the merger or combination is approved in a prescribed manner.

We are a "smaller reporting company" and we cannot be certain if the reduced reporting requirements applicable to such companies could make our common stock less attractive to investors.

We are a "smaller reporting company", as defined in the Exchange Act. For as long as we continue to be a smaller reporting company, we may take advantage of exemptions from various reporting requirements that are applicable to other public companies that are not "emerging growth companies", including exemption from compliance with the auditor attestation requirements of Section 404 of the Sarbanes-Oxley Act of 2002 (Sarbanes-Oxley Act), only being required to provide two years of audited financial statements in annual reports and reduced disclosure obligations regarding executive compensation in its periodic reports and proxy statements.

We cannot predict if investors will find our common stock less attractive because we may rely on these exemptions. If some investors find our common stock less attractive as a result, there may be a less active trading market for our common stock and our stock price may be more volatile.

We have identified material weaknesses in our internal control over financial reporting that could, if not remediated, result in material misstatements in our financial statements or impair our ability to produce accurate and timely consolidated financial statements.

We concluded that there were material weaknesses relating to our internal control over financial reporting relating to a lack of segregation of duties over certain financial processes, and logical access to financial reporting systems. For more information about these material weaknesses, see Part II, Item 9A (Controls and Procedures) of our Annual Report on Form 10-K for the year ended December 31, 2021, which is incorporated herein by reference. A material weakness is a deficiency, or a combination of deficiencies, in internal control over financial reporting such that there is a reasonable possibility that a material misstatement of the company's annual or interim consolidated financial statements will not be prevented or detected on a timely basis.

Although we have begun to take measures to remediate these material weaknesses, the measures we have taken, and expect to take, to improve our internal controls may not be sufficient to address the issues identified, to ensure that our internal controls are effective or to ensure that the identified material weaknesses will not result in a material misstatement of our annual or interim consolidated financial statements. If we are unable to correct material weaknesses or deficiencies in internal controls in a timely manner, our ability to record, process, summarize and report financial information accurately and within the time periods specified in the rules and forms of the SEC will be adversely affected. This failure could negatively affect the market price and trading liquidity of our common stock, cause investors to lose confidence in our reported financial information, subject us to civil and criminal investigations and penalties, and materially and adversely impact our business and financial condition.

General Risks

Our business and operations would suffer in the event of system failures or unplanned events.

Despite the implementation of security measures, our internal computer systems and those of our current and future contractors and consultants are vulnerable to damage from computer viruses,

unauthorized access, natural disasters, terrorism, war and telecommunication and electrical failures. While we are not aware of any such material system failure, accident or security breach to date, if such an event were to occur and cause interruptions in our operations, it could result in a material disruption of our development programs and our business operations. For example, the loss of clinical trial data from completed or future clinical trials could result in delays in regulatory approval efforts and significantly increase our costs to recover or reproduce the data. To the extent that any disruption or security breach were to result in a loss of, or damage to, our data or applications, or inappropriate disclosure of confidential or proprietary information, we could incur liability and the further development and commercialization of our product candidates could be delayed.

Furthermore, any unplanned event, such as flood, fire, explosion, tornadoes, earthquake, extreme weather condition, medical epidemics, power shortage, telecommunication failure or other natural or manmade accidents or incidents that result in us being unable to fully utilize the facilities, may have an adverse effect on our ability to operate the business, particularly on a daily basis, and have significant negative consequences on our financial and operating conditions. Loss of access to these facilities may result in increased costs, delays in the development of our product candidates or interruption of our business operations.

We rely significantly on information technology and any failure, inadequacy, interruption or security lapse of that technology or loss of data, including any cyber security incidents, could compromise sensitive information related to our business, prevent us from accessing critical information or expose us to liability which could harm our ability to operate our business effectively and adversely affect our business and reputation.

In the ordinary course of our business, our contract research organizations and other third parties on which we rely collect and store sensitive data, including legally protected patient health information, personally identifiable information about our employees, intellectual property, and proprietary business information. We manage and maintain our applications and data utilizing on-site systems. These applications and data encompass a wide variety of business-critical information, including research and development information and business and financial information.

The secure processing, storage, maintenance and transmission of this critical information is vital to our operations and business strategy. Despite the implementation of security measures, our internal computer systems and those of third parties with which we contract are vulnerable to damage from cyber-attacks, computer viruses, breaches, unauthorized access, interruptions due to employee error or malfeasance or other disruptions, or damage from natural disasters, terrorism, war and telecommunication and electrical failures. Any such event could compromise our networks and the information stored there could be accessed by unauthorized parties, publicly disclosed, lost or stolen. We have measures in place that are designed to detect and respond to such security incidents and breaches of privacy and security mandates. Any such access, disclosure or other loss of information could result in legal claims or proceedings, liability under laws that protect the privacy of personal information, government enforcement actions and regulatory penalties. Unauthorized access, loss or dissemination could also disrupt our operations, including our ability to conduct research, development and commercialization activities, process and prepare Company financial information, manage various general and administrative aspects of our business and damage our reputation, in addition to possibly requiring substantial expenditures of resources to remedy, any of which could adversely affect our business. The loss of clinical trial data could result in delays in our regulatory approval efforts and significantly increase our costs to recover or reproduce the data. In addition, there can be no assurance that we will promptly detect any such disruption or security breach, if at all. To the extent that any disruption or security breach were to result in a loss of, or damage to, our data or applications, or inappropriate disclosure of confidential or proprietary information, we could incur liability and our research, development and commercialization efforts could be delayed.

An active trading market for our common stock may not be maintained.

Our common stock is currently traded on the Nasdaq Capital Market, but we can provide no assurance that we will be able to maintain an active trading market for our shares on the Nasdaq Capital Market or any other exchange in the future. If there is no active market for our common stock, it may be difficult for our stockholders to sell shares without depressing the market price for the shares or at all.

If securities analysts do not publish research or reports about our business or if they publish negative evaluations of our stock, the price of our stock could decline.

If one or more analysts cover our business and downgrade their evaluations of our stock or publish inaccurate or unfavorable research about our business, the price of our stock could decline. If one or more of these analysts cease to cover our stock, we could lose visibility in the market for our stock, which in turn could cause our stock price and trading volume to decline.

We incur increased costs as a result of operating as a public company and our management is required to devote substantial time to compliance initiatives.

The Sarbanes-Oxley Act, the Dodd-Frank Wall Street Reform and Consumer Protection Act, the listing requirements of the stock exchange upon which our common stock is listed and other applicable securities rules and regulations impose various requirements on public companies, including establishment and maintenance of effective disclosure and financial controls and corporate governance practices. Our management and other personnel devote a substantial amount of time to these compliance initiatives. Moreover, these rules and regulations increase our legal and financial compliance costs and make some activities more time-consuming and costly. However, these rules and regulations are often subject to varying interpretations, in many cases due to their lack of specificity, and, as a result, their application in practice may evolve over time as new guidance is provided by regulatory and governing bodies. This could result in continuing uncertainty regarding compliance matters and higher costs necessitated by ongoing revisions to disclosure and governance practices. Stockholder activism, the current political environment and the current high level of government intervention and regulatory reform may lead to substantial new regulations and disclosure obligations, which may lead to additional compliance costs and impact the manner in which we operate our business in ways we cannot currently anticipate.

We are subject to Section 404 of the Sarbanes-Oxley Act and the related rules of the SEC that generally require our management and independent registered public accounting firm to report on the effectiveness of our internal control over financial reporting. However, for so long as we remain an “emerging growth company” as defined in the JOBS Act or a “smaller reporting company”, we intend to take advantage of certain exemptions from various reporting requirements that are applicable to public companies that are not emerging growth companies and/or smaller reporting companies, including, but not limited to, for emerging growth companies, not being required to comply with the auditor attestation requirements of Section 404 of the Sarbanes-Oxley Act. Once we are no longer an “emerging growth company” and if our public float is above $75 million as of the last business day of our most recently completed second fiscal quarter or, if before such date, we opt to no longer take advantage of the applicable exemption, we will be required to include an opinion from our independent registered public accounting firm on the effectiveness of our internal control over financial reporting.

To achieve compliance with Section 404, we are required to engage in a process to document and evaluate our internal control over financial reporting, which is both costly and challenging. In this regard, we must dedicate internal resources, hire additional finance and accounting personnel, potentially engage outside consultants and adopt a detailed work plan to assess and document the adequacy of internal control over financial reporting, continue steps to improve control processes as appropriate, validate through testing that controls are functioning as documented and implement a continuous reporting and improvement process for internal control over financial reporting.

During the course of our review and testing, we may identify deficiencies and be unable to remediate them before we must provide the required reports. We or our independent registered public accounting firm may not be able to conclude on an ongoing basis that we have effective internal control over financial reporting, which could harm our operating results, cause investors to lose confidence in our reported financial information and cause the trading price of our stock to fall.

In addition, as a public company we are required to timely file accurate quarterly and annual reports with the SEC under the Exchange Act. In order to report our results of operations and financial statements on an accurate and timely basis, we will depend on CROs to provide timely and accurate notice of their costs to it. Any failure to report our financial results on an accurate and timely basis could result in sanctions, lawsuits, delisting of our shares from Nasdaq or other adverse consequences that would materially harm our business.

We do not anticipate declaring or paying, in the foreseeable future, any cash dividends on our capital stock and, consequently, the ability of our stockholders to achieve a return on their investment will depend on appreciation in the price of our common stock.

We have never declared or paid any cash dividend on our capital stock and do not currently intend to do so in the foreseeable future. We currently anticipate that we will retain future earnings for the development, operation and expansion of our business. Therefore, the success of an investment in shares of our common stock will depend upon any future appreciation in their value. There is no guarantee that shares of our common stock will appreciate in value or even maintain the price at which you purchased them.

Our Bylaws designate the Court of Chancery of the State of Delaware as the sole and exclusive forum for certain types of actions and proceedings that may be initiated by our stockholders, which could limit our stockholders' ability to obtain a favorable judicial forum for disputes with us or our directors, officers or employees.

Our Bylaws provide that, unless we consent in writing to the selection of an alternative forum, the Court of Chancery of the State of Delaware will generally be the sole and exclusive forum for any derivative action or proceeding brought on its behalf, any action asserting a claim of breach of a fiduciary duty owed by any of our directors, officers or other employees to us or our stockholders, any action asserting a claim arising pursuant to any provision of the Delaware General Corporation Law, as amended, the certificate of incorporation or the bylaws or any other action asserting a claim governed by the internal affairs doctrine. This provision does not apply to claims arising under the Securities Act and the Exchange Act or any claim for which the federal courts have exclusive jurisdiction. Any person or entity purchasing or otherwise acquiring any interest in shares of our capital stock shall be deemed to have notice of and to have consented to the provisions of the bylaws described above. This choice of forum provision may limit a stockholder's ability to bring a claim in a judicial forum that it finds favorable for disputes with us or our directors, officers or other employees, which may discourage such lawsuits against us and our directors, officers and employees. Alternatively, if a court were to find this provision inapplicable to, or unenforceable in respect of, one or more of the specified types of actions or proceedings, we may incur additional costs associated with resolving such matters in other jurisdictions, which could adversely affect our business and financial condition.

Unstable market and economic conditions may have serious adverse consequences on our business, financial condition and stock price.

The global credit and financial markets have experienced extreme volatility and disruptions in the past several years, including severely diminished liquidity and credit availability, declines in consumer confidence, declines in economic growth, increases in unemployment rates and uncertainty about economic stability. We cannot assure you that further deterioration in credit and financial markets and confidence in economic conditions will not occur. Our general business strategy may be adversely affected by any such economic downturn, volatile business environment or continued unpredictable and unstable market conditions. If the current equity and credit markets deteriorate, or do not improve, it may make any necessary debt or equity financing more difficult, more costly, and more dilutive. Failure to secure any necessary financing in a timely manner and on favorable terms could have a material adverse effect on our growth strategy, financial performance and stock price and could require it to delay or abandon clinical development plans. In addition, there is a risk that one or more of our current service providers, manufacturers and other partners may not survive these difficult economic times, which could directly affect our ability to attain our operating goals on schedule and on budget.

Risks Related to This Offering

Because our management will have broad discretion and flexibility in how the net proceeds from this offering are used, our management may use the net proceeds in ways with which you disagree or which may not prove effective.

We currently intend to use the net proceeds from this offering as discussed under "Use of Proceeds" in this prospectus. We have not allocated specific amounts of the net proceeds from this offering for any of the foregoing purposes. Accordingly, our management will have significant discretion and flexibility in applying

the net proceeds of this offering. You will be relying on the judgment of our management with regard to the use of these net proceeds, and you will not have the opportunity, as part of your investment decision, to assess whether the net proceeds are being used appropriately. It is possible that the net proceeds will be invested in a way that does not yield a favorable, or any, return for us. The failure of our management to use such funds effectively could have a material adverse effect on our business, financial condition, operating results and cash flow.

The liquidity and trading volume of our common stock could be low, and our ownership will be concentrated.

The liquidity and trading volume of our common stock has at times been low in the past and could again be low in the future. If the liquidity and trading volume of our common stock is low, this could adversely impact the trading price of our shares, our ability to issue stock and our stockholders' ability to obtain liquidity in their shares.

Following this offering, the payment of the Upfront License Payment and the consummation of the private offering, Dong-A will hold approximately % of our outstanding common stock, assuming conversion of all of the Series B Convertible Preferred Stock into common stock and conversion of all of the Series A Convertible Preferred Stock into common stock, following stockholder approval of the issuance of voting shares as part of the Upfront License Payment and in the private offering. As a result, Dong-A will be able to affect the outcome of, or exert significant influence over, all matters requiring stockholder approval, including the election and removal of directors and any change in control. In particular, this concentration of ownership of our common stock could have the effect of delaying or preventing a change in control of us or otherwise discouraging or preventing a potential acquirer from attempting to obtain control of us. This, in turn, could have a negative effect on the market price of our common stock. It could also prevent our stockholders from realizing a premium over the market prices for their shares of common stock. Moreover, the interests of this concentration of ownership may not always coincide with our interests or the interests of other stockholders. The concentration of ownership also contributes to the low trading volume and volatility of our common stock.

There is no public market for the Series B Convertible Preferred Stock or warrants being offered in this offering.

The public offering price for the securities will be determined by negotiations between us, the underwriters and prospective investors, and may not be indicative of prices that will prevail in the trading market. We do not intend to apply to list the Series B Convertible Preferred Stock and the warrants on the Nasdaq Capital Market or any nationally recognized trading system, and accordingly, there will be no trading market for such warrants. In the absence of an active public trading market:

- you may not be able to resell your securities at or above the public offering price;
- the market price of our common stock may experience more price volatility; and
- there may be less efficiency in carrying out your purchase and sale orders.

The market price of our common stock may be highly volatile, and you could lose all or part of your investment.

The trading price of our common stock has been and is likely to continue to be volatile. This volatility may prevent you from being able to sell your securities at or above the price you paid for your securities.

Our stock price could be subject to wide fluctuations in response to a variety of factors, which include:

- whether we achieve our anticipated corporate objectives;
- termination of the lock-up agreement or other restrictions on the ability of our stockholders and other security holders to sell shares after this offering; and
- general economic or political conditions in the United States or elsewhere.

In addition, the stock market in general, and the stock of biotechnology companies in particular, have experienced extreme price and volume fluctuations that have often been unrelated or disproportionate to

the operating performance of these companies. Broad market and industry factors may negatively affect the market price of our common stock, regardless of our actual operating performance.

If we do not meet continued listing requirements, our common stock may be delisted from the Nasdaq Capital Market, which could affect the market price and liquidity for our common stock and reduce our ability to raise additional capital.

On March 18, 2022, we received written notice (the "Notification Letter") from The Nasdaq Stock Market LLC ("Nasdaq") notifying us that the Company was not in compliance with the minimum bid price requirements set forth in Nasdaq Listing Rule 5550(a)(2) for continued listing on the Nasdaq Capital Market. Nasdaq Listing Rule 5550(a)(2) requires listed securities maintain a minimum closing bid price of $1.00 per share, and Nasdaq Listing Rule 5810(c)(3)(A) provides that a failure to meet the minimum closing bid price requirement exists if the deficiency continues for a period of 30 consecutive business days. Based on the closing bid price of the Company's common stock for the 30 consecutive business days prior to the date of the Notification Letter, the Company did not meet the minimum closing bid price requirement. To regain compliance, the closing bid price of the Company's common stock must be at least $1.00 per share for a minimum of 10 consecutive business days at any time prior to September 14, 2022. On September 12, 2022, we effected a reverse stock split of our outstanding shares of our common stock at a ratio of one-for-thirty. On September 14, 2022, we were granted an extension period by Nasdaq to comply with the minimum closing bid price requirement. On September 27, 2022, we were notified by Nasdaq that we were in compliance with all listing requirements, including the minimum closing bid price requirement.

There can be no assurance that we will be able to remain in compliance with the minimum bid price requirement and other Nasdaq listing criteria. If we fail meet the applicable continued listing requirements for the Nasdaq Capital Market in the future, Nasdaq may delist our common stock.

Delisting from the Nasdaq could adversely affect our ability to raise additional financing through the public or private sale of equity securities, would significantly affect the ability of investors to trade our securities and would negatively affect the value and liquidity of our common stock. Delisting could also have other negative results, including the potential loss of confidence by employees, the loss of institutional investor interest and fewer business development opportunities. If our common stock is delisted by the Nasdaq the price of our common stock may decline and our common stock may be eligible to trade on the OTC Bulletin Board, another over-the-counter quotation system, or on the pink sheets where an investor may find it more difficult to dispose of their common stock or obtain accurate quotations as to the market value of our common stock. Further, if we are delisted, we would incur additional costs under requirements of state "blue sky" laws in connection with any sales of our securities. These requirements could severely limit the market liquidity of our common stock and the ability of our stockholders to sell our common stock in the secondary market.

In addition, if our common stock is delisted from the Nasdaq Capital Market and the trading price remains below $5.00 per share, trading in our common stock might also become subject to the requirements of certain rules promulgated under the Exchange Act, which require additional disclosure by broker-dealers in connection with any trade involving a stock defined as a "penny stock" (generally, any equity security not listed on a national securities exchange or quoted on Nasdaq that has a market price of less than $5.00 per share, subject to certain exceptions).

Additionally, in 2020, the SEC approved a previously proposed Nasdaq rule change to expedite delisting of securities with a closing bid price at or below $0.10 for 10 consecutive trading days during any bid price compliance period and that have had one or more reverse stock splits with a cumulative ratio of one for 250 or more shares over the prior two-year period. In addition, if a company falls out of compliance with the $1.00 minimum bid price after completing reverse stock splits over the immediately preceding two years that cumulatively result in a ratio one for 250 shares, the company will not be able to avail itself of any bid price compliance periods under Rule 5810(c)(3)(A), and Nasdaq will instead require the issuance of a Staff delisting determination. The company could appeal the determination to a hearings panel, which could grant the company a 180-day exception to remain listed if it believes the company would be able to achieve and maintain compliance with the bid price requirement. Following the exception, the company would be subject to the procedures applicable to a company with recurring deficiencies (Nasdaq Rule 5815(d)(4)(B)).

You will incur immediate and substantial dilution as a result of this offering.

After giving effect to the sale by us of 1,191,422 shares of common stock (or Series B Convertible Preferred Stock) and accompanying warrants in this offering at an assumed combined public offering price of $12.59 per share of common stock (or $12.59 per share of Series B Convertible Preferred Stock) and accompanying warrants and, after deducting underwriter fees and estimated offering expenses payable by us, investors in this offering can expect an immediate dilution of $2.05 per share. For a further description of the dilution that investors in this offering may experience, see "Dilution."

In the past, we have issued shares of common stock and warrants in public offerings and private placements of our securities, and we have issued shares of common stock as compensation to our officers and directors. Our issuance of shares of common stock in the future, and the exercise of outstanding warrants or warrants that we may issue in the future, may result in additional dilution to investors in this offering.

The terms of the Series B Convertible Preferred Stock and the warrants could impede our ability to enter into certain transactions or obtain additional financing.

The terms of the Series B Convertible Preferred Stock and the warrants require us, upon the consummation of any "fundamental transaction" (as defined in the securities), to, among other obligations, cause any successor entity resulting from the fundamental transaction to assume all of our obligations under the Series B Convertible Preferred Stock and the warrants and the associated transaction documents. In addition, holders of Series B Convertible Preferred Stock and warrants are entitled to participate in any fundamental transaction on an as-converted or as-exercised basis, which could result in the holders of our common stock receiving a lesser portion of the consideration from a fundamental transaction. The terms of the Series B Convertible Preferred Stock and the warrants could also impede our ability to enter into certain transactions or obtain additional financing in the future.

Holders of warrants purchased in this offering will have no rights as stockholders until such holders exercise their warrants and acquire our shares of common stock, except as set forth in the warrants.

Except as set forth in the warrants, until holders of warrants acquire our shares of common stock upon exercise of the warrants, holders of the warrants have no rights with respect to our shares of common stock underlying such warrants, the holders will be entitled to exercise the rights of a stockholder of shares of common stock only as to matters for which the record date occurs after the exercise date.

The warrants are speculative in nature.

The warrants offered hereby do not confer any rights of share of common stock ownership on their holders, such as voting rights or the right to receive dividends, but rather merely represent the right to acquire shares of common stock at a fixed price. Specifically, commencing on the date of issuance, holders of the warrants may acquire the shares of common stock issuable upon exercise of such warrants at an exercise price of $ per share of common stock. Moreover, following this offering, the market value of the warrants is uncertain and there can be no assurance that the market value of the warrants will equal or exceed their respective public offering prices. There can be no assurance that the market price of the shares of common stock will ever equal or exceed the exercise price of the warrants, and consequently, whether it will ever be profitable for holders of warrants to exercise the warrants.

SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus contains forward-looking statements that are based on our management's beliefs and assumptions and on information currently available. This section should be read in conjunction with our financial statements and related notes incorporated by reference into this prospectus. The statements contained in this prospectus that are not historical facts are forward-looking statements within the meaning of Section 27A of the Securities Act and Section 21E of the Exchange Act.

Forward-looking statements can be identified by words such as "believe," "anticipate," "may," "might," "can," "could," "continue," "depends," "expect," "expand," "forecast," "intend," "predict," "plan," "rely," "should," "will," "may," "seek," or the negative of these terms and other similar expressions, although not all forward-looking statements contain these words. You should read these statements carefully because they discuss future expectations, contain projections of future results of operations or financial condition, or state other "forward-looking" information. These statements relate to our future plans, objectives, expectations, intentions and financial performance and the assumptions that underlie these statements.

These forward-looking statements are subject to a number of risks, uncertainties, and assumptions, including, but not limited to, those described in "Risk Factors." These forward-looking statements reflect our beliefs and views with respect to future events and are based on estimates and assumptions as of the date of this prospectus and are subject to risks and uncertainties. We discuss many of these risks in greater detail in the section titled "Risk Factors" and elsewhere in this prospectus. Given these uncertainties, you should not place undue reliance on these forward-looking statements. We qualify all of the forward-looking statements in this prospectus by these cautionary statements. Except as required by law, we assume no obligation to update these forward-looking statements publicly, or to update the reasons actual results could differ materially from those anticipated in any forward-looking statements, whether as a result of new information, future events or otherwise.

In addition, statements that "we believe" and similar statements reflect our beliefs and opinions on the relevant subject. These statements are based upon information available to us as of the date of this prospectus, and although we believe such information forms a reasonable basis for such statements, such information may be limited or incomplete, and our statements should not be read to indicate that we have conducted a thorough inquiry into, or review of, all potentially available relevant information. These statements are inherently uncertain and investors are cautioned not to unduly rely upon these statements.

This prospectus also contains estimates, projections and other information concerning our industry, our business, and the markets for certain diseases, including data regarding the estimated size of those markets. Information that is based on estimates, forecasts, projections, market research or similar methodologies is inherently subject to uncertainties and actual events or circumstances may differ materially from events and circumstances reflected in this information. Unless otherwise expressly stated, we obtained this industry, business, market, and other data from reports, research surveys, studies, and similar data prepared by market research firms and other third parties, industry, medical and general publications, government data, and similar sources.

USE OF PROCEEDS

Assuming we sell all units offered pursuant to this prospectus, we estimate the net proceeds from this offering will be approximately $13.1 million (or approximately $15.1 million if the underwriters exercise their over-allotment option in full), based on an assumed public offering price of $12.59 per unit (the last reported sale price of our shares of common stock on the Nasdaq Capital Market on October 17, 2022), after deducting underwriting discounts and commissions and estimated offering expenses payable by us as described in "Underwriting" and excluding the proceeds, if any, from the exercise of the warrants sold in this offering.

We intend to use the net proceeds from this offering and the private offering for funding development of our new inlicensed product candidates, working capital and general corporate purposes.

The allocation of the net proceeds of the offering represents our estimates based upon our current plans and assumptions regarding industry and general economic conditions, our future revenues and expenditures.

The amounts and timing of our actual use of net proceeds will vary depending on numerous factors, including the relative success and cost of our research and development programs and our ability to gain access to additional financing. As a result, our management will have broad discretion in the application of the net proceeds, and investors will be relying on our management's judgment regarding the application of the net proceeds of this offering. In addition, we might decide to postpone or not pursue certain development activities if the net proceeds from the offering and any other sources of cash are less than expected.

Pending the application of the net proceeds as described above, we will hold the net proceeds from this offering in short-term, interest-bearing, securities.

We believe that the net proceeds of this offering and the private offering, together with cash on hand, will be sufficient to fund our operations through mid-2024, assuming we sell all of the securities being offered hereby at the assumed public offering price, and we believe that we will need to raise additional capital to fund our operations thereafter. Additional capital may not be available on terms favorable to us, or at all. If we raise additional funds by issuing equity securities, our stockholders may experience dilution. Debt financing, if available, may involve restrictive covenants or additional security interests in our assets. Any additional debt or equity financing that we complete may contain terms that are not favorable to us or our stockholders. If we raise additional funds through collaboration and licensing arrangements with third parties, it may be necessary to relinquish some rights to our technologies or products or grant licenses on terms that are not favorable to us. If we are unable to raise adequate funds, we may have to delay, reduce the scope of, or eliminate some or all of, our development programs or liquidate some or all of our assets.

CAPITALIZATION

The following table summarizes our cash and cash equivalents and capitalization as of June 30, 2022:

- on an actual basis; and
- on an as adjusted basis, giving effect to (i) the sale by us of 714,853 Class A Units (each Class A Unit consisting of one share of common stock and one warrant to purchase one share of common stock) in this offering at an assumed public offering price of $12.59 per Class A Unit, which is the last reported sale price of our shares of common stock on the Nasdaq Capital Market on October 17, 2022, after deducting the estimated underwriting discounts and commissions and estimated offering expenses, and the sale by us of 476,569 Class B Units (each Class B Unit consisting of one share of Series B Convertible Preferred Stock and one warrant) at an assumed public offering price of $12.59 per Class B Unit, which is the last reported sale price of our shares of common stock on the Nasdaq Capital Market on October 17, 2022, after deducting the estimated underwriting discounts and commissions and estimated offering expenses in this offering and no exercise of any warrants included in the units, and (ii) the issuance of our Series A Convertible Preferred Stock valued at $22 million in respect of the Upfront License Payment and the sale of $15 million of Series A Convertible Preferred Stock to Dong-A in the private offering. The pro forma information set forth in the table below is illustrative only and will be adjusted based on the actual public offering price and other terms of this offering determined at pricing.

	As of June 30, 2022	
	Actual	As Adjusted[1][3]
	(in thousands, except share data)	
Cash and cash equivalents	$ 8,849	$ 36,484
Stockholders' equity:		
Series A Convertible Preferred stock, $0.001 par value, none and 3,700 shares authorized; none, actual and 3,700 shares of Series A Convertible Preferred Stock as adjusted, outstanding, none and 8,000,000 shares of Series B Convertible Preferred Stock authorized; and none and 476,569 shares of Series B Convertible Preferred Stock issued, as adjusted[2]	$ —	$ 3
Common stock, $0.001 par value, 100,000,000 shares authorized; 888,693 issued and outstanding, actual; 1,603,546 shares issued and outstanding, as adjusted	1	2
Additional paid-in capital	96,838	146,469
Accumulated deficit	(88,006)	(110,006)
Total stockholders' equity	8,833	36,468
Total capitalization	$ 8,833	$ 36,468

(1) A $1.00 increase or decrease in the assumed public offering price of $12.59 per Class A Unit and Class B Unit, which is the last reported sale price of our shares of common stock on the Nasdaq Capital Market on October 17, 2022, would increase or decrease, as appropriate, our as adjusted cash and cash equivalents, additional paid-in capital, total assets, total stockholders' equity and total capitalization by approximately $1.2 million, assuming the number of units offered by us as set forth on the cover page of this prospectus remains the same, and after deducting the estimated underwriting discounts and commissions and estimated offering expenses payable by us.

(2) The shares of our Series A Convertible Preferred Stock being issued as part of the Upfront License Payment and being sold in the private offering are not initially convertible into shares of our common stock. This table does not give effect to such conversion.

(3) All proceeds from the sale of Class A Units and Series A Convertible Preferred Stock have been reflected within Stockholders' equity for purposes of this table. The Company will be required to complete an assessment of the accounting and valuation for such instruments, which may result in a

portion of the proceeds being classified outside of Stockholder's equity and remeasured to fair value each reporting period (if liability-classified instruments). Such assessment will be completed in connection with the preparation of our consolidated financial statements for the period in which the sales occur.

Similarly, an increase or decrease of 10,000 in the number of units offered by us, based on the assumed public offering price of $12.59 per unit, would increase or decrease our as adjusted cash and cash equivalents, additional paid-in capital, total assets, total stockholders' equity and total capitalization by approximately $0.13 million, after deducting underwriting discounts and commissions and estimated offering expenses payable by us. The information discussed above is illustrative only and will adjust based on the actual public offering price, the actual number of units we offer in this offering, and other terms of this offering determined at pricing. The final public offering price will be determined through negotiation between us and the underwriters in the offering and may be at a discount to the current market price. Therefore, the assumed public offering price used throughout this prospectus may not be indicative of the final public offering price.

The total number of shares of common stock outstanding as of the date of this prospectus and after this offering is based on 888,693 shares outstanding as of June 30, 2022, assumes the sale of units based on an assumed public offering price of $12.59, the last reported sales price of a share of our common stock on the Nasdaq Capital Market on October 17, 2022, and excludes the following other securities as of June 30, 2022:

- 36,493 shares of common stock issuable upon the exercise of stock options outstanding as of June 30, 2022, at a weighted-average exercise price of $99.62 per share;
- 228,235 shares of common stock issuable upon the exercise of warrants outstanding as of June 30, 2022, at a weighted-average exercise price of $140.07;
- 167,748 shares of common stock reserved for future issuance under our 2019 Equity Incentive Plan as of June 30, 2022.
- 12,778 shares of common stock reserved for future issuance under our 2021 Inducement Plan as of June 30, 2022;
- 2,382,844 shares of common stock issuable upon exercise of the warrants included in this offering and the substantially similar warrants issued in the private offering, at an exercise price of $ per share;
- 1,747,419 shares of common stock issuable upon conversion of the Series A Convertible Preferred Stock issued as part of the Upfront License Payment; and
- 1,191,422 shares of common stock issuable upon conversion of the Series A Convertible Preferred Stock issued in the private offering.

On September 12, 2022, we effected the 2022 Reverse Stock Split. As a result of the foregoing, every thirty (30) shares of our common stock outstanding was automatically changed and reclassified into one (1) new share of common stock. Holders of common stock that would have otherwise received a fractional share of common stock pursuant to the 2022 Reverse Stock Split received cash in lieu of the fractional share. Unless indicated otherwise, the numbers set forth in this prospectus have been adjusted to reflect the 2022 Reverse Stock Split.

Except as otherwise noted, all information in this prospectus reflects and assumes (i) no conversion of Series B Convertible Preferred Stock, (ii) no exercise of outstanding options issued under our equity incentive plans, (iii) no exercise of any warrants issued in this offering and (iv) no exercise of the underwriters' option to purchase additional shares of common stock and/or warrants to purchase additional shares of common stock.

DILUTION

If you invest in our securities, your ownership interest may be diluted to the extent of the difference between the amount per unit paid by purchasers, assuming that all the units are issued and no value is attributed to the warrants, in this public offering and the as adjusted net tangible book value per share of our common stock immediately after the closing of this offering. Such calculation does not reflect any potential dilution associated with the sale and exercise of warrants, which would cause the actual dilution to you to be higher.

Our net tangible book value is the amount of our total tangible assets less our total liabilities. Net tangible book value per share is our net tangible book value divided by the number of shares of common stock outstanding as of June 30, 2022. Our net tangible book value as of June 30, 2022 was $8.8 million, or $9.94 per share, based on 888,693 shares of our common stock outstanding as of June 30, 2022.

After giving effect to the sale of 714,853 Class A Units by us in this offering at an assumed public offering price of $12.59 per Class A Unit, and the issuance of 476,569 Class B Units by us in this offering at an assumed public offering price of $12.59 per Class B Unit, and after deducting estimated underwriting discounts and commissions, placement fees and estimated offering expenses payable by us, our as adjusted net tangible book value as of June 30, 2022, assuming conversion of the all shares of Series B Convertible Preferred Stock included in the Class B Units, would have been approximately $21.9 million, or $10.54 per share of common stock. This represents an immediate increase in net tangible book value of $0.60 per share to our existing stockholders and an immediate dilution of $2.05 per share to investors purchasing units in this offering. The information above is illustrative only and will change based on actual pricing and other terms of this offering determined at pricing. The final public offering price will be determined through negotiation between us and the underwriters in the offering and may be at a discount to the current market price. Therefore, the assumed public offering price used throughout this prospectus may not be indicative of the final public offering price.

The following table illustrates this dilution on a per share basis:

Assumed public offering price	$12.59
Net tangible book value per share at June 30, 2022	$ 9.94
Increase to net tangible book value per share attributable to investors purchasing our common stock and Series B Convertible Preferred Stock in this offering, and conversion	$ 0.60
As Adjusted net tangible book value per share as of June 30, 2022, after giving effect to this offering, issuance of Series A Convertible Preferred Stock as part of the Upfront License Payment and in the private offering, and conversion	$10.54
Dilution per share to investors purchasing our common stock in this offering	$ 2.05

If any shares of common stock are issued upon exercise of outstanding options or warrants, you may experience further dilution or accretion.

The total number of shares of common stock outstanding as of the date of this prospectus and after this offering is based on 888,693 shares outstanding as of June 30, 2022, assumes the sale of 714,853 Class A Units based on an assumed public offering price of $12.59 per share, the last reported sales price of our shares of common stock on the Nasdaq Capital Market on October 17, 2022, and 476,569 shares of common stock upon conversion of the Series B Convertible Preferred Stock, based on an assumed public offering price of $12.59 per share and excludes the following other securities as of June 30, 2022:

- 36,493 shares of common stock issuable upon the exercise of stock options outstanding as of June 30, 2022, at a weighted-average exercise price of $99.62 per share;
- 228,235 shares of common stock issuable upon the exercise of warrants outstanding as of June 30, 2022, at a weighted-average exercise price of $140.07;
- 167,748 shares of common stock reserved for future issuance under our 2019 Equity Incentive Plan as of June 30, 2022;

- 12,778 shares of common stock reserved for future issuance under our 2021 Inducement Plan as of June 30, 2022;
- 2,382,844 shares of common stock issuable upon exercise of the warrants included in this offering and the substantially similar warrants issued in the private offering, at an exercise price of $ per share;
- 1,747,419 shares of common stock issuable upon conversion of the Series A Convertible Preferred Stock issued as part of the Upfront License Payment; and
- 1,191,422 shares of common stock issuable upon conversion of the Series A Convertible Preferred Stock issued in the private offering.

Except as otherwise noted, all information in this table reflects and assumes (i) no exercise of outstanding options issued under our equity incentive plans, (ii) no exercise of any warrants issued in this offering and (iii) no exercise of the underwriters' option to purchase additional shares of common stock and/or warrants to purchase additional shares of common stock.

To the extent that any of these outstanding options or warrants are exercised, or we issue additional shares under our equity incentive plans, there will be further dilution to new investors. In addition, we may choose to raise additional capital due to market conditions or strategic considerations even if we believe we have sufficient funds for our current or future operating plans. To the extent that additional capital is raised through the sale of equity or convertible debt securities, the issuance of these securities could result in further dilution to our stockholders.

UPFRONT LICENSE PAYMENT AND PRIVATE OFFERING

We have entered into the Securities Purchase Agreement with Dong-A pursuant to which, concurrently with and as a condition to the closing of a Qualified Financing, (i) Dong-A will receive $22 million of our Series A Convertible Preferred Stock for the Upfront License Payment and (ii) Dong-A will purchase, in a private offering, $15 million of our Series A Convertible Preferred Stock together with warrants substantially equivalent to the warrants, if any, included as part of the Qualified Financing. At such time as we obtain the Stockholder Approval, such shares of Series A Convertible Preferred Stock will automatically convert into shares of our common stock at a conversion price equal to the price at which such shares are sold in the Qualified Financing, subject to customary adjustments for forward and reverse stock splits, stock dividends and the like. It is anticipated that this offering, if consummated, will be a Qualified Offering and upon consummation of this offering, the Series A Convertible Preferred Stock will be issued at a purchase price and with conversion rights (upon stockholder approval) based on the public offering price of the Units being sold pursuant to this prospectus and Dong-A will receive warrants equivalent to those issued in this offering (subject to limitation on exercise prior to Stockholder Approval).

Following the closing of this offering, the issuance of the Upfront License Payment and the closing of the private offering, we will be required to hold a special meeting of the holders of our common stock for the purpose of voting upon the approval and authorization of any and all corporate actions in furtherance of the full conversion of the outstanding shares of Series A Convertible Preferred Stock into shares of common stock, including the approval of the issuance of voting shares in respect of the Upfront License Payment and in the private offering. The closing of the offering of units being made pursuant to this prospectus is contingent upon the completion of the concurrent private offering and the closing of the private offering is contingent upon the completion of the offering of units. As a result, if either of this offering or the private offering does not occur, neither will occur.

We anticipate that the net proceeds from the issuance of the Upfront License Payment and the private offering will equal $, after deducting placement fees and expenses relating to the 2022 License Agreement.

DIVIDEND POLICY

We have never declared or paid any dividends on our common stock, and we do not currently intend to pay any dividends on our common stock for the foreseeable future. Any future determination to pay dividends on our common stock will be, subject to applicable law, at the discretion of our Board of Directors and will depend upon, among other factors, our results of operations, financial condition, capital requirements, and contractual restrictions in loan or other agreements.

BUSINESS

Overview

We are a clinical-stage biotechnology company which has entered into the 2022 License Agreement with Dong-A to inlicense the rights to two assets, focused on treatment of NASH and obesity. The effectiveness of the 2022 License Agreement is subject to consummation of a Qualified Financing (as descibed below). Concurrently with the 2022 License Agreement, we entered into the Securities Purchase Agreement with Dong-A pursuant to which Dong-A agreed to purchase $15 million in Series A Convertible Preferred Stock and warrants on substantially the same terms as this offering subject to consummation of a Qualified Financing. It is intended that this offering will be a Qualified Financing and, if this offering is consummated, the 2022 License Agreement will be effective and Dong-A will consummate the purchase under the Securities Purchase Agreement. Prior to this offering, we have been focused on four therapeutic programs designed to impact a range of indications in coronavirus, neurodegenerative and cardiometabolic disease. Additional information regarding the general development of our business is set forth in our Annual Report on Form 10-K for the year ended December 31, 2021.

On September 14, 2022, we entered into the 2022 License Agreement pursuant to which, subject to the conditions set forth therein, we would have an exclusive license (other than in the Republic of Korea) to two proprietary compounds for specified indications. The 2022 License Agreement covers the rights to a compound referred to as DA-1241 for treatment of NASH and a compound referred to as DA-1726 for treatment of obesity and NASH. We may also develop DA-1241 for the treatment of T2D. The 2022 License Agreement calls for an upfront payment of $22,000,000, which will be paid in Series A Convertible Preferred Stock of NeuroBo at the public offering price, and milestone payments and royalties. The effectiveness of the 2022 License Agreement is contingent upon our raising a total of at least $15 million in a Qualified Financing upon which Dong-A will fund an additional $15 million, which is being sold in the private offering.

DA-1241 is a novel G-Protein-Coupled Receptor 119 (GPR119) agonist with development optionality as a standalone and/or combination therapy for both NASH and T2D. Agonism of GPR119 in the gut promotes the release of key gut peptides GLP-1, GIP, and PYY. These peptides play a further role in glucose metabolism, lipid metabolism and weight loss. DA-1241 has beneficial effects on glucose, lipid profile and liver inflammation, supported by potential efficacy demonstrated during in vivo preclinical studies. The therapeutic potential of DA-1241 has been demonstrated in multiple pre-clinical animal models of NASH and T2D where DA-1241 reduced hepatic steatosis, inflammation, fibrosis, and improved glucose control. Furthermore, in Phase 1a and 1b human trials DA-1241 was well tolerated in both healthy volunteers and those with T2D. If this offering is consummated and the 2022 License Agreement is effective, then we intend to initiate a Phase 2a study with the goal of establishing efficacy of DA-1241 in the treatment of NASH.

DA-1726 is a novel oxyntomodulin (“OXM”) analogue functioning as a GLP1R/GCGR dual agonist for the treatment of NASH and obesity, that is to be administered once weekly subcutaneously. DA-1726 as a dual agonist of GLP-1 receptors (“GLP1R”) and glucagon receptors (“GCGR”), leading to weight loss through reduced appetite and increased energy expenditure. DA-1726 has a well understood mechanism and, in preclinical mice models, resulted in improved weight loss, as well as reduced hepatic steatosis, inflammation, and fibrosis compared to semaglutide and cotadutide (another OXM analogue).

Each of DA-1241 and DA-1726 is currently being developed for the treatment of NASH. NASH is a severe form of nonalcoholic fatty liver disease (“NAFLD”), characterized by inflammation and fibrosis in the liver that can progress to cirrhosis, liver failure, hepatocellular carcinoma (“HCC”) and death. There are currently no approved products for the treatment of NASH.

The prevalence of NAFLD, which affects approximately 25% of the global population, and NASH, which develops in approximately 12% to 14% of NAFLD patients, is growing and is driven primarily by the worldwide obesity epidemic. The critical pathophysiologic mechanisms underlying the development and progression of NASH include reduced ability to handle lipids, increased insulin resistance, injury to hepatocytes and liver fibrosis in response to hepatocyte injury. Patients with NASH frequently have other significant metabolic co-morbidities such as obesity, hyperglycemia, dyslipidemia and systemic hypertension (a constellation of which is commonly referred to as metabolic syndrome) and these further contribute to the risk of cardiovascular disease. The number of NASH cases in the United States is projected to expand

from 16.5 million in 2015 to 27 million in 2030, with similar prevalence growth expected in Europe. Diet and exercise are currently the standard of care for NAFLD and NASH, but adherence to this treatment regimen is poor and there remains a high unmet need in the treatment of NASH.

We have other product candidates focused on the developing novel pharmaceuticals to treat COVID-19 and neurodegenerative disorders.

- *ANA001* is a proprietary oral niclosamide formulation and is being developed as a treatment for patients with moderate COVID-19. Niclosamide is a potential oral antiviral and anti-inflammatory agent with a long history of use and well-understood safety in humans. Enrollment in the Phase 2 clinical trial of ANA001 for treatment of moderate COVID-19 in hospitalized patients was closed in July 2022 and the clinical trial moved to the data analysis phase.
- *NB-01* has the potential to treat painful diabetic neuropathy (PDN) as a first-line pain management therapy for PDN.
- *NB-02* has the potential to treat the symptoms of cognitive impairment and modify the progression of neurodegenerative diseases associated with the misfunction of a protein called tau, and with amyloid beta plaque deposition.
- *Gemcabene* is currently being assessed for various indications including COVID-19 in combination with ANA001.

Further information regarding these product candidates is set forth in our Annual Report on Form 10-K for the year ended December 31, 2021, filed on March 31, 2022, and our Quarterly Report on Form 10-Q for the quarter ended June 30, 2022, filed on August 12, 2022, which information is incorporated herein by reference.

Strategy

NeuroBo's goal is to discover, develop and commercialize novel therapeutics for the treatment of cardiovascular and metabolic diseases. The key elements of NeuroBo's business strategy to achieve this goal include:

- Advance DA-1241 through the FDA regulatory process to obtain approval for the treatment of NASH and T2D initially by starting a Phase 2a trial to establish an early signal of efficacy in NASH and T2D.
- Explore various avenues to advance DA-1241 to FDA approval, including, if the Phase 2 clinical trials are successful, securing a pharmaceutical partner to advance work on a global Phase 3 program.
- Advance DA-1726 through IND and initiation of human clinical trials with the initial goal of have DA-1726 be IND-ready by the first quarter of 2023.
- Pursue ANA001 as a treatment and/or prophylaxis for COVID-19.
- Explore alternatives for the future of NB-01, including assessing whether to pursue NB-01 as an orphan drug and/or as a nutraceutical product.
- Explore out licensing opportunities for NB-02.
- Explore additional acute therapeutic indications for gemcabene that may strengthen our pipeline of assets.
- Extend the pipeline of drugs as NeuroBo continues to build and develop its product portfolio by opportunistically pursue strategic partnerships.
- Continue to hire highly qualified management and personnel in advancing drug development, achieving marketing approval, and implementing its corporate growth strategy.

Market Opportunity

NASH

Non-alcoholic steatohepatitis (NASH) is a severe form of NAFLD, characterized by inflammation and fibrosis in the liver that can progress to cirrhosis, liver failure, hepatocellular carcinoma ("HCC") and death. There are currently no approved products for the treatment of NASH.

The prevalence of NAFLD, which affects approximately 25% of the global population, and NASH, which develops in approximately 20% to 25% of NAFLD patients, is growing and is driven primarily by the worldwide obesity epidemic. The critical pathophysiologic mechanisms underlying the development and progression of NASH include reduced ability to handle lipids, increased insulin resistance, injury to hepatocytes and liver fibrosis in response to hepatocyte injury. Patients with NASH frequently have other significant metabolic co-morbidities such as obesity, hyperglycemia, dyslipidemia and systemic hypertension (a constellation of which is commonly referred to as metabolic syndrome) and these further contribute to the risk of cardiovascular disease. A report from the Center for Disease Analysis indicates, the number of NAFLD cases in the United States is projected to expand from 83.1 million in 2015 to 100.9 million in 2030 and NASH cases from 16.5 million to 27 million in that period. A similar prevalence growth is expected in Europe. Diet and exercise are currently the standard of care for NAFLD and NASH, but adherence to this treatment regimen is poor and there remains a high unmet need in the treatment of NASH.

Obesity

Obesity is a major health crisis in the U.S. and has become a worldwide epidemic. According to the World Health Organization ("WHO"), there are as many as 1.9 billion people worldwide considered to be overweight, 650 million of whom are estimated to be obese. The National Center for Health Statistics published data from the National Health and Nutrition Examination Survey (NHANES) indicating from 1999 – 2018 the prevalence of obesity in U.S. adults has increased from 30.5% to 42.4%, with another 30.7% considered overweight and 9.2% being classified as severely obese. The Centers for Disease Control and Prevention ("CDC") and the WHO consider excessive body weight to be associated with a host of complications, including diabetes, hypertension, high cholesterol, coronary artery disease, cancer, liver and pulmonary disease which are often precipitated or exacerbated by the obese condition.

According to the CDC, in 2019 the estimated annual medical costs of obesity in the U.S. was $173 billion. Despite the vast number of patients affected by this disease, until recently the pharmaceutical market to treat obesity has been relatively small with few effective therapies available. Current therapies are poorly effective and or poorly tolerated by patients. While some patients are candidates for gastric bypass or reduction surgery, the potential complications, including mortality, and the substantial costs and recovery time make it a realistic option only for those patients characterized as morbidly obese. A measure of the urgency of this medical need in the U.S. is the growing success of semaglutide (WEGOVY®), a drug recently approved for the treatment of chronic weight management in adults with obesity. With the success of semaglutide, researchers have developed second generation drugs that not only interact with the same receptor as semaglutide (GLP-1) but other targets as well that affect weight and metabolism. These second generation drugs have the potential benefit of maintaining or increasing the weight loss targets of semaglutide, but also to decrease the side effects associated with treatment.

Type 2 Diabetes (T2D)

As with obesity, the incidence of T2D is growing at an alarming rate. In the last 20 years, the number of adults diagnosed with diabetes has more than doubled as the American population has aged and become more overweight or obese. Current data (2021) from the International Diabetes Federation indicate 537 million adults (20-79 years) are living with diabetes with this number predicted to rise to 643 million by 2030. An aging population, poor dietary habits and increasing obesity rates are all driving the increasing incidence of T2D. The association between NAFLD/NASH, obesity, and diabetes is striking. Approximately 70% of those with T2D have NAFLD (30% to 40% classified as NASH) and in obesity the prevalence of NASH is between 25% and 30%. While obesity does not directly cause the hyperglycemic condition associated with diabetes, the correlation is striking as CDC statistics indicate that 90% of type 2 diabetics are overweight or obese.

In the U.S., the CDC reports that the total prevalence of diabetes in 2022 was estimated to be 37.3 million people, or 11.3% of the population, with another 96 million considered to have prediabetes at risk to develop T2D. T2D accounts for up to 95% of all diagnosed cases of diabetes. T2D is frequently not diagnosed until complications appear, and approximately one-quarter of all people with diabetes are undiagnosed. Type 2 diabetes is a complicated metabolic disorder that involves multiple factors including loss of sensitivity to the effects of insulin, a decrease in the body's ability to produce insulin and the overproduction of

glucose by the liver. Uncontrolled diabetes results in abnormally high blood sugar levels, a condition known as hyperglycemia. The long-term adverse effects of hyperglycemia include blindness and loss of kidney function as well as nerve damage, loss of sensation and poor circulation in the extremities, each of which may eventually necessitate amputation. According to the CDC and WHO, diabetes is currently the seventh leading cause of death by disease and is a leading cause of kidney disease, heart attacks and lower limb amputations and blindness.

Product Candidates

New Product Candidates

DA-1241

DA-1241 is a new drug candidate with therapeutic potential for NASH and T2D that can be orally administered once a day. Two phase 1 clinical trials for the treatment of T2D have been completed in the United States.

DA-1241 is a novel chemical drug candidate selectively activating G protein-coupled receptor 119 (GPR119) which has shown consistent target-related mechanisms and glucose-lowering effects from nonclinical studies to a Phase 1b exploratory clinical trials in patients with T2D in the US. GPR119 is known to be a regulator of both blood glucose and lipid levels. Non-clinical studies suggest DA-1241 selectively activates GPR119, stimulates the secretion of insulin and incretin hormones such as glucagon-like peptide-1 (GLP-1), and thereby reduces plasma glucose levels without hypoglycemia risk and lowers plasma lipids levels of both triglycerides and cholesterol. Preclinical tests have suggested these therapeutic effects are augmented when co-treated with other oral anti-diabetic agents such as metformin, SGLT2 inhibitors, and DPP4 inhibitors which are widely used for treating patients with T2D in the clinic. Moreover, impaired insulin action and lipid metabolism which are frequently observed in T2D patients are highly associated with the pathogenesis of steatosis and inflammation in NASH. Extensive non-clinical studies have shown DA-1241 has therapeutic potential for the reduction in hepatic steatosis, inflammation, fibrosis, and improved glucose control regardless of body weight reduction.

DA-1726

DA-1726 is a long-acting, novel peptide drug candidate in preclinical development with therapeutic potential for obesity and NASH.

DA-1726 is a dual agonist that activates both GLP-1 receptors (“GLP-1R”) and glucagon receptors (“GCGR”). Activation of GLP-1R or GCGR contributes to central anorexic effect (appetite suppression) and activation of GCGR peripherally enhances basal metabolic rate. Accordingly, non-clinical studies have shown that DA-1726 not only reduces food intake but also increases energy expenditure even at the basal resting state, leading to persistent weight loss in diet-induced obese mice and rats. DA-1726 directly lowers blood glucose and lipid levels in addition to the accompanying metabolic improvement by weight loss. Weight reduction is closely related to the alleviation of fatty liver.. Having stabilized the fragile peptide through several unique modifications, DA-1726 is predicted to be available as a once-weekly regimen to humans.

Current Product Candidates

ANA001

ANA001 is a proprietary oral niclosamide formulation and is being developed as a treatment for patients with moderate COVID-19. Niclosamide is a potential oral antiviral and anti-inflammatory agent with a long history of use and well-understood safety in humans. Enrollment in the Phase 2 clinical trial of ANA001 for treatment of moderate COVID-19 in hospitalized patients was closed in July 2022 and the clinical trial moved to the data analysis phase. Our determination to close enrollment related in part to the challenges and delays caused by a decreased number of eligible subjects and a changing COVID-19 environment, which was due to a number of factors including, the high prevalence of COVID-19 immunity (through vaccination or previous infection), availability of alternate treatments, and decreased COVID-19 hospitalizations which in turn greatly limits the number of eligible subjects needed for the clinical trial. At

the time of closure 48 participants had been enrolled which is statistically sufficient for us to analyze the clinical trial data and achieve the objective of the study, which was determining the safety and tolerability of ANA001 for treatment of COVID-19. Following an analysis of the clinical trial data, which is expected in the fourth quarter of 2022, we will be able to begin discussions with the Food and Drug Administration regarding the next steps in the clinical development of ANA001 for treatment of COVID-19. We may determine to outlicense this product candidate in the future.

NB-01

NB-01 is a novel therapeutic that has been studied in a 128-subject Phase 2 clinical trial conducted in the United States.

In extensive preclinical studies performed in mice and rats, NB-01 has shown multiple mechanistic and therapeutic effects. NB-01 addresses a range of mechanisms that contribute to neuropathic pain and nerve degeneration in diabetic and other peripheral neuropathies. These include a decrease in key inflammatory markers, restoration of nerve growth factor (NGF) to normal levels, and reduction of advanced glycation end products (AGEs). Inflammation is a central factor in pain generation and other peripheral neurodegenerative diseases. NB-01 reduces levels of TNF-α and IL-6, both of which are markers of inflammation. NB-01 also reduces AGEs, which are implicated in diabetes-related complications. AGE inhibitors have been clinically tested as potential treatments for these complications. NB-01 also restores the neurotrophin NGF, which is involved in nerve growth, maintenance and repair.

We have determined to cease development of NB-01 on the prior regulatory pathway and not to advance to Phase 3 clinical trials. We are evaluating alternative development pathways such as orphan drug or nutraceutical (non-pharmaceutical) product. We may determine to outlicense this product candidate in the future.

NB-02

NB-02 is a product candidate for the symptomatic and disease modifying treatment of neurodegenerative diseases, including Alzheimer's disease and tauopathies. In preclinical studies, NeuroBo has observed the mechanisms of action of NB-02 to include inhibition of tau phosphorylation, acetylcholinesterase (AChE) inhibition, inhibition of Aβ toxicity and amyloid plaque formation, and anti-inflammatory effects.

Specifically, in both *in vitro* and *in vivo* models, NB-02 has demonstrated inhibition of AChE, as is the case with three of the current drugs on the market to treat the symptoms of Alzheimer's disease. It has also demonstrated inhibition of tau phosporylation and of amyloid plaque formation, both mechanisms believed to contribute to the progression of neurodegenerative diseases.

In order to preserve operating capital, we have postponed continued work on the Investigation New Drug application to the FDA for NB-02 and the first human clinical trials for NB-02 until global health and macroeconomic conditions improve. We are also considering engaging with a strategic partner with respect to further development of NB-02. We may determine to outlicense this product candidate in the future.

Gemcabene

Gemcabene is currently being assessed as for additional indications including COVID-19 in combination with ANA001. Gemcabene was previously being developed for the treatment of dyslipidemia, a serious medical condition that increases the risk of life-threatening cardiovascular disease, and was focused on orphan indications such as homozygous familial hypercholesterolemia (HoFH), as well as severe hypertriglyceridemia (SHTG). We may determine to outlicense this product candidate in the future.

New Development Programs

DA-1241: Treatment of T2D and NASH

Background

Type 2 diabetes (T2D), previously referred to as "noninsulin-dependent diabetes" or "adult-onset diabetes," accounts for 95% of all diabetes worldwide. This form encompasses individuals who have relative

insulin deficiency and have peripheral insulin resistance. Based on CDC data, the U.S. population with diabetes is estimated to be 37.3 million in 2022, which accounts for 11.3% of the population. Approximately one-quarter of these people are undiagnosed. Accordingly, GlobalData Plc estimated global anti-diabetic drug sales to be $48.1 billion in nine major markets in 2019 and projected that the global antidiabetic market will continue to grow to $91.9 billion by 2029 at a compound annual growth rate (CAGR) of 6.7%, with the US market accounting for 58% of the global market due to high drug prices.

Patients with T2D have an increased prevalence of lipid abnormalities, contributing to their high risk of atherosclerotic cardiovascular diseases (ASCVD). According to the CDC, the prevalence of high cholesterol (non-HDL ≥130 mg/dL) among patients with T2D is 44.3%. ADA recommends the use of moderate-intensity statin therapy in addition to lifestyle therapy for patients with diabetes aged 40 - 75 years regardless of ASCVD.

Despite several classes of anti-diabetic pharmacotherapy, there remains an unmet need for additional pre-insulin options. Metformin remains an anchor therapy, but the use of sulfonylureas ("SUs"), thiazolidinediones ("TZDs"), and DPP4 inhibitors continues to decline. SUs and TZDs are now only prescribed for patients with major affordability issues. DPP4 inhibitors have ceded share to the sodium-glucose cotransporter 2 ("SGLT2") inhibitors and GLP-1 classes, because of lower A1c and weight loss efficacy, and the lack of compelling outcomes data. SGLT2 inhibitors and GLP-1s have shown efficacy by providing "glucose plus" effects (strong A1c, weight, and cardiovascular benefits) and cardiovascular and renal outcomes data in multiple clinical trials. Based on the third party's report, an estimated 10% to 15% of T2D patients are still at risk of progressing to insulin. These patients are contraindicated for or unable to tolerate SGLT2 inhibitors and GLP-1 therapies. There is a further unmet need for T2D/dyslipidemia comorbid patients, as 5% of these patients are intolerant to statins, requiring alternative therapies to control their lipid levels. PCSK9 inhibitors are the existing alternative for these patients today, but patients struggle with the injection route of administration and high cost. Beyond oral hypoglycemic agents with a novel mechanism, there is an unmet need for an effective drug therapy to improve lipid metabolism in diabetic patients.

DA-1241 Preclinical Development

Extensive preclinical pharmacology, Absorption, Distribution, Metabolism and Excretion ("ADME"), safety and toxicology studies have been completed. The pharmacokinetic characteristics of DA-1241 were identified through the full set of preclinical ADME package. The safety and toxicology studies completed are: (i) central nervous system (CNS), cardiovascular (CV), and respiratory safety in rats and dogs; (ii) a single-dose, 4-week, 13-week and 26-week oral toxicity studies in rats; (iii) 4-week, 13-week and 39-week oral toxicity studies in dogs; (iv) pre-natal development studies in rats and rabbits; and (v) genotoxicity tests of in vitro bacterial reverse mutation, chromosome aberration, and in vivo micronucleus.

Comprehensive non-clinical studies demonstrated DA-1241 distinctively activates GPR119 across species, stimulates the secretion of insulin and GLP-1, a gut peptide hormone with various metabolic benefits, from the pancreas and intestine, respectively, and thereby reduces postprandial glucose and lipid levels after single administration to mice. The postprandial hypoglycemic response by DA-1241 observed in wild type mice disappeared in GPR119-deficient mice, demonstrating target engagement. Notably, DA-1241 treatment did not cause hypoglycemia < 50 mg/dl in overnight fasted mice.

In diabetic mice with hypertriglyceridemia, chronic treatment with DA-1241 lowered fasting and non-fasting blood glucose levels, in which DA-1241 prevented the pancreatic beta cell loss and preserved pancreatic function. Moreover, DA-1241 treatment decreased hepatic lipid accumulation in addition to plasma triglycerides levels at the same dose levels. When a DPP4 inhibitor was cotreated with DA-1241 to prolong the biological half-life of plasma GLP-1, plasma concentrations of active GLP-1 increased more than those due to degradation blockade with DPP4 inhibitors, and thereby potentiation of GLP-1 action further improved glucose and lipid metabolism compared to each treatment alone.

In a non-diabetic mouse model with pre-established dyslipidemia, DA-1241 completely reduced plasma and hepatic triglycerides to normal control levels and also decreased plasma LDL-cholesterol, independent of glycemic control. Comprehensive mechanism studies have shown that the lipid-lowering effects of DA-1241 are due in part to inhibiting lipid synthesis in the liver and interfering with dietary lipid transport in the intestine.

With regard to the NASH indication, DA-1241 has shown to improve fatty liver in various types of mouse models with metabolic diseases. Thereafter, therapeutic potential for treating NASH has been evaluated in several NASH mice models with different pathophysiology. Among them, the STAM-NASH mouse model exhibits mild fatty liver and moderate liver inflammation/fibrosis and is rapidly chemically induced. DA-1241 improved hepatic inflammation and fibrosis, showing a decrease in NAFLD activity score (NAS) and relative fibrotic area of the liver compared to the vehicle-treated control. Diet-induced obesity (DIO)-NASH mice are chronically induced through a Western diet and are characterized by marked fatty liver and mild to moderate hepatic inflammation/fibrosis. In DIO-NASH mice, DA-1241 improved hepatic steatosis, inflammation, and fibrosis assessed by histological and biochemical methods regardless of body weight reduction. Of note, DA-1241 improved systemic inflammatory status with reduced plasma inflammatory cytokines (TNFα, IL6) and chemokines (CCL2, CXCL1, CXCL2, CXCL10) contributing to tissue damage. Therefore, DA-1241 treatment reduced the levels of plasma liver enzymes (ALT, AST), which were increased due to liver tissue damage in DIO-NASH mice. In mice with metabolic diseases, the effects of DA-1241 on the NASH phenotypes (steatosis, inflammation, and fibrosis in the liver) are enhanced by the co-treatment with a DPP4 inhibitor compared to each treatment alone due to potentiated GLP-1 actions.

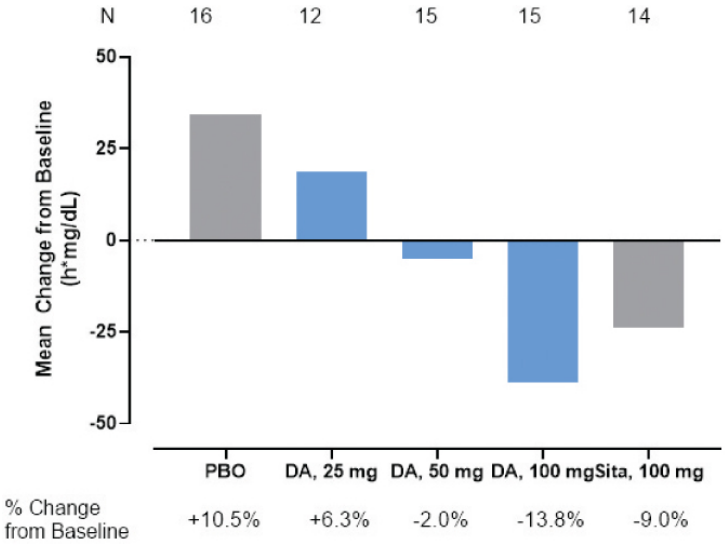
Result of Phase 1 U.S. Clinical Trial for DA-1241

Completed Phase 1a and 1b trials in the US healthy subjects. The first-in-humans Phase 1a study, which was a double-blind, placebo controlled, single ascending dose ("SAD"), single-center study in 60 healthy male volunteers to evaluate the safety, tolerability, pharmacokinetics ("PK"), pharmacodynamics ("PD"), and interaction effect with metformin. Each cohort was given a single oral dose of 12.5, 25, 50, 100, 200, and 400 mg DA-1241 or placebo tablets. The dose level of DA-1241 for the interaction effect (IE) assessment of metformin on the PK of DA-1241 was 100 mg. Therefore, the IE cohort had 2 separate treatment periods. Subjects in the IE cohort received DA-1241 100 mg or placebo alone in Treatment Period 1, and DA-1241 100 mg or placebo with 500 mg metformin (IR formulation) in Treatment Period 2. DA-1241 was well tolerated over a dose range of 12.5 mg to 400 mg. There was no effect of concomitant administration of metformin on DA-1241 PK parameters.

In Phase 1b, Part 1 was a double-blind placebo-controlled, multiple-ascending dose (MAD), single-center study of DA-1241 in healthy subjects. Overall, 24 male subjects were blinded and randomized to receive DA-1241: 50, 100 or 200 mg or placebo, as single daily oral doses for 28 days. Safety data reviews and dose escalation decisions between cohorts took place after all subjects of an ongoing cohort had completed procedures through day 14. All doses tested were well tolerated. There were no Serious Adverse Events (SAEs) and no discontinuations due to Adverse Events (AEs).

Completed Phase 1b trial in the US T2D patients. The Phase 1b study was designed as a placebo and active comparator (sitagliptin 100 mg)-controlled, double-blind, randomized, multi-center study with an objective of evaluating whether DA-1241 delivers improved glucose-lowering efficacy in 83 diabetic patients. Patients were treated with placebo, sitagliptin 100 mg or DA-1241 25 mg, 50 mg and 100 mg once daily for 8 weeks, in combination with stable doses of metformin (13~19 patients/group). In the mixed meal tolerance test to evaluate the ability to reduce postprandial glucose through GPR119 activation, the incremental $AUE_{0\text{-}4h}$ of plasma glucose ("iAUE") upon nutrient ingestion was measured and compared. Eight-week treatment of DA-1241 25 mg, 50 mg and 100 mg showed the changes of +6.3%, -2.0% and -13.8% in iAUE levels from the baseline and DA-1241 100 mg showed similar blood glucose improvement with that of sitagliptin 100 mg (-9.0%), and it outperformed placebo (+10.5%).

Exploratory P1b Study in the U.S.: Glucose-Lowering Effects

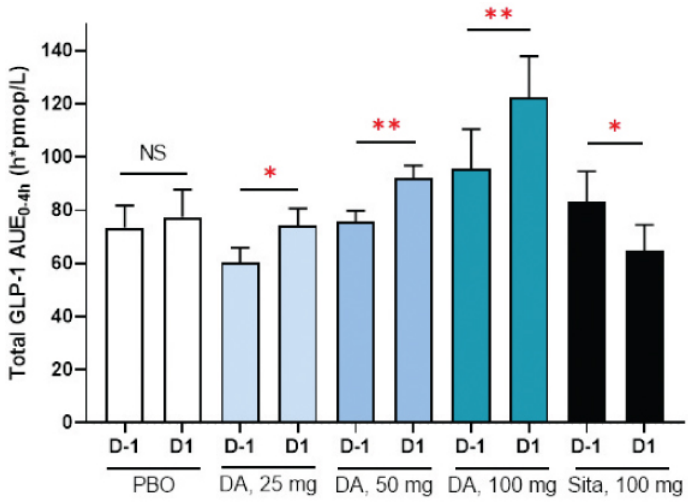


Mean Change in Postprandial Glucose Excursion at Week 8

In the parameters of glycemic variability measured with a Continuous Glucose Monitoring (CGM) system and fasting plasma glucose, the glucose-lowering efficacy by DA-1241 was similar to that of sitagliptin. Moreover, the time-in-range, the percentage of how long blood glucose value is within 70~180mg/dL, was increased by mitigating the hypoglycemia risk and duration of hyperglycemia whereas such time-in-range was reduced in the placebo group.

Single administration or 8-week repeated administration of DA-1241 increased secretion of gut peptide hormones such as glucagon-like peptide-1 (GLP-1), glucose-dependent insulinotropic polypeptide (GIP) and peptide YY (PYY) in gastrointestinal tracts after taking meals. The amount of secretion of such hormones increased in proportion to the extent of exposure to DA-1241.

Exploratory P1b Study in the U.S.: Target-related Biomarker Change



Total GLP-1 Secretion during Mixed Meal Tolerance Test

* & ** P<0.05 & P<0.01 versus corresponding baseline values; DA, DA-1241; Sita, Sitagliptin

In terms of safety, no clinically significant adverse events were observed following the 8-week treatment, confirming the tolerability of DA-1241, and the bodyweight showed a tendency to decrease.

DA-1241 Phase 2 Trial Design. If this offering is consummated and the 2022 License Agreement becomes effective, we currently intend to perform three Phase 2 clinical trials in the United States;

Combined NASH/T2D Phase 2a: One clinical trial is expected to be a 24-week, double-blinded, randomized, placebo-controlled clinical trial to establish safety and an early signal of efficacy in NASH and T2D as a next-generation competitive oral agent. Approximately 100 adult patients with presumed NASH based on imaging/non-invasive criteria with or without T2D will be randomized. The planned Phase 2a treatment groups will be various doses of DA-1241 or matching placebo, as an oral once-daily regimen. The primary pharmacodynamic endpoint for the planned study will be the change from baseline to Week 24 in the liver fat reduction assessed by MRI-PDFF. Secondary pharmacodynamic parameters will analyze hemoglobin A1c ("HbA1c") as well as other surrogate markers for T2D.

T2D Phase 2b: One Phase 2b clinical trial is a dose range finding study to establish efficacy expectations similar to Phase 3 for the treatment of T2D. This planned study is a 12-week, double-blinded, randomized, placebo-controlled clinical trial in approximately 300 subjects with T2D on oral antidiabetic drugs. There are four treatment groups and the three dose levels for the planned treatment groups will be determined based on the results of Phase 2a study. The primary endpoint is the change from baseline to Week 12 in HbA1c and various glycemic outcomes such as continuous glucose monitoring for 7 days in addition to fed and fasting lipid levels will be determined. The Phase 2b trial is planned to be conducted internationally.

NASH Phase 2b: The other Phase 2b study is a dose range finding trial to establish clinical efficacy in histological improvement for NASH treatment similar to Phase 3. This planned Phase 2b trial is 52-week, double-blinded, randomized, placebo-controlled clinical study in approximately 400 biopsy confirmed NASH patients with F2-F3 fibrosis. There are four treatment groups and the three dose levels for the planned treatment groups will be determined based on the results of Phase 2a study. This study will be conducted as a multi-center internal study. The primary endpoint is the proportion of patients whose NAFLD activity score (NAS) or fibrosis score (or fibrotic area) are improved by one or more stage from the baseline to Week 24 and Week 52. Various plasma biomarkers that were improved in the preclinical studies performed in mice will also be evaluated to assess changes in systemic inflammatory (TNFα, CCL2, CXCLs) and fibrotic (TIMP-2, type IV collagen) status.

DA-1726: Treatment of Obesity and NASH

Background

Obesity is a disease caused by abnormal or excessive fat accumulation due to an imbalance in energy intake and consumption over a long period of time. According to the World Health Organization (WHO), more than 1.9 billon people worldwide are overweight with 650 million considered to be obese. The comorbidities of obesity include type 2 diabetes, cardiovascular disease, hypertension, NASH, etc., and the risk of these diseases is higher in obese people than in non-obese people.

The treatment of obesity can be divided into three mechanisms: (i) appetite control, (ii) absorption inhibition, and (iii) increase of energy expenditure. Currently, there are a total of five approved anti-obesity medications on the market, of which liragluitde (SAXENDA®), semaglutide (WEGOVY®), phentermine/ topiramate (QSYMIA®), and naltrexone/bupropion (CONTRAVE®) have an appetite suppression mechanism. Another medication, orlistat (XENICAL®/ ALLI®), controls body weight by inhibiting fat absorption. However, there is still an unmet need in the market as there are no agents with a mechanism to reduce body weight by increasing energy expenditure in peripheral tissue.

Nonalcoholic fatty liver disease refers to a spectrum of liver damage that includes a wide range of liver diseases, from steatosis to cirrhosis. NAFLD is one of the most common diseases accompanying obesity and T2D, and obesity and T2D are known to exacerbate the progression of NAFLD to HCC. Although there is still no therapeutic agent on the market, clinical results of treatment improvement by GLP-1 and oxyntomodulin analogues have been reported and are in the spotlight.

Oxyntomodulin is a gut hormone released from intestinal L-cells after meal ingestion and represents dual agonism of the GLP-1 receptor and glucagon receptor. It increases energy expenditure through glucagon receptors and increases appetite suppression and insulin secretion through GLP-1 receptor activation, ultimately inducing weight loss and glycemic control. The furthest stage of development of any oxyntomodulin analogue is Phase 2, with five drugs (cotadutide, efinopegdutide, BI-456906, mazdutide, and pemvidutide) being prepared or in progress for Phase 2 trials for the treatment of obesity, NASH, or T2D.

DA-1726 Preclinical Development

Animal toxicity studies of DA-1726 for the Phase 1 clinical trial have been completed and the results are in various stages of analysis and reporting. The toxicity studies included safety pharmacology studies and general toxicity studies.

The mode of action and pharmacological effects of DA-1726 were evaluated in various disease models. In high-fat diet-induced obese mice, DA-1726 showed more body weight loss and increasing energy expenditure than a pair-fed group. In comparison with GLP-1 analogue, DA-1726 represented superior body weight loss compared to semaglutide in obese mice. At the end of the study, DA-1726 significantly increased the expression of thermogenic genes (*Ucp-1* and *Ppargc1a*) in epididymal fat and increased white adipose tissue browning was histologically confirmed. In addition, DA-1726 inhibited adipocyte differentiation *in vitro*. Taken together, it suggests the GCGR action of DA-1726 contributes to reduced adiposity by enhancing fat burning and inhibiting adipogenesis. DA-1726 effectively reduced postprandial glucose excursion in acute oral glucose tolerance test in normal mice. Notably, DA-1726 showed similar glycemic control and excellent weight loss to semaglutide in obese mice with hyperglycemia. Simultaneously, DA-1726 enhanced insulin sensitivity by significantly reducing fasting plasma insulin and glucose levels. Meanwhile, DA-1726 showed no hypoglycemia risk in overnight fasted normal mice, unlike semaglutide.

In obese NASH mice, DA-1726 significantly reduced plasma clinical chemistry parameters (ALT, AST, ALP, T-BIL, glucose, and cholesterol) and hepatic fat accumulation. In histopathological analysis of steatosis, lobular inflammation, and ballooning in the liver, DA-1726 showed an excellent improvement effect compared to semaglutide. Improvement of liver fibrosis was also observed with DA-1726. In the liver tissue, the expression of inflammation (*Tnfa*, *Il-1β*, and *Ccl2*) and fibrosis (*Acta2*, *Timp1*, *Col1a1*, *Col3a1*, and *Mmp9*) related genes were significantly decreased. Taken together, the findings from the pre-clinical trials suggest DA-1726 has therapeutic potential for NASH in addition to obesity.

DA-1726 Phase 1 Trial Design: The first-in-human Phase 1 studies are being planned to establish safety, tolerability and pharmacokinetics of DA-1726. The Phase 1 program is to consist of a single ascending dose (SAD) study and multiple ascending dose (MAD) study enrolling approximately 100 patients (a mix of healthy volunteers and otherwise healthy obesity combined). Doses to be applied in the planned clinical trials will be determined based on the predicted human effective dose assessed by preclinical ADME and repeated toxicity studies at the end of 2022. For the MAD trial under the same IND, DA-1726 will be injected subcutaneously once weekly for 12 weeks in obese patients to provide an added clinical signal in obesity.

DA-1726 Phase 2a Trial Design: A combined Phase 2a clinical trial in the United States is being planned to follow the completion of the Phase 1 clinical trial. The Phase 2a clinical trial is expected to explore a proof-of-concept at the highest tolerated dose to assess the effects of DA-1726 on weight loss as a primary endpoint and on liver fat reduction for a secondary endpoint in approximately 120 obese subjects, including a subset of subjects with NAFLD diagnosed by a MRI-PDFF image method. This study is a double-blind, placebo-controlled, randomized, multi-center trial and DA-1726 will be injected subcutaneously once weekly for 6 months at the highest tolerate dose from Phase 1. The primary endpoint for the planned study will be the change from baseline to Week 2 in body weight. As the secondary pharmacodynamic parameter, the liver fat reduction rate will be assessed by MRI-PDFF and a subgroup analysis will be performed.

License Agreement

On September 14, 2022, we entered into the 2022 License Agreement with Dong-A pursuant to which, subject to the conditions set forth therein, we would receive an exclusive license (other than in the Republic

of Korea) to two proprietary compounds for specified indications. The 2022 License Agreement covers the rights to DA-1241 for treatment of NASH and DA-1726 for treatment of obesity and NASH. We may also develop DA-1241 for the treatment of T2D. The effectiveness of the 2022 License Agreement is contingent upon our closing the Qualified Financing.

Under the terms of the 2022 License Agreement, Dong-A will (i) receive an upfront payment of $22,000,000, which will be paid in shares of Series A Convertible Preferred Stock under the terms of the Securities Purchase Agreement, which will be convertible into common stock upon Stockholder Approval; (ii) be eligible to receive single digit royalties on net sales received by us from the commercial sale of products covering DA-1241 or DA-1726; (iii) be eligible to receive commercial-based milestone payments, payable in cash or our common stock dependent upon the achievement of specific commercial developments and (iv) be eligible to receive regulatory milestone payments of up to $178 million for DA-1726 and $138 million for DA-1241, payable in cash or our common stock, dependent upon the achievement of specific regulatory developments.

Our obligation to pay royalties to Dong-A under the 2022 License Agreement continues on a product-by-product and country-by country basis until the later of (i) the fifth anniversary of the first commercial sale of such product in such country, (ii) the expiration or termination of the last valid patent claim that covers a product in such country and (iii) the loss of regulatory exclusivity for such product in such jurisdiction. Either we or Dong-A may terminate the 2022 License Agreement (i) if the other party is in material breach of the agreement and has not cured or started to cure the breach within 60 days of notice of such breach; provided that if the breach cannot be cured within the 60-day period and the breaching party started to remedy the breach, if such breach is not cured within 90 days of receipt of written notice, (ii) if the other party is subject to a bankruptcy or insolvency event (subject to a 30-day cure period in the case of a petition for bankruptcy) or (iii) if we fail to complete the offering of units by December 31, 2022 (or January 31, 2023 under specified circumstances set forth in the 2022 License Agreement).

Shared Services Agreement

On September 14, 2022, in connection with the 2022 License Agreement, we and Dong-A entered into a shared services agreement (the **"**Shared Services Agreement**"**). The Shared Services Agreement provides that Dong-A will provide technical support, pre-clinical development, and clinical trials support services in exchange for payment to Dong-A as set forth in the Shared Services Agreement. In addition, the Shared Services Agreement provides that Dong-A will manufacture all of our clinical requirements of DA-1241 and DA-1726 under the terms provided in the Shared Services Agreement.

Either party may terminate the Shared Services Agreement for the other party's material breach that is not cured within 30 days of notice. Dong-A may also terminate the Shared Services Agreement in part on a service-by-service or product-by-product basis upon a breach by us which is not cured within 30 days.

Securities Purchase Agreement

On September 14, 2022, in connection with the License Agreement, we entered into the Securities Purchase Agreement. Pursuant to the Securities Purchase Agreement, upon the consummation of the 2022 License Agreement and a Qualified Financing (i) Dong-A will receive the Upfront License Payment and (ii) Dong-A will purchase from us $15 million in value of shares of Series A Convertible Preferred Stock and a number of warrants to purchase shares of our common stock (the "Warrants") substantially equivalent to those issued to investors in respect of the Qualified Financing (the "Dong-A Financing"). The closing of the Dong-A Financing is contingent upon (i) our issuance and sale of common stock or other shares and instruments convertible into or exercisable for shares of our common stock to investors other than Dong-A resulting in gross proceeds of at least $15 million (a "Qualified Financing"), (ii) delivery of lock-up agreements by all of our directors and officers and their affiliates and support agreements from certain stockholders agreeing to vote their shares of common stock in favor of the proposals to obtain the Stockholder Approval, and (iii) satisfaction or waiver of the other conditions described in the Securities Purchase Agreement.

At such time as we obtain the requisite stockholder approval under Nasdaq listing rule 5635 (or its successor) for the issuance of the common stock underlying the Series A Convertible Preferred Stock (the "Stockholder Approval"), such shares of the Series A Convertible Preferred Stock will automatically convert

into shares of our common stock at a conversion price equal to the price per share in the Qualified Financing. The Warrants may not be exercised by Dong-A prior to our receipt of the Stockholder Approval.

Pursuant to the Securities Purchase Agreement, we have agreed to call a special meeting of stockholders not later than 60 days after the closing under the Securities Purchase Agreement to obtain the Stockholder Approval, with respect to the shares of our common stock issuable upon the conversion of the Series A Convertible Preferred Stock and the exercise of the Warrants issued under the Securities Purchase Agreement. We agreed to prepare and file a proxy statement with respect to such special meeting of stockholders within 10 days after the closing under the Securities Purchase Agreement. In the event that we do not obtain the Stockholder Approval at the first stockholder meeting, we are obligated to hold a meeting every four months thereafter.

Registration Rights Agreement

In connection with the Securities Purchase Agreement, on September 14, 2022, we entered into a registration rights agreement with Dong-A and certain other stockholders (the "Registration Rights Agreement"). The Registration Rights Agreement provides Dong-A with demand and piggyback registration rights, including the right to two long-form registration statements. In addition, we agreed to file, within 30 days following the Stockholder Approval, a registration statement to register the shares of common stock issuable upon: (i) the conversion of the Series A Convertible Preferred Stock; (ii) shares of our common stock issuable upon the exercise of the Warrants; and (iii) any other common stock held by the parties to the Registration Rights Agreement (the "Registrable Securities"); and to use commercially reasonable efforts to cause each registration statement to be declared effective under the Securities Act as promptly as possible after the filing thereof, but in any event no later than the 60th day after Stockholder Approval (or in case the Securities and Exchange Commission reviews the registration statement, the 90th date after Stockholder Approval); provided that if we are notified that the registration statement is not being reviewed or is no longer subject to comment, we are required to make the registration statement effective by the fourth trading day after such date. We agreed to use our commercially reasonable efforts to keep such registration statement continuously effective under the Securities Act until the date that all Registrable Securities covered by such registration statement have been sold or are otherwise able to be sold pursuant to Rule 144.

Investor Rights Agreement

On September 14, 2022, we entered into an investor rights agreement with Dong-A (the "Investor Rights Agreement") pursuant to which, following our receipt of the Stockholder Approval, Dong-A will have the right, subject to the terms thereof, to designate for appointment to our board of directors (the "Board") that number of directors commensurate with Dong-A's and its affiliates' beneficial ownership of our common stock, with the number of directors that Dong-A is entitled to designate rounded up to the nearest whole number (the "DA Designees"). Upon obtaining the Stockholder Approval, to the extent necessary to permit the designation of the DA Designees, the size of the Board shall be increased to that number of directors that would permit Dong-A to designate a number of directors to fill the vacancies created thereby that is commensurate with Dong-A's and its affiliates' collective beneficial ownership of the common stock outstanding at such time (taking into account any DA Designees already serving on the Board at such time). The compensation (including equity-based compensation) and rights to indemnity of, and reimbursement of expenses incurred by, the DA Designees that are members of the Board will be the same as those provided to other non-employee directors generally. When evaluating a prospective DA Designee for membership on the Board, the Board and the Nominating and Governance Committee shall apply the same review processes and standards as each of them, respectively, applies to other prospective non-employee directors generally.

In addition, the Investor Rights Agreement provides that Dong-A will be subject to a customary standstill for nine (9) months following our receipt of the Stockholder Approval. Furthermore, for so long as Dong-A has the right to designate any DA Designee to the Board, Dong-A will vote their shares of our common stock in favor of any Company Director (as defined in the Investor Rights Agreement) or any nominee designated by the Nominating and Corporate Governance Committee of the Board and against the removal of any Company Director, in each case, at any meeting of the stockholders of the Company.

Existing Development Programs

Please see the information set forth in *Item 1. Business — Product Candidate*s in our Annual Report on Form 10-K for the year ended December 31, 2021 and in *Management's Discussion and Analysis of Financing Condition and Result of Operations — Current Scientific Activity* in our Quarterly Report on Form 10-Q for the quarter ended June 30, 2022, which is incorporated herein by reference.

Manufacturing

NeuroBo will use third-party manufacturers, including Dong-A in South Korea, to manufacture clinical quantities of DA-1241, DA-1726, ANA001 and NB-01. As NeuroBo advance the product candidates through clinical development and greater quantities are required, we plan to continue to use third parties including Dong-A ST to manufacture the product candidates.

NeuroBo also plan to reply on third parties to manufacture commercial quantities of any products we successfully develop. Among the conditions for FDA approval of a pharmaceutical product is the requirement that the manufacturer's quality control and manufacturing procedures conform to cGMP, which must be followed at all times. The FDA typically inspects manufacturing facilities every two years. In complying with cGMP regulations, pharmaceutical manufacturers must expend resources and time to ensure compliance with product specifications as well as production, record keeping, quality control, reporting and other requirements.

Competition

The pharmaceutical and biotechnology industries are characterized by rapidly advancing technologies, intense competition and a strong emphasis on proprietary products. NeuroBo faces potential competition from many different sources, including major pharmaceutical, specialty pharmaceutical and biotechnology companies, academic institutions, governmental agencies and public and private research institutions. Any product candidates that NeuroBo successfully develops and commercializes will compete with existing therapies and new therapies that may become available in the future.

Some of NeuroBo's competitors may have significantly greater financial resources and expertise in research and development, manufacturing, preclinical testing, conducting clinical trials, obtaining regulatory approvals and marketing approved products than NeuroBo does. Other firms may also compete with NeuroBo in recruiting and retaining qualified scientific and management personnel and establishing clinical trial sites and patient enrollment for clinical trials, as well as in acquiring technologies complementary to, or necessary for, NeuroBo's programs. Mergers and acquisitions in the pharmaceutical, biotechnology and diagnostic industries may result in even more resources being concentrated among a smaller number of NeuroBo's competitors. Smaller or early-stage companies may also prove to be significant competitors with NeuroBo, particularly through collaborative arrangements with large and established companies.

NeuroBo's commercial opportunity could be reduced or eliminated if its competitors develop and commercialize therapeutics that are safer, more effective, have fewer or less severe side effects, are more convenient or are less expensive than any products that NeuroBo may develop. NeuroBo's competitors also may obtain marketing approvals for their products more rapidly than NeuroBo may obtain approval for its products, which could result in its competitors establishing a strong market position before NeuroBo is able to enter the market. In addition, NeuroBo's ability to compete may be affected because in some cases insurers or other third-party payors, including government programs, seek to encourage the use of generic products. This may have the effect of making branded products less attractive, from a cost perspective, to buyers.

DA-1241 and DA-1726-NASH

There are currently no medications approved for the treatment of NASH. However, various therapeutics are used off-label for the treatment of NASH, including vitamin E (an antioxidant), insulin sensitizers (e.g., metformin, pioglitazone), antihyperlipidemic agents (e.g., gemfibrozil), pentoxifylline and ursodeoxycholic acid (UDCA). There are several product candidates in Phase 3 or earlier clinical or preclinical development for the treatment of NASH, including Madrigal Pharmaceuticals, Inc.'s THR beta

agonist (resmetirom), Novo Nordisk's GLP1 agonist (semaglutide), and Inventiva's pan-PPAR agonist (lanifibranor), as well as FXR agonists from Intercept Pharmaceuticals Inc. (obeticholic acid), Novartis AG (tropifexor, nidufexor), Metacrine (MET409, MET642), Terns Pharmaceuticals (TERN-101), Gilead Sciences, Inc. (cilofexor) and Enanta Pharmaceuticals, Inc. (EDP-305).

Additional pharmaceutical and biotechnology companies with product candidates in development for the treatment of NASH include AstraZeneca plc, Altimmune Inc., Boehringer Ingelheim GmbH, Bristol-Myers Squibb Company, Durect Corporation, Galectin Therapeutics Inc., Galmed Pharmaceuticals Ltd., Immuron Ltd., Ionis Pharmaceuticals, Inc., Islet Sciences, Inc., MediciNova, Inc., MiNA Therapeutics, NGM Biopharmaceuticals, Inc., NuSirt Sciences Inc., Pfizer Inc., Viking Therapeutics, Inc. and Zydus Pharmaceuticals (USA) Inc. NASH is a complex disease and we believe that it is unlikely that any one therapeutic option will be optimal for every NASH patient.

DA-1726-Obesity

Due to the growing overweight and obesity epidemic and consumer demand, there are many competitors in the field of obesity treatment. Obesity treatments range from behavioral modification, to drugs and medical devices, and surgery, generally as a last resort. If DA-1726 were approved for obesity, our primary competition in the obesity treatment market would currently be from approved and marketed products, including Wegovy (semaglutide), liragluitde (SAXENDA®), semaglutide (WEGOVY®), phentermine/topiramate (QSYMIA®), naltrexone/bupropion (CONTRAVE®) and orlistat (XENICAL®/ ALLI®). Further competition could arise from products currently in development, including Lilly's GLP-1/GIP receptor dual agonist (tirzepatide), Novo Nordisk's CagriSema (a combination drug of semaglutide and a novel amylin analogue), Zafgen's ZGN-1061 or ZGN-1258 (MetAP2) product candidates and various FGF21 ligands in development. To the extent any of our product candidates are approved for cardio-metabolic indications, particularly obesity, the commercial success of our products will also depend on our ability to demonstrate benefits over the then-prevailing standard of care, including diet and exercise. Finally, morbidly obese patients sometimes undergo the gastric bypass procedure, with salutary effects on the many co-morbid conditions of obesity. Some of these programs have been advanced further in clinical development then our clinical programs or have already received regulatory approval.

DA-1241-T2D

The market for T2D treatments is competitive and if DA-1241 is approved for T2D it will compete with several classes of drugs for T2D that are approved to improve glucose control, including DPP4 inhibitors, SGLT2 inhibitors, and oral GLP1 analogues as the second or third line therapy for pre-insulin status. Further competition could arise from products currently in development, including: aldose reductase inhibitors (Applied Therapeutics); and GPR40 agonists (Hyundai Pharm.); and small molecule GLP-1 receptor agonists (Pfizer). Some of the agents approved to treat T2D are not generic, are oral once-daily pills and are effective in lowering glucose and A1C. In addition, there are several investigational drugs being studied to treat T2D, and if these investigational therapies were approved, they would also compete with DA-1241.

ANA001 — COVID-19

We expect that, if approved, ANA001 will compete with a number of drugs that are being studied for the treatment of symptoms of COVID-19. Currently, multiple treatment options have been approved or given emergency use authorization by the FDA. For hospitalized patients treatments include remdesivir (VEKLURY®), dexamethasone, baricitinib (OLUMIANT®), and tocilizumab (ACTEMRA®). Of these, only remdesivir (VEKLURY®) is considered to be an antiviral. For outpatients at high-risk for progression to severe COVID-19, antiviral treatment options include remdesivir (VEKLURY®), nirmatrelvir/ritonavir (PAXLOVID™) and molnupiravir. In addition, several monoclonal antibody preparations have been approved for use for the outpatient treatment of mild to moderate COVID-19; sotrovimab, bebtelovimab, casirivimab/imdevimab (REGEN-COV®), and bamlanivimab/etesevimab. However, at the time of preparation of this document only bebtelovimab is currently authorized for use within the United States. This is because the widely circulating Omicron strain (B.1.1.529) is resistant to casirivimab/imdevimab (REGEN-COV®), sotrovimab, and bamlanivimab/etesevimab. With regard to pre-exposure prophylaxis for prevention of

COVID-19, the monoclonal antibody combination of tixagevimab/cilgavimab (Evusheld™) is approved for use in certain individuals who are immunocompromised or have contraindications to an approved SARS-CoV-2 vaccine.

While vaccines and the aforementioned approved products do provide a clear benefit, there are still many unmet needs regarding therapeutics for the treatment and prevention of COVID-19. There are no drugs currently approved for the post-exposure prophylaxis of SARS-CoV-2. Changing SARS-CoV-2 variants evade the protective effects of vaccines and monoclonal antibodies. With all direct acting antivirals there is the concern for the emergence of resistance in addition to product specific concerns. Remdesivir (VEKLURY®) must be given in the healthcare setting as it only comes in an intravenous formulation. Molnupiravir is not recommended in children ≤18 years as well as pregnant women and those trying to become pregnant. Nirmatrelvir/ritonavir (PAXLOVID™) has many contraindications secondary to a multitude of drug-drug interactions. There is still a clear clinical need for an oral antiviral that can be given to a wider group of individuals including children.

NB-01 — Painful Diabetic Neuropathy

NeuroBo expects that, if approved, NB-01 will compete with currently approved drug therapies for painful diabetic neuropathy, including pregabalin, duloxetine, and tapentadol HCl. NeuroBo is also aware of a number of therapies that are approved to treat other types of neuropathic pain, and that various therapies are used off-label to treat neuropathic pain. In addition to the marketed therapies, NeuroBo is aware of several companies currently developing therapies for neuropathic pain, including Biogen Inc., Cara Therapeutics, Inc., Daiichi Sankyo Company, Eliem Therapeutics Inc, Immune Pharmaceuticals Inc., Novartis AG, and Xenoport Inc.

NB-02 — Cognitive disease and Tauopathies

NeuroBo expects that, if approved, NB-02 will compete with the currently approved therapies for management of cognitive disease including Alzheimer's disease. In Alzheimer's disease, four drugs are currently approved by the FDA for the treatment of symptoms of Alzheimer's disease, based on acetylcholinesterase (AChE) inhibition (three drugs) and NMDA receptor antagonism (one drug). In addition to the marketed therapies, NeuroBo is aware of several companies currently developing therapies for Alzheimer's disease, including Eisai Co., Ltd., Hoffman-LaRoche, Otsuka Pharmaceuticals, Inc., Novartis AG, Avanir Pharmaceuticals, and Biohaven Pharmaceuticals.

Intellectual Property

Our ability to commercialize its product candidates depends in large part on our ability to obtain and maintain intellectual property protection for our current and potential product candidates, including ANA001, NB-01, NB-02 and gemcabene, and if the 2022 License Agreement is consummated, DA-1241 and DA-1726. NeuroBo's policy is to seek to protect its intellectual property position by, among other methods, filing U.S. and non-U.S. patent applications related to the technology, inventions and improvements that are important to the development and implementation of its business strategy. NeuroBo also relies on trade secrets, know-how and continuing technological innovation to develop and maintain its proprietary position.

We have licensed or acquired rights to patent applications directed to its product candidates, preclinical compounds and related technologies to establish intellectual property positions on these compounds and their uses in disease.

As of September 13, 2022, our intellectual property portfolio for NB-01 included four issued U.S. patents, comprised of two patents directed to composition of matter and two patents directed to use of the composition and two pending applications directed to composition of matter and use of the composition, and 66 granted non-U.S. patents, comprised of composition of matter and use of the composition; these patents and applications are related to our NB-01 clinical programs in peripheral neuropathy and neurological conditions. The issued patents would be expected to expire between 2026 and 2031, excluding any additional term for patent term adjustments or patent term extensions. The patents issuing from these applications, if any, are expected to expire between 2026 and 2031, excluding any additional term for patent term

adjustments or patent term extensions. One patent family including some of the above patents and patent applications for NB-01 is assigned to University-Industry Cooperation Group of Kyung Hee University, and is exclusively licensed from Kyung Hee University to Dong-A and then from Dong-A to NeuroBo pursuant to the terms of the corresponding agreements. The other two patent families including the other above patents and patent applications for NB-01 are assigned to Dong-A ST and exclusively licensed to NeuroBo. The jurisdictions for the non-U.S. patents and applications include: Canada, China, the European Patent Convention (including Austria, Belgium, Finland, France, Germany, Greece, Hungary, Italy, Netherlands, Poland, Portugal, Romania, Spain, Switzerland, Turkey, and the United Kingdom), India, Japan, Mexico, the Republic of Korea, and Russia.

As of September 13, 2022, our intellectual property portfolio for NB-02 included three issued U.S. patents, one patent directed to composition of matter and two patents directed to use of the composition and two pending U.S. patent applications, 82 non-U.S. granted patents, and 4 non-U.S. patent applications, all of which are directed to compositions of matter and use thereof. The issued patents and patents issuing from these applications, if any, are expected to expire around 2035, excluding any additional term for patent term adjustments or patent term extensions. The jurisdictions for the non-U.S. patents and applications include: Brazil, China, the European Patent Convention (including Albania, Austria, Belgium, Bulgaria, Croatia, Cyprus, Czechia, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Monaco, North Macedonia, Netherlands, Norway, Poland, Portugal, Romania, San Marino, Serbia, Slovenia, Slovakia, Spain, Sweden, Switzerland, Turkey, and the United Kingdom), India, Japan, the Republic of Korea, and Russia.

As of September 13, 2022, our intellectual property portfolio relating to gemcabene included six issued U.S. patents, three pending U.S. patent applications, 38 non-U.S. granted patents and 25 non-U.S. patent applications directed to formulations, compositions, methods of use and methods of manufacturing. The Gemcabene intellectual property includes both owned and Pfizer-licensed issued and pending patents in the United States and non-U.S. jurisdictions. The issued patents in the United States and non-U.S. countries have expiration dates between December 2031 and November 2036. The patents in the United States and non-U.S. countries that may be issued from pending applications, if any, are expected to expire between December 2031 and October 2039. The jurisdictions for the non-U.S. countries include: Argentina, Australia, Brazil, Canada, China, Europe, Hong Kong, India, Israel, Japan, Mexico, New Zealand, Philippines, Korea, Russia, Singapore, South Africa, Taiwan and Thailand.

As of September 13, 2022, our intellectual property portfolio relating to ANA-001 included two pending U.S. patent applications, two PCT applications, and two non-U.S. patent applications directed to formulations and methods of use. The ANA-001 intellectual property includes both owned and YourChoice Therapeutics-licensed pending applications in the United States and PCT. The patents in the United States and non-U.S. countries that may be issued from pending applications, if any, are expected to expire between February 2041 to January 2042. The jurisdictions for the non-U.S. countries include: Argentina and Taiwan.

As of September 13, 2022, our exclusively licensed intellectual property portfolio under the 2022 License Agreement, assuming it becomes effective, for DA-1241 includes one U.S. patent directed to both composition of matter and a process of making the composition and one U.S. non-provisional patent application directed to both composition of matter and use of the composition. The issued U.S. patent would be expected to expire in July 2035, excluding any additional term for patent term adjustments or patent term extensions. NeuroBo's intellectual property portfolio for DA-1241 also includes approximately 17 non-U.S. patents and 14 non-U.S. patent applications directed to composition of matter and/or use of the composition. The issued non-U.S. patents would be expected to expire between 2035 and 2039, excluding any additional term for patent term adjustments or patent term extensions. The jurisdictions for the non-U.S. patents and applications include: Australia, Brazil, Canada, China, the European Patent Convention, Hong Kong, India, Israel, Japan, Mexico, New Zealand, Philippines, Republic of Korea, Russia, Saudi Arabia, and Singapore.

As of September 13, 2022, our exclusively licensed intellectual property portfolio for DA-1726 under the 2022 License Agreement, assuming it becomes effective, would include one U.S. patent directed to both composition of matter and use of the composition and one U.S. non-provisional patent application directed to both composition of matter and use of the composition. The issued U.S. patent would be expected to

expire in 2038, excluding any additional term for patent term adjustments or patent term extensions. Our intellectual property portfolio for DA-1726 would also include (i) a PCT application that would enter national phases in October 2022 and (ii) approximately five non-U.S. patents directed to composition of matter and eight non-U.S. patent applications directed to composition of matter and/or use. The issued non-U.S. patents would be expected to expire between 2038 and 2040, excluding any additional term for patent term adjustments or patent term extensions. The jurisdictions for the non-U.S. patents and applications include: Australia, Brazil, Canada, China, the European Patent Convention, Japan, Philippines, Republic of Korea, Russia, and Singapore.

The term of individual patents depends upon the legal term of the patents in the countries in which they are obtained. In most countries, including the United States, the patent term is 20 years from the earliest filing date of a non-provisional patent application. In the United States, a patent's term may be lengthened by patent term adjustment, which compensates a patentee for administrative delays by the U.S. Patent and Trademark Office, or the USPTO, in examining and granting a patent, or may be shortened if a patent is terminally disclaimed over an earlier filed patent. The term of a U.S. patent that covers a drug or biological product may also be eligible for patent term extension when approval from the FDA is granted, provided statutory and regulatory requirements are met. In the future, if our product candidates receive approval from the FDA or foreign regulatory authorities, we expect to apply for patent term extensions on issued patents covering those products, depending upon the length of the clinical trials for each drug and/or other factors. There can be no assurance that any of our pending patent applications will issue or that we will benefit from any patent term extension or other favorable adjustment to the term of any of its patents.

As with other biotechnology and pharmaceutical companies, our ability to maintain and solidify its proprietary and intellectual property position for its current and potential product candidates, including ANA001, NB-01, NB-02 and gemcabene and, if the 2022 License Agreement is consummated, DA-1241 and DA-1726, our preclinical compounds, and our core technologies will depend on its success in obtaining effective patent claims and enforcing those claims if granted. However, patent applications that we may file or license from third parties may not result in the issuance of patents. NeuroBo also cannot predict the breadth of claims that may be allowed or enforced in its patents. Any issued patents that we may receive in the future may be challenged, invalidated or circumvented. For example, prior to March 16, 2013, in the United States, patent applications were subject to a "first to invent" rule of law. Applications filed after March 16, 2013, except for certain applications claiming the benefit of earlier-filed applications, are subject to a "first to file" rule of law.

Discoveries reported in the scientific literature often lag the actual discoveries, and patent applications in the United States and other jurisdictions are typically not published until 18 months after filing, or in some cases not at all. We cannot be certain that any existing or future application will be subject to the "first to file" or "first to invent" rule of law, that we or our licensor were the first to make the inventions claimed in our existing or future patent portfolio subject to the prior laws, or that we or our licensor were the first to file for patent protection of such inventions subject to the new laws. If third parties prepare and file patent applications in the United States that also claim technology we have claimed in our patents or patent applications, we may have to participate in interference proceedings in the USPTO to determine priority of invention, which could result in substantial costs to us, even if the eventual outcome is favorable to NeuroBo. In addition, because of the extensive time required for clinical development and regulatory review of a product candidate NeuroBo may develop, it is possible that, before any of our product candidates can be commercialized, any related patent may expire or remain in force for only a short period following commercialization, thereby reducing any advantage of any such patent.

In addition to patents, we rely upon unpatented trade secrets, know-how, and continuing technological innovation to develop and maintain its competitive position. We seek to protect our proprietary information, in part, by using confidentiality agreements with its collaborators, scientific advisors, employees and consultants, and invention assignment agreements with its employees. We also have agreements requiring assignment of inventions with selected consultants, scientific advisors and collaborators. The confidentiality agreements are designed to protect our proprietary information and, in the case of agreements or clauses requiring invention assignment, to grant us ownership of technologies that are developed under those agreements.

BENEFICIAL OWNERSHIP

The following table sets forth certain information with respect to the beneficial ownership of our common stock as of September 30, 2022 by:

- each person, or group of affiliated persons, who we know to beneficially own more than 5% of our common stock;
- each of our Named Executive Officers;
- each of our directors; and
- all of our executive officers and directors as a group.

The percentage beneficial ownership information prior to the offering shown in the table is based on an aggregate of 888,693 shares of our common stock outstanding as of September 30, 2022. The percentage of beneficial ownership after this offering shown in the table is based on 1,603,546 shares of common stock outstanding after the closing of this offering, assuming no conversion of Series B Convertible Preferred Stock, no exercise of outstanding options issued under our equity incentive plans, no exercise of any warrants issued in this offering. The percentage of beneficial ownership also does not include the Series A Convertible Preferred Stock which are not currently convertible into common stock.

We have determined beneficial ownership in accordance with the rules of the SEC. These rules generally attribute beneficial ownership of securities to persons who possess sole or shared voting power or investment power with respect to those securities. In addition, the rules include shares of common stock issuable pursuant to: (i) the exercise of stock options that are either immediately exercisable or exercisable on or before November 29, 2022, which is 60 days after September 30, 2022 and (ii) outstanding warrants to purchase common stock held by that person that is either immediately exercisable or exercisable on or before November 29, 2022, which is 60 days after September 30, 2022. These shares are deemed to be outstanding and beneficially owned by the person holding those options and warrants for the purpose of computing the percentage ownership of that person, but they are not treated as outstanding for the purpose of computing the percentage ownership of any other person.

Unless otherwise noted below, the address of each of the individuals and entities named in the table below is c/o NeuroBo Pharmaceuticals, Inc., 200 Berkeley Street, Office 19th Floor, Boston, Massachusetts 02116. Beneficial ownership representing less than 1% is denoted with an asterisk (*).

Unless otherwise indicated, the persons or entities identified in this table have sole voting and investment power with respect to all shares shown as beneficially owned by them, subject to applicable community property laws.

	Number of Shares of Common Stock Beneficially Owned Prior to this Offering		Number of Shares of Common Stock Beneficially Owned After this Offering	
	Shares	Percentage	Shares	Percentage
5% Stockholders:	—	—	—	—
Dong-A ST Co., Ltd.[1]	96,020	10.8%	96,020	4.6%
E&Investment, Inc.[2]	200,554	22.6%	200,554	9.6%
Roy Lester Freeman[3]	48,538	5.5%	48,538	2.3%
Other Directors and Named Executive Officers:				
Andrew Koven[4]	777	*	777	*
Na Yeon (Irene) Kim[2][5]	203,846	22.9%	203,846	9.8%
Jason Groves[6]	1,888	*	1,888	*
Michael Salsbury[7]	1,888	*	1,888	*
Hyung Heon Kim	—	—	—	—
Richard Kang	—	—	—	—

	Number of Shares of Common Stock Beneficially Owned Prior to this Offering		Number of Shares of Common Stock Beneficially Owned After this Offering	
	Shares	Percentage	Shares	Percentage
D. Gordon Strickland[8]	370	*	370	*
Gil Price[9]	8,888	1.0	8,888	*
All directors and executive officers as a group (8 persons)	208,567	23.5%	208,567	10.0%

(1) Represents shares held by Dong-A ST Co., Ltd. ("Dong-A"). Dong-A is a South Korean corporation. The address of Dong-A ST Co., Ltd. Is 64, Cheonho-daero, Dongdaemun-gu, Seoul, Republic of Korea.

(2) Includes 96,351 shares of common stock held by The E&Healthcare Investment Fund II ("Fund II"), 37,373 shares of common stock held by The E&Healthcare Investment Fund No. 6 ("Fund 6"), 62,159 shares of common stock held by The E&Healthcare Investment Fund No. 7 ("Fund 7") and 4,671 shares of common stock held by E&Investment, Inc. ("GP"). GP is the general partner of each of Fund II, Fund 6 and Fund 7 and may be deemed to beneficially own 200,554 shares of common stock. Na Yeon Kim as the Chief Executive Officer of GP, may be deemed to hold shared voting and dispositive power over a total of 202,387 shares of common stock. Ms. Kim has been granted stock options to purchase up to 2,666 shares of common stock in respect of her service on the Board, of which 1,888 are exercisable within 60 days of September 30, 2022. The business address of Ms. Kim and the address of the principal office of the person and entities noted in this footnote is 16th floor, Yeoksam I-Tower, 326, Teheran-ro, Gangnam-gu, Seoul, Republic of Korea 06211.

(3) Represents shares held by Roy Lester Freeman. The address of Mr. Freeman is 200 Berkeley Street, 19th Floor, Boston, Massachusetts, 02116.

(4) Includes 777 shares of common stock issuable upon the exercise of stock options.

(5) Includes 202,013 shares of common stock and 1,888 shares of common stock issuable upon the exercise of stock options.

(6) Includes 1,888 shares of common stock issuable upon the exercise of stock options.

(7) Includes 1,888 shares of common stock issuable upon the exercise of stock options.

(8) Includes 370 shares of common stock issuable upon the exercise of stock options.

(9) Includes 8,888 shares of common stock issuable upon the exercise of stock options.

CERTAIN RELATIONSHIPS AND RELATED PERSON TRANSACTIONS

Other than compensation arrangements, including employment, termination of employment and change in control arrangements, with our directors and executive officers, and the other transactions discussed in the sections titled "Executive Compensation" and "Certain Relationships and Related Party Transactions" in our Definitive Proxy Statement on Schedule 14A filed with the SEC on May 18, 2022 and incorporated by reference herein, the following is a description of each transaction since January 1, 2019 and each currently proposed transaction in which:

- the amounts involved exceeded or will exceed the lesser of (a) $120,000 or (b) 1% of the average of our total assets for the fiscal years ended December 31, 2021 or 2020; and
- any of our directors, executive officers or holders of more than 5% of our capital stock, or any member of the immediate family of, or person sharing the household with, the foregoing persons, had or will have a direct or indirect material interest.

On September 14, 2022, we entered into a series of agreements with Dong-A, including the 2022 License Agreement, the Shared Services Agreement, the Securities Purchase Agreement and the Investor Rights Agreement. The disclosure regarding such agreements under "Business" above is incorporated by reference herein.

In addition, on September 14, 2022, we entered into a Registration Rights Agreement with Dong-A and affiliates of E&Investment, Inc., which is the holder of 22.6% of our outstanding stock on the date hereof and Na Yeon (Irene) Kim, who is the chief executive officer of E&Investment, Inc., and a member of our Board. The disclosure regarding the Registration Rights Agreement under "Business" above is incorporated by reference herein.

DESCRIPTION OF SECURITIES WE ARE OFFERING

The following description summarizes certain terms of the Series B Convertible Preferred Stock and warrants included in this offering. The material terms and provisions of our common stock and our Series B Convertible Preferred Stock are described under the caption "*Description of Capital Stock*". This summary does not purport to be complete and is qualified in its entirety by the provisions of our certificate of incorporation and bylaws and the provisions of the Series B Preferred Stock and warrants, copies of which are filed with the SEC as exhibits to the Registration Statement on Form S-1 of which this prospectus forms a part, and to the applicable provisions of Delaware law.

We are offering (i) 714,853 Class A Units, each unit consisting of one share of common stock and one warrant, and (ii) 476,569 Class B Units, consisting of one share of Series B Convertible Preferred Stock and one warrant.

Each share of common stock and Series B Convertible Preferred Stock and accompanying warrant included in each unit will be immediately separable upon issuance and will be issued separately will be immediately separable upon issuance and will be issued separately. The units will not be issued or certificated. We are also registering the shares of common stock included in the Class A Units and the shares of common stock issuable upon conversion of the Series B Convertible Preferred Stock and shares of common stock issuable from time to time upon exercise of the warrants included in the units offered hereby.

Warrants

The following description of the warrants we are offering is a summary and is qualified in its entirety by reference to the provisions of the warrant, the form of which is filed as an exhibit to the registration statement of which this prospectus forms a part.

Duration and Exercise Price.

Each warrant offered hereby will have an initial exercise price per share equal to $. The warrant will be immediately exercisable upon issuance and will expire on the fifth anniversary of the original issuance date. The exercise price and number of shares of common stock issuable upon exercise are subject to appropriate adjustment in the event of stock dividends, stock splits, reorganizations or similar events affecting our shares of common stock and the exercise price. Pursuant to a warrant agency agreement between us and American Stock Transfer & Trust Company, as warrant agent, the warrants will be issued in book-entry form and shall initially be represented only by one or more global warrants deposited with the warrant agent, as custodian on behalf of The Depository Trust Company ("DTC"), and registered in the name of Cede & Co., a nominee of DTC, or as otherwise directed by DTC.

Exercisability.

The warrants will be exercisable, at the option of the holder, in whole or in part, by delivering to us a duly executed exercise notice accompanied by payment in full for the number of shares of common stock purchased upon such exercise (except in the case of a cashless exercise, as discussed below). A holder (together with its affiliates) may not exercise any portion of the warrant to the extent that the holder would own more than 4.99% (or, at the election of the holder, 9.99%) of the outstanding shares of common stock immediately after exercise. However, upon notice from the holder to us, the holder may decrease or increase the holder's beneficial ownership limitation, which may not exceed 9.99% of the number of outstanding shares of common stock immediately after giving effect to the exercise, as such percentage ownership is determined in accordance with the terms of the warrants, provided that any increase in the beneficial ownership limitation will not take effect until 61 days following notice to us. Purchasers in this offering may also elect, prior to the issuance of the warrants, to have the initial exercise limitation set at 9.99% of our outstanding shares of common stock. No fractional shares will be issued in connection with the exercise of a warrant. In lieu of fractional shares, we will either pay the holder an amount in cash equal to the fractional amount multiplied by the exercise price or round down to the next whole share.

Cashless Exercise.

If, at the time a holder exercises its warrants, a registration statement registering the issuance of the shares of common stock underlying the warrants under the Securities Act is not then effective or available

and an exemption from registration under the Securities Act is not available for the issuance of such shares, then in lieu of making the cash payment otherwise contemplated to be made to us upon such exercise in payment of the aggregate exercise price, the holder may elect instead to receive upon such exercise (either in whole or in part) the net number of shares of common stock determined according to a formula set forth in the warrants.

Transferability.

Subject to applicable laws, a warrant may be transferred at the option of the holder upon surrender of the warrant to us together with the appropriate instruments of transfer.

Exchange Listing.

There is no trading market available for the warrants on any securities exchange or nationally recognized trading system. We do not intend to list the warrants on any securities exchange or nationally recognized trading system.

Right as a Stockholder.

Except as otherwise provided in the warrants or by virtue of such holder's ownership of our shares of common stock, the holders of the warrants do not have the rights or privileges of holders of our shares of common stock, including any voting rights, until they exercise their warrants.

Fundamental Transaction.

In the event of a fundamental transaction, as described in the warrants and generally including any reorganization, recapitalization or reclassification of our shares of common stock, the sale, transfer or other disposition of all or substantially all of our properties or assets, our consolidation or merger with or into another person, the acquisition of more than 50% of our outstanding shares of common stock, or any person or group becoming the beneficial owner of more than 50% of the voting power represented by our outstanding shares of common stock, the holders of the warrants will be entitled to receive upon exercise of the warrants the kind and amount of securities, cash or other property that the holders would have received had they exercised the warrants immediately prior to such fundamental transaction.

Call Feature.

The warrants are callable by us in certain circumstances. Subject to certain exceptions, in the event that the warrants are outstanding, if, after the closing date, (i) the volume weighted average price of our common stock for any 20 of 30 consecutive trading days (the "Measurement Period"), which Measurement Period commences on the closing date, exceeds 300% of the exercise price (subject to adjustment for forward and reverse stock splits, recapitalizations, stock dividends and similar transactions after the initial exercise date), (ii) the average daily trading volume for such Measurement Period exceeds $500,000 per trading day, and (iii) the warrant holder is not in possession of any information that constitutes or might constitute, material non-public information which was provided by the Company, and subject to the applicable beneficial ownership limitation, then we may, within one trading day of the end of such Measurement Period, upon notice (a "Call Notice"), call for cancellation of all or any portion of the warrants for which a notice of exercise has not yet been delivered (a "Call") for consideration equal to $0.001 per warrant share. Any portion of a warrant subject to such Call Notice for which a notice of exercise shall not have been received by the Call Date (as hereinafter defined) will be canceled at 6:30 p.m. (New York City time) on the tenth trading day after the date the Call Notice is sent by the Company (such date and time, the "Call Date"). Our right to call the warrants shall be exercised ratably among the holders based on the then outstanding warrants.

UNDERWRITING

We are offering the Class A Units and Class B Units described in this prospectus through the underwriters named below. Ladenburg Thalmann & Co. Inc. is acting as the representative of the underwriters in this offering. Subject to the terms and conditions of the underwriting agreement, dated as of , the underwriters have agreed to purchase the number of our securities set forth opposite its respective name below.

Underwriters	Number of Class A Units	Number of Class B Units
Ladenburg Thalmann & Co. Inc.	—	
Total		

A copy of the underwriting agreement has been filed as an exhibit to the registration statement of which this prospectus is part.

We have been advised by the underwriters that they propose to offer the Class A Units and Class B Units, if any, directly to the public at the public offering price set forth on the cover page of this prospectus. Any securities sold by the underwriters to securities dealers will be sold at the public offering price less a selling concession not in excess of $ per share (or per share of common stock underlying the Series B Convertible Preferred Stock) and $ per warrant.

The underwriting agreement provides that the underwriters' obligation to purchase the securities we are offering is subject to conditions contained in the underwriting agreement.

No action has been taken by us or the underwriters that would permit a public offering of the Class A Units or Class B Units, or the shares of common stock, shares of Series B Convertible Preferred Stock and warrants included in the Class A Units or Class B Units in any jurisdiction outside the United States where action for that purpose is required. None of our securities included in this offering may be offered or sold, directly or indirectly, nor may this prospectus or any other offering material or advertisements in connection with the offer and sales of any of the securities offering hereby be distributed or published in any jurisdiction except under circumstances that will result in compliance with the applicable rules and regulations of that jurisdiction. Persons who receive this prospectus are advised to inform themselves about and to observe any restrictions relating to this offering of securities and the distribution of this prospectus. This prospectus is neither an offer to sell nor a solicitation of any offer to buy the securities in any jurisdiction where that would not be permitted or legal.

The underwriters have advised us that they do not intend to confirm sales to any account over which they exercise discretionary authority.

Underwriting Discount and Expenses

The following table summarizes the underwriting discount and commission to be paid to the underwriters by us.

	Per Class A Unit[1]	Per Class B Unit[2]	Total Without Over-Allotment	Total With Full Over-Allotment
Public offering price	$	$	$	$
Underwriting discounts and commissions to be paid to underwriters by us[3][4]	$	$	$	$
Proceeds, before expenses, to us	$	$	$	$

(1) The public offering price and underwriting discount corresponds to, in respect of the Class A Units, (i) a public offering price per share of common stock of $ ($ net of the underwriting discount) and (ii) a public offering price per warrant of $ ($ net of the underwriting discount).

(2) The public offering price and underwriting discount in respect of the Class B Units corresponds to (i) a public offering price per Series B Convertible Preferred Stock convertible into shares of common stock of $ ($ net of the underwriting discount) and (ii) a public offering price per warrant of $ ($ net of the underwriting discount).

(3) We have also agreed to pay the representative a management fee of 0.5% of the gross proceeds from the offering and to reimburse the accountable expenses of the representative, including a pre-closing expense allowance of up to a maximum of $35,000 and an additional closing expense allowance up to a maximum of $110,000.

(4) We have granted a 45-day option to the underwriters to purchase up to additional shares of common stock and/or additional warrants to purchase an additional shares of common stock at the assumed public offering price per share of common stock and the assumed public offering price per warrant set forth above less the underwriting discounts and commissions solely to cover over-allotments, if any.

We estimate the total expenses payable by us for this offering to be approximately $, which amount includes (i) the underwriting discount of $, (ii) reimbursement of the accountable expenses of the underwriters, including the legal fees of the representative, in an amount not to exceed $35,000 for pre-closing expenses plus $110,000 for closing expenses, (iii) a management fee of approximately $ which represents 0.5% of the total gross proceeds payable to the representative, and (iv) other estimated company expenses of approximately $, which includes legal, accounting, printing costs, and various fees associated with the registration and listing of our shares.

Over-allotment Option

We have granted to the underwriters an option exercisable not later than 45 days after the date of this prospectus to purchase up to an additional 178,713 shares and/or 178,713 warrants at the public offering price per share of common stock and the public offering price per warrant set forth on the cover page hereto less the underwriting discounts and commissions. The underwriters may exercise the option solely to cover overallotments, if any, made in connection with this offering. If any additional shares of common stock, and/or warrants are purchased, the underwriters will offer these shares of common stock and/or warrants on the same terms as those on which the other securities are being offered.

Determination of Offering Price

Our common stock is currently traded on The Nasdaq Capital Market under the symbol “NRBO.” On October 17, 2022, the closing price of our common stock was $12.59 per share.

The public offering price of the securities offered by this prospectus will be determined by negotiation between us and the underwriters. Among the factors that will be considered in determining the final public offering price of the shares:

- Our history and our prospects;
- The industry in which we operate;
- Our past and present operating results; and
- The general condition of the securities markets at this time of this offering.

The public offering price stated on the cover page of this prospectus should not be considered an indication of the actual value of the shares of common stock sold in this offering. That price is subject to change as a result of market conditions and other factors and we cannot assure you that the shares of common stock sold in this offering can be resold at or above the public offering price.

Right of First Refusal

We have granted to Ladenburg Thalmann & Co. Inc. the right of first refusal for a period of twelve (12) months following the closing of this offering to act as sole bookrunner, exclusive placement agent or exclusive sales agent in connection with any financing of the Company.

Listing

Our shares of common stock are listed on the Nasdaq Capital Market under the symbol "NRBO."

The last reported sales price of our shares of common stock on October 17, 2022 was $12.59 per share. The actual public offering price per Class A Unit or Class B Unit, as the case may be, will be determined between us, the underwriters and the investors in the offering, and may be at a discount to the current market price of our common stock. Therefore, the assumed public offering price used throughout this prospectus may not be indicative of the final public offering price. There is no established public trading market for the warrants or the Series B Convertible Preferred Stock, and we do not expect such a market to develop. In addition, we do not intend to apply for listing of the Series B Convertible Preferred Stock or the warrants on any securities exchange or other trading system.

Lock-up Agreements

Our officers, directors and each of their respective affiliates and associated partners, Dong-A (and its respective affiliates), and certain other stockholders have agreed with the underwriters to be subject to a lock-up period of 90 days following the date of this prospectus. This means that, during the applicable lock-up period, such persons may not offer for sale, contract to sell, sell, distribute, grant any option, right or warrant to purchase, pledge, hypothecate or otherwise dispose of, directly or indirectly, any shares of our common stock or any securities convertible into, or exercisable or exchangeable for, shares of our common stock. Certain limited transfers are permitted during the lock-up period if the transferee agrees to these lock-up restrictions. We have also agreed, in the underwriting agreement, to similar lock-up restrictions on the issuance and sale of our securities for 90 days following the closing of this offering, although we will be permitted to issue stock options or stock awards to directors, officers and employees under our existing plans. Ladenburg Thalmann & Co. Inc. may, in their sole discretion and without notice, waive the terms of any of these lock-up agreements.

Other Relationships

From time to time, certain of the underwriters and their affiliates may provide in the future, various advisory, investment and commercial banking and other services to us in the ordinary course of business, for which they will receive customary fees and commissions. The representative has received compensation in connection with advisory services provided to the company in connection with a licensing transaction and will receive an additional cash fee upon closing of the licensing transaction and will receive a cash commission of 3% on the $15 million private placement transaction with Dong-A.

Transfer Agent, Warrant Agent and Registrar

The transfer agent, warrant agent and registrar for our common stock is American Stock Transfer & Trust Company, LLC.

Stabilization, Short Positions and Penalty Bids

The underwriters may engage in syndicate covering transactions stabilizing transactions and penalty bids or purchases for the purpose of pegging, fixing or maintaining the price of our common stock;

- Syndicate covering transactions involve purchases of securities in the open market after the distribution has been completed in order to cover syndicate short positions. Such a naked short position would be closed out by buying securities in the open market. A naked short position is more likely to be created if the underwriters are concerned that there could be downward pressure on the price of the securities in the open market after pricing that could adversely affect investors who purchase in the offering.
- Stabilizing transactions permit bids to purchase the underlying security so long as the stabilizing bids do not exceed a specific maximum.
- Penalty bids permit the underwriters to reclaim a selling concession from a syndicate member when the securities originally sold by the syndicate member are purchased in a stabilizing or syndicate covering transaction to cover syndicate short positions.

These syndicate covering transactions, stabilizing transactions, and penalty bids may have the effect of raising or maintaining the market prices of our securities or preventing or retarding a decline in the market prices of our securities. As a result the price of our common stock may be higher than the price that might otherwise exist in the open market. Neither we nor the underwriters make any representation or prediction as to the effect that the transactions described above may have on the price of our common stock. These transactions may be effected on the Nasdaq Capital Market, in the over-the-counter market or on any other trading market and, if commenced, may be discontinued at any time.

In connection with this offering, the underwriters also may engage in passive market making transactions in our common stock in accordance with Regulation M during a period before the commencement of offers or sales of shares of our common stock in this offering and extending through the completion of the distribution. In general, a passive market maker must display its bid at a price not in excess of the highest independent bid for that security. However, if all independent bids are lowered below the passive market maker's bid that bid must then be lowered when specific purchase limits are exceeded. Passive market making may stabilize the market price of the securities at a level above that which might otherwise prevail in the open market and, if commenced, may be discontinued at any time.

Neither we, nor the underwriters make any representation or prediction as to the direction or magnitude of any effect that the transactions described above may have on the prices of our securities. In addition, neither we nor the underwriters make any representation that the underwriters will engage in these transactions or that any transactions, once commenced will not be discontinued without notice.

Indemnification

We have agreed to indemnify the underwriters against certain liabilities, including certain liabilities arising under the Securities Act, or to contribute to payments that the underwriters may be required to make for these liabilities.

DESCRIPTION OF CAPITAL STOCK

The following description of our capital stock and provisions of our Third Amended and Restated Certificate of Incorporation, as amended ("Certificate of Incorporation") and Second Amended and Restated Bylaws ("Amended and Restated Bylaws") are summaries. You should also refer to the Certificate of Incorporation and the Amended and Restated Bylaws, which are filed as exhibits to the registration statement of which this prospectus is a part.

General

Our Certificate of Incorporation authorizes us to issue up to 100,000,000 shares of common stock and 10,000,000 shares of preferred stock, par value $0.001 per share, all of which shares of preferred stock are currently undesignated. Our board of directors may establish the rights and preferences of the preferred stock from time to time.

As of September 30, 2022, there were (i) 888,693 shares of common stock outstanding; (ii) no outstanding shares of preferred stock; (iii) 36,493 shares of common stock issuable upon the exercise of outstanding stock options; and (iv) 228,235 shares of common stock issuable upon the exercise of outstanding warrants.

Common Stock

Voting

Each holder of our common stock is entitled to one vote for each share on all matters submitted to a vote of the stockholders, including the election of directors. Our stockholders do not have cumulative voting rights. Because of this, the holders of a majority of the shares of common stock entitled to vote in any election of directors can elect all of the directors standing for election, if they should so choose.

Dividends

Subject to preferences that may be applicable to any then-outstanding preferred stock, holders of our common stock are entitled to receive ratably those dividends, if any, as may be declared from time to time by the board of directors out of legally available funds.

Liquidation

In the event of our liquidation, dissolution or winding up, holders of our common stock will be entitled to share ratably in the net assets legally available for distribution to stockholders after the payment of all of our debts and other liabilities and the satisfaction of any liquidation preference granted to the holders of any then-outstanding shares of preferred stock.

Rights and Preferences

Holders of our common stock have no preemptive, conversion or subscription rights and there are no redemption or sinking fund provisions applicable to the common stock. The rights, preferences and privileges of the holders of our common stock are subject to, and may be adversely affected by, the rights of the holders of shares of any series of preferred stock that we may designate in the future.

Preferred Stock

Our board of directors has the authority under our Certificate of Incorporation, without further action by our stockholders, to issue up to 10,000,000 shares of preferred stock in one or more series, to establish from time to time the number of shares to be included in each such series, to fix the rights, preferences and privileges of the shares of each wholly unissued series and any qualifications, limitations or restrictions thereon, and to increase or decrease the number of shares of any such series, but not below the number of shares of such series then outstanding.

Our board of directors may authorize the issuance of preferred stock with voting or conversion rights that could adversely affect the voting power or other rights of the holders of our common stock. The purpose of authorizing our board of directors to issue preferred stock and determine its rights and preferences is to eliminate delays associated with a stockholder vote on specific issuances. The issuance of preferred stock, while providing flexibility in connection with possible acquisitions and other corporate purposes, could, among other things, have the effect of delaying, deferring or preventing a change in control of us and may adversely affect the market price of our common stock and the voting and other rights of the holders of our common stock. It is not possible to state the actual effect of the issuance of any shares of preferred stock on the rights of holders of common stock until the board of directors determines the specific rights attached to that preferred stock.

Series A Convertible Preferred Stock

Prior to the closing of this offering and the private offering and the issuance of the Upfront License Payment, we will designate 3,700 shares of our authorized and unissued preferred stock as Series A Convertible Preferred Stock by filing the Series A Certificate of Designation of Preferences, Rights and Limitations of Series A Convertible Preferred Stock (the "Series A Certificate of Designation") with the Delaware Secretary of State.

Each share of Series A Convertible Preferred Stock will be convertible into shares of our common stock, subject to adjustment as provided in the Series A Certificate of Designation. Each share of Series A Convertible Preferred Stock will be automatically converted into shares of common stock on the first trading day after the approval by our stockholders of the issuance of voting shares upon conversion of the Series A Convertible Preferred Stock issued in connection with the Upfront License Payment and issued in the private offering (the "Stockholder Approval"). We will not undertake any conversion of the Series A Convertible Preferred Stock, and no stockholder will have the right to convert any portion of its Series A Convertible Preferred Stock, until after we obtain Stockholder Approval. The holder of Series A Convertible Preferred Stock may elect to exchange the Series A Convertible Preferred Stock following the nine-month anniversary of the issuance thereof for the cash value of such shares as calculated based on the volume-weighted average price per share of our common stock on the day immediately prior to the date of conversion, in lieu of delivery of shares of common stock (if the shares deliverable upon conversion would otherwise violate listing rules of the Nasdaq Stock Market).

The Series A Convertible Preferred Stock shall be:

- Senior to all of our other equity securities;
- The liquidation preference per share of Series A Convertible Preferred Stock will be the amount such holders would receive if such holders had converted the Series A Convertible Preferred Stock into shares of common stock immediately prior to such liquidation.

The Series A Convertible Preferred Stock will have no voting rights, except as required by law and except that the consent of the holders of a majority of the then outstanding Series Convertible Preferred Stock is required to amend the terms of the Series A Certificate of Designation. The holders of the Series A Convertible Preferred Stock are entitled to receive dividends on an as-converted basis with the holders of the Company's common stock, when, as and if such dividends are paid on our common stock. In the event of any liquidation, dissolution or winding-up of the Company, the holders of the Series A Convertible Preferred Stock will participate pari passu with the holders of our common stock, on an as-converted basis.

Series B Convertible Preferred Stock

In connection with this offering, we will designate shares of our preferred stock as Series B Convertible Preferred Stock by filing the Series B Certificate of Designation (as defined below) with the Delaware Secretary of State.

Each share of Series B Convertible Preferred Stock will be convertible at any time at the holder's option into shares of common stock, subject to adjustment as provided in the Certificate of Designation of Preferences, Rights and Limitations of Series B Convertible Preferred Stock (the "Series B Certificate of

Designation"). Notwithstanding the foregoing, the Series B Certificate of Designation will further provide that we shall not effect any conversion of the Series B Convertible Preferred Stock, with certain exceptions, to the extent that, after giving effect to an attempted conversion, the holder of Series B Convertible Preferred Stock (together with such holder's affiliates, and any persons acting as a group together with such holder or any of such holder's affiliates) would beneficially own a number of shares of Common Stock in excess of 4.99% (or, at the election of the purchaser prior to the date of issuance, 9.99%) of the shares of our common stock then outstanding after giving effect to such exercise (the "Series B Convertible Preferred Stock Beneficial Ownership Limitation").

Subject to certain limitations, if the volume weighted average price of our stock during any 20 of 30 trading day period exceeds 300% of the conversion price, the average daily dollar trading volume for such trading period $500,000 per trading day and the holder is not in possession of any material non-public information, we may force each holder of Series B Convertible Preferred Stock to convert all of their shares of Series Convertible B Preferred Stock.

In the event of a liquidation, the holders of Series B Convertible Preferred Stock will be entitled to participate on an as-converted-to-common-stock basis with holders of the common stock in any distribution of assets of the Company to the holders of the common stock.

The Series B Convertible Preferred Stock will have no voting rights, except as required by law and except as described in the Series B Certificate of Designation. However, as long as any shares of Series B Convertible Preferred Stock remain outstanding, the Series B Certificate of Designation will provide that we shall not, without the affirmative vote of holders of a majority of the then-outstanding shares of Series B Convertible Preferred Stock: (a) alter or change adversely the powers, preferences or rights given to the Series B Convertible Preferred Stock or alter or amend the Series B Certificate of Designation, (b) increase the number of authorized shares of Series B Convertible Preferred Stock or (c) effect a stock split or reverse stock split of the Series Convertible B Preferred Stock or any like event.

The Series B Certificate of Designation will provide, among other things, that we shall not pay any dividends on shares of common stock (other than dividends in the form of common stock) unless and until such time as we pay dividends on each share of Series B Convertible Preferred Stock on an as-converted basis. Other than as set forth in the previous sentence, the Series B Certificate of Designation will provide that no other dividends shall be paid on shares of Series B Convertible Preferred Stock and that we shall pay no dividends (other than dividends in the form of common stock) on shares of common stock unless we simultaneously comply with the previous sentence.

The Series B Certificate of Designation will not provide for any restriction on the repurchase of Series B Convertible Preferred Stock by us while there is any arrearage in the payment of dividends on the Series B Convertible Preferred Stock. There will be no sinking fund provisions applicable to the Series B Convertible Preferred Stock.

We will not be obligated to redeem or repurchase any shares of Series B Convertible Preferred Stock. Shares of Series B Convertible Preferred Stock will not otherwise be entitled to any redemption rights or mandatory sinking fund or analogous fund provisions. Furthermore, Series B Convertible Preferred Stock does not have a termination date and can therefore be held perpetually.

There is no established public trading market for the Series B Convertible Preferred Stock, and we do not expect a market to develop. In addition, we do not intend to list the Series B Convertible Preferred Stock on any securities exchange or nationally recognized trading system. Without an active trading market, the liquidity will be limited.

The transfer agent for our Series B Convertible Preferred Stock to be issued in this offering is American Stock Transfer & Trust Company, LLC.

Description of Outstanding Warrants

As of September 30, 2022, there were warrants outstanding to purchase 228,235 shares of common stock issuable upon the exercise of warrants at a weighted-average exercise price of $140.07. Certain of these warrants have a net exercise provision under which its holder may, in lieu of payment of the exercise

price in cash, surrender the warrant and receive a net amount of shares based on the fair market value of our common stock at the time of exercise of the warrant after deduction of the aggregate exercise price. Each of these warrants also contains provisions for the adjustment of the exercise price and the aggregate number of shares issuable upon the exercise of the warrant in the event of dividends, share splits, reorganizations and reclassifications and consolidations. Certain of these warrants provide that, subject to limited exceptions, a holder will not have the right to exercise any portion of its warrants if the holder, together with its affiliates, would beneficially own over 4.99% of our then outstanding common stock following such exercise; provided, however, that upon prior notice to us, the warrant holder may increase its ownership, provided that in no event will the ownership exceed 9.99%.

Anti-Takeover Provisions

Section 203 of the Delaware General Corporation Law

We are subject to Section 203 of the Delaware General Corporation Law, which prohibits a Delaware corporation from engaging in any business combination with any interested stockholder for a period of three years after the date that such stockholder became an interested stockholder, with the following exceptions:

- before such date, the board of directors of the corporation approved either the business combination or the transaction that resulted in the stockholder becoming an interested stockholder;
- upon completion of the transaction that resulted in the stockholder becoming an interested stockholder, the interested stockholder owned at least 85% of the voting stock of the corporation outstanding at the time the transaction began, excluding for purposes of determining the voting stock outstanding, but not the outstanding voting stock owned by the interested stockholder, those shares owned (1) by persons who are directors and also officers and (2) employee stock plans in which employee participants do not have the right to determine confidentially whether shares held subject to the plan will be tendered in a tender or exchange offer; or
- on or after such date, the business combination is approved by the board of directors and authorized at an annual or special meeting of the stockholders, and not by written consent, by the affirmative vote of at least 66⅔% of the outstanding voting stock that is not owned by the interested stockholder.

In general, Section 203 defines a "business combination" to include the following:

- merger or consolidation involving the corporation or any direct or indirect majority-owned subsidiary of the corporation and the interested stockholder;
- any sale, transfer, pledge or other disposition of 10% or more of the assets of the corporation involving the interested stockholder (in one transaction or a series of transactions);
- subject to certain exceptions, any transaction that results in the issuance or transfer by the corporation or by any direct or indirect majority-owned subsidiary of the corporation of any stock of the corporation or of such subsidiary to the interested stockholder;
- any transaction involving the corporation or any direct or indirect majority-owned subsidiary of the corporation that has the effect of increasing the proportionate share of the stock or any class or series of the corporation beneficially owned by the interested stockholder; or
- the receipt by the interested stockholder of the benefit of any loans, advances, guarantees, pledges or other financial benefits by or through the corporation.

In general, Section 203 defines an "interested stockholder" as an entity or person who, together with the person's affiliates and associates, beneficially owns, or within three years prior to the time of determination of interested stockholder status did own, 15% or more of the outstanding voting stock of the corporation.

Certificate of Incorporation and Amended and Restated Bylaws

Our Certificate of Incorporation provides that the authorized number of directors may be changed only by resolution of the board of directors, and vacancies and newly created directorships on the board of

directors may, except as otherwise required by law or determined by the board of directors, only be filled by a majority vote of the directors then serving on the board of directors, even though less than a quorum.

Our Amended and Restated Bylaws provide that all stockholder actions must be effected at a duly called meeting of stockholders and eliminate the right of stockholders to act by written consent without a meeting. Our Amended and Restated Bylaws also provide that only our Chairman of the board of directors, Chief Executive Officer or the board of directors pursuant to a resolution adopted by a majority of the total number of authorized directors may call a special meeting of stockholders.

Our Amended and Restated Bylaws also provide that stockholders seeking to present proposals before a meeting of stockholders to nominate candidates for election as directors at a meeting of stockholders must provide timely advance notice in writing, and specify requirements as to the form and content of a stockholder's notice. At any meeting of stockholders for the election of directors at which a quorum is present, the election will be determined by a plurality of the votes cast by the stockholders entitled to vote at the election.

Our Certificate of Incorporation and Amended and Restated Bylaws provide that the stockholders cannot amend many of the provisions described above except by a vote of 66⅔% or more of our outstanding common stock. As described above, our Certificate of Incorporation gives our board of directors the authority, without further action by our stockholders, to issue up to 10,000,000 shares of preferred stock in one or more series.

The combination of these provisions will make it more difficult for our existing stockholders to replace our board of directors as well as for another party to obtain control of us by replacing our board of directors. Since our board of directors has the power to retain and discharge our officers, these provisions could also make it more difficult for existing stockholders or another party to effect a change in management. In addition, the authorization of undesignated preferred stock makes it possible for our board of directors to issue preferred stock with voting or other rights or preferences that could impede the success of any attempt to change our control.

These provisions are intended to enhance the likelihood of continued stability in the composition of our board of directors and its policies and to discourage coercive takeover practices and inadequate takeover bids. These provisions are also designed to reduce our vulnerability to hostile takeovers and to discourage certain tactics that may be used in proxy fights. However, such provisions could have the effect of discouraging others from making tender offers for our shares and may have the effect of delaying changes in our control or management. As a consequence, these provisions may also inhibit fluctuations in the market price of our stock that could result from actual or rumored takeover attempts. We believe that the benefits of these provisions, including increased protection of our potential ability to negotiate with the proponent of an unfriendly or unsolicited proposal to acquire or restructure our Company, outweigh the disadvantages of discouraging takeover proposals, because negotiation of takeover proposals could result in an improvement of their terms.

Choice of Forum

Our Amended and Restated Bylaws provide that the Court of Chancery of the State of Delaware will be the exclusive forum for:

- any derivative action or proceeding brought on our behalf;
- any action asserting a breach of fiduciary duty;
- any action asserting a claim against us arising pursuant to the Delaware General Corporation Law, our Certificate of Incorporation or our Amended and Restated Bylaws; or
- any action asserting a claim against us that is governed by the internal affairs doctrine.

The provision does not apply to suits brought to enforce a duty or liability created by the Exchange Act.

The enforceability of similar choice of forum provisions in other companies' certificates of incorporation has been challenged in legal proceedings, and it is possible that, in connection with any action, a court could

find the choice of forum provisions contained in our Certificate of Incorporation to be inapplicable or unenforceable in such action. Our Amended and Restated Bylaws further provides that the federal district courts of the United States will be the exclusive forum for resolving any complaint asserting a cause of action arising under the Securities Act, subject to and contingent upon a final adjudication in the State of Delaware of the enforceability of such exclusive forum provision.

Registration Rights

See Business — Registration Rights Agreement for a summary of the terms of the Registration Rights Agreement between Dong-A and us.

Transfer Agent and Registrar

The transfer agent and the registrar for the Company is American Stock Transfer and Trust Company, 6201 15th Avenue, Brooklyn, New York 11219.

Common Stock Listing

Our common stock is listed on the Nasdaq Capital Market under the symbol “NRBO”.

LEGAL MATTERS

Honigman LLP, Kalamazoo, Michigan, will issue a legal opinion as to the validity of the securities offered by this prospectus. The representative of the underwriters is being represented by Ellenoff, Grossman & Schole, LLP, New York, New York.

EXPERTS

The consolidated financial statements as of December 31, 2021 and 2020 and for each of the years then ended incorporated by reference in this Prospectus and in the Registration Statement have been so incorporated in reliance on the report of BDO USA, LLP, an independent registered public accounting firm, incorporated herein by reference, given on the authority of said firm as experts in auditing and accounting. The report on the consolidated financial statements contains an explanatory paragraph regarding the Company's ability to continue as a going concern.

WHERE YOU CAN FIND MORE INFORMATION

We file annual, quarterly and other reports, proxy statements and other information with the SEC. Our SEC filings are available to the public over the Internet at the SEC's website at http://www.sec.gov. Our Annual Report on Form 10-K, Quarterly Reports on Form 10-Q, and Current Reports on Form 8-K, including any amendments to those reports, and other information that we file with or furnish to the SEC pursuant to Section 13(a) or 15(d) of the Exchange Act can also be accessed free of charge through the Internet. These filings will be available as soon as reasonably practicable after we electronically file such material with, or furnish it to, the SEC. You may also access these filings through our website at www.neurobopharma.com.

We have filed with the SEC a registration statement under the Securities Act relating to the offering of these securities. The registration statement, including the attached exhibits, contains additional relevant information about us and the securities. This prospectus does not contain all of the information set forth in the registration statement. You can obtain a copy of the registration statement, at prescribed rates, from the SEC at the address listed above. The registration statement, along with our most recent annual report on Form 10-K, subsequent reports on Form 10-Q and current reports on Form 8-K, as well as other filings that we make with the SEC, are also available on our Internet website, www.neurobopharma.com. We have not incorporated by reference into this prospectus the information on our website, and you should not consider it to be a part of this prospectus.

INCORPORATION OF CERTAIN DOCUMENTS BY REFERENCE

The SEC allows us to "incorporate by reference" in this prospectus much of the information we file with the SEC, which means that we can disclose important information to you by referring you to those publicly available documents. The information we incorporate by reference is an important part of this prospectus, and certain information that we will later file with the SEC will automatically update and supersede this information. Later information that we file with the SEC will automatically update and supersede the information that is either contained, or incorporated by reference, in this prospectus, and will be considered to be a part of this prospectus from the date those documents are filed.

We incorporate by reference into this prospectus and the registration statement of which this prospectus forms a part the information or documents listed below that we have filed with the SEC, and any future filings we will make with the SEC under Sections 13(a), 13(c), 14, or 15(d) of the Exchange Act (other than information furnished under Item 2.02 or Item 7.01 of Form 8-K or Schedule 14A), including all filings filed pursuant to the Exchange Act after the date of the registration statement and prior to effectiveness of the registration statement, and following effectiveness of the registration statement and until the termination or completion of the offering of the securities covered by this prospectus:

- Our Annual Report on Form 10-K for the fiscal year ended December 31, 2021, filed with the SEC on March 31, 2022, including the information specifically incorporated by reference into such Annual Report on Form 10-K from our definitive proxy statement for our 2022 Annual Meeting of Stockholders filed with the SEC on May 18, 2022;

- Our Quarterly Reports on Form 10-Q for the quarters ended March 31, 2022 and June 30, 2022, filed with the SEC on May 13, 2022 and August 12, 2022;
- Our Current Reports on Form 8-K filed with the SEC on January 14, 2022, January 28, 2022, March 21, 2022, June 10, 2022, September 12, 2022, September 14, 2022, and September 29, 2022; and
- The description of the Registrant's Common Stock contained in the Registrant's Form 8-A (File No. 001-37809) filed with the Commission on June 20, 2016, as further amended by any subsequent amendment or report filed for the purpose of updating such description.

We will furnish without charge to you, on written or oral request, a copy of any or all of the documents incorporated by reference in this prospectus including exhibits to these documents. You should direct any requests for documents to NeuroBo Pharmaceuticals, Inc., Attn: Secretary, 200 Berkeley Street, 19th Floor, Boston, Massachusetts 02116, or via e-mail at info@neurobopharma.com. Our phone number is (800) 736-3001.

You also may access these filings on our website at http://ir.neurobopharma.com. We do not incorporate the information on our website into this prospectus and you should not consider any information on, or that can be accessed through, our website as part of this prospectus (other than those filings with the SEC that we specifically incorporate by reference into this prospectus).

NeuroBo Pharmaceuticals, Inc.

714,853 Class A Units consisting of shares of common stock and warrants and
476,569 Class B Units consisting of shares of Series B Convertible Preferred Stock and warrants
(and shares of common stock underlying shares of Series B Convertible Preferred Stock and warrants)

PRELIMINARY PROSPECTUS

, 2022

Sole Book Running Manager

Ladenburg Thalmann

PART II

INFORMATION NOT REQUIRED IN THE PROSPECTUS

Item 13. Other Expenses of Issuance and Distribution.

The following table sets forth all expenses paid or payable by the registrant in connection with this offering. All amounts shown are estimates except for the SEC registration fee and the FINRA filing fee.

	Amount Paid or to Be Paid
SEC registration fee	$ 1,390.50
FINRA filing fee	2,750.00
Printing expenses	50,000.00
Legal fees and expenses	319,000
Accounting fees and expenses	150,000
Other fees and expenses	6,859.50
Total	$ 530,000

Item 14. Indemnification of Directors and Officers.

We are incorporated under the laws of the State of Delaware. Section 102 of the Delaware General Corporation Law permits a corporation to eliminate the personal liability of directors of a corporation to the corporation or its stockholders for monetary damages for a breach of fiduciary duty as a director, except where the director breached his or her duty of loyalty, failed to act in good faith, engaged in intentional misconduct or knowingly violated a law, authorized the payment of a dividend or approved a stock repurchase in violation of Delaware corporate law or obtained an improper personal benefit.

Section 145 of the Delaware General Corporation Law provides that a corporation has the power to indemnify a director, officer, employee or agent of the corporation and certain other persons serving at the request of the corporation in related capacities against expenses (including attorneys' fees), judgments, fines and amounts paid in settlements actually and reasonably incurred by the person in connection with an action, suit or proceeding to which he or she is or is threatened to be made a party by reason of such position, if such person acted in good faith and in a manner he or she reasonably believed to be in or not opposed to the best interests of the corporation, and, in any criminal action or proceeding, had no reasonable cause to believe his or her conduct was unlawful, except that, in the case of actions brought by or in the right of the corporation, no indemnification shall be made with respect to any claim, issue or matter as to which such person shall have been adjudged to be liable to the corporation unless and only to the extent that the Court of Chancery or other adjudicating court determines that, despite the adjudication of liability but in view of all of the circumstances of the case, such person is fairly and reasonably entitled to indemnity for such expenses which the Court of Chancery or such other court shall deem proper.

As permitted by the Delaware General Corporation Law, our amended and restated bylaws provide that: (1) we are required to indemnify our directors and executive officers to the fullest extent permitted by the Delaware General Corporation Law; (2) we may, in our discretion, indemnify our other officers, employees and agents as set forth in the Delaware General Corporation Law; (3) we are required, upon satisfaction of certain conditions, to advance all expenses incurred by our directors and executive officers in connection with certain legal proceedings; (4) the rights conferred in the bylaws are not exclusive; (5) we are authorized to enter into indemnification agreements with our directors, officers, employees and agents; and (6) we may secure insurance on behalf of any director, officer, employee or other agent for any liability arising out of his or her actions in that capacity regardless of whether we would otherwise be permitted to indemnify him or her under the provisions of Delaware law.

We have entered into indemnification agreements with our directors and officers. These agreements provide broader indemnity rights than those provided under the Delaware General Corporation Law and our Certificate of Incorporation. The indemnification agreements are not intended to deny or otherwise limit

third-party or derivative suits against us or our directors or officers, but to the extent a director or officer were entitled to indemnity or contribution under the indemnification agreement, the financial burden of a third-party suit would be borne by us, and we would not benefit from derivative recoveries against the director or officer. Such recoveries would accrue to our benefit but would be offset by our obligations to the director or officer under the indemnification agreement.

We maintain a directors' and officers' liability insurance policy. The policy insures directors and officers against unindemnified losses arising from certain wrongful acts in their capacities as directors and officers and reimburses us for those losses for which we have lawfully indemnified the directors and officers. The policy contains various exclusions.

Item 15. Recent Sales of Unregistered Securities.

The following sets forth information regarding all unregistered securities we sold in the three years preceding the date of this registration statement. The information below does not reflect the 1-for-30 reverse stock split effective September 12, 2022.

On April 16, 2020, in connection with a registered direct offering, we issued to H.C. Wainwright & Co., LLC, as compensation for its serving as our exclusive placement agent for such registered direct offering warrants to purchase up to 37,500 shares of our common stock with an exercise price of $12.50 per share.

On October 1, 2021, we entered into a securities purchase agreement (the "October 2021 Securities Purchase Agreement") with several institutional investors for the purchase and sale in a registered direct offering of 4,307,693 shares of our common stock, at a purchase price of $3.25 per share for gross proceeds of approximately $14.0 million. The October 2021 Securities Purchase Agreement also provided for a concurrent private placement of warrants to purchase our common stock with the purchasers in the registered direct offering for no additional consideration.

On January 18, 2021, we entered into a securities purchase agreement with certain institutional and accredited investors, pursuant to which we, in a private placement, sold an aggregate of 2,500,000 shares of our common stock at a purchase price of $4.00 per share for gross proceeds of $10.0 million, and warrants to purchase an aggregate of 2,500,000 shares of common stock.

On December 31, 2020, we acquired 100% of ANA Therapeutics, Inc., a Delaware corporation ("ANA"), pursuant to an Agreement and Plan of Merger, dated December 31, 2020 (the "2020 Merger Agreement"). Pursuant to the 2020 Merger Agreement, we issued to the stockholders of ANA 3,243,875 shares of our common stock.

Unless otherwise noted, the transactions described in Item 15 were exempt from registration under the Securities Act pursuant to Section 4(a)(2) of the Securities Act in that such sales did not involve a public offering or under Rule 506 of Regulation D promulgated under the Securities Act, based on written representations provided to the Registrant.

Item 16. Exhibits and Financial Statement Schedules.

(a) Reference is made to the attached Exhibit Index.

(b) No financial statement schedules are provided because the information called for is not required or is shown in the financial statements or the notes thereto.

Item 17. Undertakings.

(a) The undersigned Registrant hereby undertakes:

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

(i) To include any prospectus required by Section 10(a)(3) of the Securities Act;

(ii) To reflect in the prospectus any facts or events arising after the effective date of the registration

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

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

provided, however, that paragraphs (a)(1)(i), (ii) and (iii) do not apply if the information required to be included in a post-effective amendment by those paragraphs is contained in reports filed with or furnished to the Commission by the Registrant pursuant to Section 13 or Section 15(d) of the Exchange Act, that are incorporated by reference in the registration statement.

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

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

(4) That, for the purpose of determining liability under the Securities Act of 1933 to any purchaser: each prospectus filed pursuant to Rule 424(b) as part of a registration statement relating to an offering, other than registration statements relying on Rule 430B or other than prospectuses filed in reliance on Rule 430A, shall be deemed to be part of and included in the registration statement as of the date it is first used after effectiveness; provided, however, that no statement made in a registration statement or prospectus that is part of the registration statement or made in a document incorporated or deemed incorporated by reference into the registration statement or prospectus that is part of the registration statement will, as to a purchaser with a time of contract of sale prior to such first use, supersede or modify any statement that was made in the registration statement or prospectus that was part of the registration statement or made in any such document immediately prior to such date of first use.

(5) That, for the purpose of determining liability under the Securities Act to any purchaser,

(i) each prospectus filed by the Registrant pursuant to Rule 424(b)(3) shall be deemed to be part of the registration statement as of the date the filed prospectus was deemed part of and included in the registration statement; and

(ii) each prospectus required to be filed pursuant to Rule 424(b)(2), (b)(5), or (b)(7) as part of a registration statement in reliance on Rule 430B relating to an offering made pursuant to Rule 415(a)(1)(i), (vii) or (x) for the purpose of providing the information required by Section 10(a) of the Securities Act shall be deemed to be part of and included in the registration statement as of the earlier of the date such form of prospectus is first used after effectiveness or the date of the first contract of sale of securities in the offering described in the prospectus. As provided in Rule 430B, for liability purposes of the issuer and any person that is at that date an underwriter, such date shall be deemed to be a new effective date of the registration statement relating to the securities in the registration statement to which that prospectus relates, and the offering of such securities at that time shall be deemed to be the initial *bona fide* offering thereof; *provided*, *however*, that no statement made in a registration statement or prospectus that is part of the registration statement or made in a document incorporated or deemed incorporated by reference into the registration statement or prospectus that is part of the registration statement will, as to a purchaser with a time of contract of sale prior to

such effective date, supersede or modify any statement that was made in the registration statement or prospectus that was part of the registration statement or made in any such document immediately prior to such effective date.

(b) The undersigned Registrant undertakes that in a primary offering of securities of the undersigned Registrant pursuant to this Registration Statement, regardless of the underwriting method used to sell the securities to the purchaser, if the securities are offered or sold to such purchaser by means of any of the following communications, the undersigned Registrant will be a seller to the purchaser and will be considered to offer or sell such securities to such purchaser:

(i) Any preliminary prospectus or prospectus of the undersigned Registrant relating to the offering required to be filed pursuant to Rule 424;

(ii) Any free writing prospectus relating to the offering prepared by or on behalf of the undersigned Registrant or used or referred to by the undersigned Registrant;

(iii) The portion of any other free writing prospectus relating to the offering containing material information about the undersigned Registrant or its securities provided by or on behalf of the undersigned Registrant; and

(iv) Any other communication that is an offer in the offering made by the undersigned Registrant to the purchaser.

(c) The Registrant hereby undertakes that, for purposes of determining any liability under the Securities Act, each filing of the Registrant's annual report pursuant to Section 13(a) or 15(d) of the Exchange Act (and, where applicable, each filing of an employee benefit plan's annual report pursuant to Section 15(d) of the Exchange Act) that is incorporated by reference in the registration statement shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial *bona fide* offering thereof.

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

EXHIBIT INDEX

Exhibit Number	Description	Incorporated by Reference			
		Form	File No.	Exhibit	Filing Date
1.1*	Form of Underwriting Agreement between the Registrant and Ladenburg Thalmann & Co. Inc.				
2.1++	Agreement and Plan of Merger, dated as of July 24, 2019, by and among Registrant, GR Merger Sub Inc. and NeuroBo Pharmaceuticals, Inc.	S-4	333-233588	2.1	11/4/2019
2.2	First Amendment to Agreement and Plan of Merger, dated as of July 24, 2019, by and among Registrant, GR Merger Sub Inc. and NeuroBo Pharmaceuticals, Inc.	S-4	001-37809		11/4/2019
2.3	Agreement and Plan of Merger, dated as of December 31, 2020, by and among the Registrant, Shelby Merger Sub 1, Inc., Shelby Merger Sub 2, LLC, ANA Therapeutics, Inc. and Akash Bakshi	8-K	001-37809	2.1	1/1/2021
3.1	Third Amended and Restated Certificate of Incorporation of Registrant.	8-K	001-37809	3.1	8/10/2016
3.2	Certificate of Amendment (Reverse Stock Split) to the Third Amended and Restated Certificate of Incorporation of the Company.	8-K	001-37809	3.1	12/31/2019
3.3	Certificate of Amendment (Name Change) to the Third Amended and Restated Certificate of Incorporation of the Company.	8-K	001-37809	3.2	12/31/2019
3.4	Certificate of Amendment (Reverse Stock Split) to the Third Amended and Restated Certificate of Incorporation of the Company.	8-K	001-37809	3.1	9/12/2022
3.5*	Form of Certificate of Designation of Series A Convertible Preferred Stock				
3.6*	Form of Certificate of Designation of Series B Convertible Preferred Stock				
3.7	Second Amended and Restated Bylaws of Registrant.	10-K	001-37809	3.4	3/30/2020
4.1	Form of Common Stock Certificate of the Registrant.	S-1	333-210815	4.1	6/13/2016
4.2*	Form of Warrant Agency Agreement between the Registrant and American Stock Transfer & Trust Company.				
4.3*	Form of Warrant offered hereby.				
4.4	Form of Warrant to Purchase Common Stock	8-K	001-37809	4.1	3/13/2017
4.5	Warrant to Purchase Stock, dated July 31, 2018, by and between the Registrant and Silicon Valley Bank	8-K	001-37809	4.1	8/6/2018
4.6	Form of Placement Agent's Warrant to Purchase Common Stock	8-K	001-37809	4.1	4/15/2020
4.7	Form of Warrant to Purchase Common Stock	8-K	001-37809	4.1	1/21/2021
4.8	Form of Warrant to Purchase shares of Common Stock	8-K	001-37809	4.1	10/4/2021
5.1*	Opinion of Honigman LLP.				
10.1+	Form of Indemnification Agreement.	S-1	333-210815	10.1	4/18/2016

Exhibit Number	Description	Incorporated by Reference			
		Form	File No.	Exhibit	Filing Date
10.2†	Amended and Restated License Agreement, effective as of August 2, 2018, by and between the Registrant and Pfizer Inc..	8-K	001-37809	10.1	8/6/2018
10.3+	2019 Equity Incentive Plan.	8-K	001-37809	10.2	12/31/2019
10.4+	Form of Restricted Stock Grant Notice and Restricted Stock Agreement under the Amended and Restated 2015 Equity Incentive Plan (Employees).	8-K	001-37809	10.4	7/25/2019
10.5+	Form of Restricted Stock Grant Notice and Restricted Stock Agreement under the Amended and Restated 2015 Equity Incentive Plan (Directors).	8-K	001-37809	10.5	7/25/2019
10.6^	License and Collaboration Agreement, dated as of July 23, 2019, by and between the Registrant and Beijing SL Pharmaceutical Co., Ltd.	8-K	001-37809	10.6	7/25/2019
10.7	Membership Agreement, dated as of November 11, 2020, by and between WeWork and the Registrant.	10-K	001-37809	10.15	3/30/2020
10.7	Amendment to Membership Agreement, dated December 23, 2021, by and between WeWork and the Registrant.	10-K	001-37809	10.47	3/31/2022
10.8	Amendment to Membership Agreement, dated February 9, 2022, by and between WeWork and the Registrant.	10-K	001-37809	10.48	3/31/2022
10.9^	Manufacturing and Supply Agreement, dated as of September 28, 2018, between Dong-A ST Co., Lt. and the Registrant.	S-4	333-233588	10.36	9/3/2019
10.10	Lease Agreement, dated as of May 2, 2019, by and between Gyeonggi Urban Innovation Corporation and NeuroBo Co., Ltd.	S-4	333-233588	10.40	9/3/2019
10.11^	License Agreement, dated as of January 18, 2018, as amended on April 18, 2018 and July 24, 2019, by and between Dong-A ST Co., Ltd. and the Registrant.	S-4	333-233588	10.42	9/3/2019
10.12^	Acquisition Agreement, dated January 18, 2018, as amended on April 18, 2018 and July 24, 2019, by and between Dong-A ST Co., Ltd. and the Registrant.	S-4	333-233588	10.43	9/3/2019
10.13+	2018 Stock Plan for the Registrant.	S-4	333-233588	10.44	9/3/2019
10.14+	Form of Stock Option Agreement for the 2018 Stock Plan for the Registrant.	S-4	333-233588	10.45	9/3/2019
10.15+	Form of Notice of Grant of Restricted Stock Purchase Right for the 2018 Stock Plan for the Registrant.	S-4	333-233588	10.46	9/3/2019
10.16+	Form of Notice of Grant of Stock Option to the 2018 Stock Plan for the Registrant.	S-4	333-233588	10.47	9/3/2019
10.17+	Form of Notice of Grant of Restricted Stock Bonus for the 2018 Stock Plan for the Registrant.	S-4	333-233588	10.48	9/3/2019
10.18++	Contingent Value Rights Agreement, dated as of December 30, 2019, by and among the Registrant, Grand Rapids Holders Representative, LLC, Computershare Inc. and Computershare Trust Company, N.A..	8-K	001-37809	10.1	12/31/2019

Exhibit Number	Description	Incorporated by Reference			
		Form	File No.	Exhibit	Filing Date
10.19	First Amendment to Contingent Value Rights Agreement, dated as of December 30, 2019, by and among the Registrant, Grand Rapids Holders Representative, LLC, Computershare Inc. and Computershare Trust Company, N.A., dated as of March 23, 2021.	8-K	001-37809	10.1	3/24/2021
10.20+	Employment Agreement, dated February 11, 2020, by and between the Registrant and Richard Kang.	8-K	001-37809	10.1	2/13/2020
10.21+	Form of Incentive Stock Option Agreement for 2019 Equity Incentive Plan.	10-K	001-37809	10.31	3/30/2020
10.22+	Form of Restricted Stock Agreement for 2019 Equity Incentive Plan.	10-K	001-37809	10.32	3/30/2020
10.23+	Form of Non-Qualified Stock Option Agreement for 2019 Equity Incentive Plan.	10-K	001-37809	10.33	3/30/2020
10.24+	Form of Stock Unit Agreement for 2019 Equity Incentive Plan.	10-K	001-37809	10.34	3/30/2020
10.25	Form of Securities Purchase Agreement.	8-K	001-37809	10.1	4/15/2020
10.26	Manufacturing and Supply Agreement (NB-02 formerly DA-9803), dated as of June 7, 2020, by and between Dong-A ST Co., Ltd. and the Registrant.	10-Q	001-37809	10.2	8/11/2020
10.27	Form of Support Agreement.	8-K	001-37809	10.1	1/6/2021
10.28	Form of Lock-Up Agreement.	8-K	001-37809	10.2	1/6/2021
10.29+	Employment Agreement, dated as of December 31, 2020, by and between the Registrant and Akash Bakshi.	10-K	001-37809	10.40	4/15/2021
10.30	Form of Securities Purchase Agreement, dated as of October 1, 2021, by and among NeuroBo Pharmaceuticals, Inc. and the purchasers identified on the signature pages thereto.	8-K	001-37809	10.1	10/4/2021
10.31+	NeuroBo Pharmaceuticals, Inc. 2021 Inducement Plan.	8-K	001-37809	10.1	11/4/2021
10.32+	Form of Stock Option Grant Notice, Option Agreement and Notice of Exercise under the NeuroBo Pharmaceuticals, Inc. 2021 Inducement Plan.	8-K	001-37809	10.2	11/4/2021
10.33+	Separation Agreement entered into on November 3, 2021 by and between NeuroBo Pharmaceuticals, Inc. and Richard Kang.	8-K	001-37809	10.3	11/4/2021
10.34+	Employment Agreement entered into on November 3, 2021 by and between NeuroBo Pharmaceuticals, Inc. and Ben Gil Price.	8-K	001-37809	10.4	11/4/2021
10.35+	Amended and Restated Non-Employee Director Compensation Policy, dated January 14, 2022.	8-K	001-37809	10.1	1/28/2022
10.36	Amendment to Membership Agreement, dated April 19, 2022, by and between WeWork and the Registrant.	10-Q	001-37809	10.1	8/12/2022
10.37^	License Agreement by and between Dong-A ST Co., Ltd. and the Registrant, dated September 14, 2022	8-K	001-37809	10.1	9/14/2022
10.38++	Securities Purchase Agreement by and between Dong-A ST Co., Ltd. and the Registrant, dated September 14, 2022.	8-K	001-37809	10.3	9/14/2022

Exhibit Number	Description	Incorporated by Reference			
		Form	File No.	Exhibit	Filing Date
10.39	Registration Rights Agreement by and among Dong-A ST Co., Ltd., The E&Healthcare Investment Fund II, The E&Healthcare Investment Fund No. 6, The E&Healthcare Investment Fund No. 7 and the Registrant, dated September 14, 2022.	8-K	001-37809	10.4	9/14/2022
10.40	Shared Services Agreement by and between Dong-A ST Co., Ltd. and the Registrant, dated September 14, 2022.	8-K	001-37809	10.2	9/14/2022
10.41	Investor Rights Agreement by and between Dong-A ST Co., Ltd. and the Registrant, dated September 14, 2022.	8-K	001-37809	10.5	9/14/2022
21.1^^	Subsidiaries of the Registrant				
23.1*	Consent of BDO USA, LLP, Independent Registered Public Accounting Firm.				
23.2*	Consent of Honigman, LLP (included in Exhibit 5.1).				
24.1*	Power of Attorney of certain directors and officers of the Registrant (contained on signature page).				
107*	Calculation of Registration Fee				

* Filed herewith.

** To be filed by amendment

† Registrant has omitted and filed separately with the SEC portions of the exhibit pursuant to a confidential treatment request under Rule 406 promulgated under the Securities Act.

+ Indicates a management contract or compensatory plan.

++ Certain schedules and exhibits have been omitted pursuant to Item 601(b)(2) of Regulation S-K. A copy of any omitted schedule and/or exhibit will be furnished to the SEC upon request.

^ Certain schedules and exhibits have been omitted pursuant to Item 601(a)(5) of Regulation S-K. A copy of any omitted schedule and/or exhibit will be furnished to the SEC upon request. Certain portions of the exhibits that are not material and would be competitively harmful if publicly disclosed have been redacted pursuant to Item 601(b)(10)(iv) of Regulation S-K. Copies of the unredacted exhibits will be furnished to the SEC upon request.

^^ Previously filed.

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, as amended, the Registrant has duly caused this Registration Statement on Form S-1 to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of Boston, Commonwealth of Massachusetts, on October 24, 2022.

NEUROBO PHARMACEUTICALS, INC.

By: /s/ Gil Price, M.D.

Name: Gil Price, M.D.
Title: President and Chief Executive Officer

Pursuant to the requirements of the Securities Act of 1933, this registration statement has been signed by the following persons in the capacities and on the dates indicated:

Signature	Title of Capacities	Date
/s/ Gil Price, M.D. Gil Price, M.D.	President and Chief Executive Officer (Principal Executive Officer, Principal Financial Officer and Principal Accounting Officer)	October 24, 2022
* Andrew Koven	Chair of the Board of Directors	October 24, 2022
* Jason L. Groves	Director	October 24, 2022
* Richard J. Kang	Director	October 24, 2022
* Hyung Heon Kim	Director	October 24, 2022
* Na Yeon (Irene) Kim	Director	October 24, 2022
* Michael Salsbury	Director	October 24, 2022
* D. Gordon Strickland	Director	October 24, 2022

*By: /s/ Gil Price, M.D.

Gil Price, M.D.
Attorney-in-fact

Exhibit 1.1

_____ SHARES OF COMMON STOCK AND

_____ SHARES OF SERIES B CONVERTIBLE PREFERRED STOCK
(CONVERTIBLE INTO _____ SHARES OF COMMON STOCK) AND

_____ WARRANTS (EXERCISABLE FOR _____ SHARES OF COMMON STOCK) OF

NEUROBO PHARMACEUTICALS, INC.

UNDERWRITING AGREEMENT

_____, 2022

Ladenburg Thalmann & Co. Inc.
As the Representative of the
Several underwriters, if any, named in Schedule I hereto
640 Fifth Avenue, 4th Floor
New York, New York 10019

Ladies and Gentlemen:

The undersigned, NeuroBo Pharmaceuticals, Inc., a corporation incorporated under the laws of Delaware (collectively with its subsidiaries and affiliates, including, without limitation, all entities disclosed or described in the Registration Statement as being subsidiaries or affiliates of NeuroBo Pharmaceuticals, Inc., the "Company"), hereby confirms its agreement (this "Agreement") with the several underwriters (such underwriters, including the Representative (as defined below), the "Underwriters" and each an "Underwriter") named in Schedule I hereto for which Ladenburg Thalmann & Co. Inc. is acting as representative to the several Underwriters (the "Representative" and if there are no Underwriters other than the Representative, references to multiple Underwriters shall be disregarded and the term Representative as used herein shall have the same meaning as Underwriter) on the terms and conditions set forth herein.

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

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

ARTICLE I.
DEFINITIONS

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

"Action" shall have the meaning ascribed to such term in Section 3.1(k).

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

"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.

"Certificate of Designation" means the Certificate of Designation to be filed prior to the Closing by the Company with the Secretary of State of Delaware in the form of Exhibit A attached hereto.

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

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

"Closing Preferred Shares" shall have the meaning ascribed to such term in Section 2.1(a)(ii).

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

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

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

"Closing Warrants" shall have the meaning ascribed to such term in Section 2.1(a)(ii).

"Combined Preferred Purchase Price" shall have the meaning ascribed to such term in Section 2.1(b).

"Combined Purchase Price" shall have the meaning ascribed to such term in Section 2.1(b).

"Commission" means the United States Securities and Exchange Commission.

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

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

"Company Auditor" means BDO USA, LLP, with offices located at _____.

"Company Counsel" means Honigman LLP, with offices located at 650 Trade Centre Way, Suite 200, Kalamazoo, Michigan 49002.

"Conversion Price" shall have the meaning ascribed to such term in the Certificate of Designation.

"Conversion Shares" shall have the meaning ascribed to such term in the Certificate of Designation.

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

"EGS" means Ellenoff Grossman & Schole LLP, with offices located at 1345 Avenue of the Americas, New York, New York 10105.

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

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

"Exempt Issuance" means the issuance of (a) shares of Common Stock, options, restricted stock units or other equity-based awards to employees, officers, directors or consultants of the Company pursuant to any equity compensation 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 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 following the Closing Date, (b) securities upon the exercise or exchange of or conversion of any Securities issued hereunder and/or other securities exercisable or exchangeable for or convertible into shares of Common Stock issued and outstanding on the date of this Agreement, including, without limitations the shares of the Company's Series A Convertible Preferred Stock issued to Dong-A ST Co., Ltd. pursuant to the terms and conditions of the License Agreement (as defined below) and the Securities Purchase Agreement (as defined below), provided that such securities have not been amended since the date of this Agreement to increase the number of such securities or to decrease the exercise price, exchange price or conversion price of such securities or to extend the term of such securities, (c) securities issued pursuant to acquisitions or strategic transactions (including, without limitation, joint venture, co-marketing, co-development or other collaboration agreements) approved by a majority of the disinterested directors of the Company, provided that such securities are issued as "restricted securities" (as defined in Rule 144) and carry no registration rights that require or permit the filing of any registration statement in connection therewith within ninety (90) days following the Closing Date, and provided that any such issuance shall only be to a Person (or to the equity holders of a Person) which is, itself or through its subsidiaries, an operating company or an owner of an asset in a business synergistic with the business of the Company and shall provide to the Company additional benefits in addition to the investment of funds, but 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, (d) up to $22,000,000 of the Company's Series A Convertible Preferred Stock pursuant to the terms and conditions of that certain license agreement entered into by and between the Company and Dong-A ST Co., Ltd. on September 14, 2022 (the "License Agreement") following the Closing, but prior to the 90th day following the Closing, and (e) up to $15,000,000 through a private placement to Dong-A ST Co., Ltd. of "restricted securities" (as defined in Rule 144) consisting of shares of the Company's Series A Preferred Stock and warrants to purchase shares of Common Stock (which such warrants shall have the same Exercise Price and term as the Warrants) following the Closing pursuant to the terms and conditions of that certain securities purchase agreement entered into by and between the Company and Dong-A ST Co., Ltd. on September 14, 2022 (the "Securities Purchase Agreement"), but prior to the 90th day following the Closing, at an aggregate price per share of Common Stock and warrants issued for each share of Common Stock equal to the public offering price.

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

"FINRA" means the Financial Industry Regulatory Authority.

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

"Indebtedness" means (a) any liabilities for borrowed money or amounts owed in excess of $50,000 (other than trade accounts payable incurred in the ordinary course of business), (b) all guaranties, endorsements and other contingent obligations in respect of indebtedness of others, whether or not the same are or should be reflected in the Company's consolidated balance sheet (or the notes thereto), except guaranties by endorsement of negotiable instruments for deposit or collection or similar transactions in the ordinary course of business; and (c) the present value of any lease payments in excess of $50,000 due under leases required to be capitalized in accordance with GAAP.

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

"Lock-Up Agreements" means the lock-up agreements that are delivered on the date hereof by each of the Company's officers and directors and the holders of Common Stock and Common Stock Equivalents identified on Schedule II hereto, in the form of Exhibit E attached hereto.

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

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

"Option" shall have the meaning ascribed to such term in Section 2.2.

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

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

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

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

"Option Warrants" shall have the meaning ascribed to such term in Section 2.2(a).

"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.

"Preferred Stock" means up to _____ shares of the Company's Series B Convertible Preferred Stock issued or issuable pursuant to Section 2.1(a)(ii) and having the rights, preferences and privileges set forth in the Certificate of Designation.

"Preferred Stock Agency Agreement" means the addendum to the Company's [Transfer Agency and Registrar Services Agreement] with the Transfer Agent, pursuant to which the Transfer Agent agrees to act as transfer agent and conversion agent for the Preferred Stock, in the form of Exhibit G attached hereto.

"Preliminary Prospectus" means, if any, any preliminary prospectus relating to the Securities included in the Registration Statement or filed with the Commission pursuant to Rule 424(b).

"Proceeding" means an action, claim, suit, investigation or proceeding (including, without limitation, an informal investigation or partial proceeding, such as a deposition), whether commenced or, to the Company's knowledge, threatened.

"Prospectus" means the final prospectus filed for the Registration Statement.

"Prospectus Supplement" means, if any, any supplement to the Prospectus complying with Rule 424(b) of the Securities Act that is filed with the Commission.

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

"Registration Statement" means, collectively, the various parts of the registration statement prepared by the Company on Form S-1 (File No. 333-267482) with respect to the Securities, each as amended as of the date hereof, including the Prospectus and Prospectus Supplement, if any, the Preliminary Prospectus, if any, and all exhibits filed with or incorporated by reference into such registration statement, and includes any Rule 462(b) Registration Statement.

"Required Approvals" shall have the meaning ascribed to such term in Section 3.1(e).

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

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

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

"Securities" means the Closing Securities, the Option Securities and the Underlying Shares.

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

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

"Shares" means, collectively, the shares of Common Stock delivered to the Underwriters in accordance with Section 2.1(a)(i) and Section 2.2(a).

"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 principal Trading Market is open for trading.

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

"Transaction Documents" means this Agreement, the Certificate of Designation, the Warrants, the Warrant Agency Agreement, the Preferred Stock Agency Agreement, the Lock-Up Agreements, and any other documents or agreements executed in connection with the transactions contemplated hereunder.

"Transfer Agent" means American Stock Transfer & Trust Company, the current transfer agent of the Company, with offices located at 6201 15th Avenue, Brooklyn, New York 11219, and any successor transfer agent of the Company.

"Underlying Shares" means, collectively, the Conversion Shares and the Warrant Shares.

"Warrant Agency Agreement" means the warrant agency agreement dated on or about the date hereof, among the Company and the Transfer Agent in the form of Exhibit D attached hereto.

"Warrant Purchase Price" shall have the meaning ascribed to such term in Section 2.1(b).

"Warrant Shares" means the shares of Common Stock issuable upon exercise of the Warrants.

"Warrants" means, collectively, the Common Stock purchase warrants delivered to the Underwriters in accordance with Section 2.1(a)(ii) and Section 2.2, which Warrants shall be exercisable immediately and have a term of exercise equal to five (5) years, in the form of Exhibit D attached hereto.

ARTICLE II.
PURCHASE AND SALE

2.1 Closing.

(a) Upon the terms and subject to the conditions set forth herein, the Company agrees to sell in the aggregate _____ shares of Common Stock, _____ shares of Preferred Stock, and Warrants exercisable for an aggregate of _____ shares of Common Stock, and each Underwriter agrees to purchase, severally and not jointly, at the Closing, the following securities of the Company:

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

(ii) the number of shares of Preferred Stock (the "Closing Preferred Shares") set forth opposite the name of such Underwriter on Schedule I hereof; and

(iii) Warrants to purchase up to the number of shares of Common Stock set forth opposite the name of such Underwriter on Schedule I hereof (the "Closing Warrants" and, collectively with the Closing Shares and Closing Preferred Shares, the "Closing Securities"), which Warrants shall have an exercise price of $____, subject to adjustment as provided therein.

(b) The aggregate purchase price for the Closing Securities shall equal the amount set forth opposite the name of such Underwriter on Schedule I hereto (the "Closing Purchase Price"). The combined purchase price for one Share and a Warrant to purchase one Warrant Share shall be $_____ (the "Combined Purchase Price") (for the avoidance of doubt, solely with respect to any Closing Securities sold to certain investors introduced by the Company included in Exhibit B to the Engagement Agreement (as defined herein in Section 7.2), the Combined Purchase Price shall be $___1) which shall be allocated as $_____ per Share (the "Share Purchase Price") and $____ per Warrant (the "Warrant Purchase Price"). The combined purchase price for one Closing Preferred Share and a Warrant to purchase _____ Warrant Share shall be $____ (the "Combined Preferred Purchase Price") which shall be allocated as $____ per Preferred Share and $____ per Warrant.

(c) On the Closing Date, each Underwriter shall deliver or cause to be delivered to the Company, via wire transfer, immediately available funds equal to such Underwriter's Closing Purchase Price and the Company shall deliver to, or as directed by, such Underwriter its respective Closing Securities and the Company shall deliver the other items required pursuant to Section 2.3 deliverable at the Closing. Upon satisfaction of the covenants and conditions set forth in Sections 2.3 and 2.4, the Closing shall occur at the offices of EGS or such other location as the Company and Representative shall mutually agree. The Public Securities are to be offered initially to the public at the offering price set forth on the cover page of the Prospectus (the "Offering").

1 Equal to 97% of the public offering price per unit

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

2.2 Option to Purchase Additional Securities .

(a) For the purposes of covering any over-allotments in connection with the distribution and sale of the Closing Securities, the Representative is hereby granted an option (the "Option") to purchase, in the aggregate, up to _____ shares of Common Stock (the "Option Shares") and Warrants to purchase up to ____ shares of Common Stock (the "Option Warrants" and, collectively with the Option Shares, the "Option Securities")[2] which may be purchased in any combination of Option Shares and/or Option Warrants at the Share Purchase Price and/or Warrant Purchase Price, respectively.

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

(c) The Option granted pursuant to this Section 2.2 may be exercised by the Representative as to all (at any time) or any part (from time to time) of the Option Securities within forty-five (45) days after the Execution Date. An Underwriter will not be under any obligation to purchase any Option Securities prior to the exercise of the Option by the Representative. The Option granted hereby may be exercised by the giving of oral notice to the Company from the Representative, which must be confirmed in writing by overnight mail or electronic transmission setting forth the number of Option Shares and/or Option Warrants to be purchased and the date and time for delivery of and payment for the Option Securities (each, an "Option Closing Date"), which will not be later than two (2) full Business Days after the date of the notice or such other time as shall be agreed upon by the Company and the Representative, at the offices of EGS or at such other place (including remotely by other electronic transmission) as shall be agreed upon by the Company and the Representative. If such delivery and payment for the Option Securities does not occur on the Closing Date, each Option Closing Date will be as set forth in the notice. Upon exercise of the Option, the Company will become obligated to convey to the Underwriters, and, subject to the terms and conditions set forth herein, the Underwriters will become obligated to purchase, the number of Option Shares and/or Option Warrants specified in such notice. The Representative may cancel the Option at any time prior to the expiration of the Option by written notice to the Company. On each Option Closing Date, if any, each Underwriter shall deliver or cause to be delivered to the Company, via wire transfer, immediately available funds equal to such Underwriter's Option Closing Purchase Price and the Company shall deliver to, or as directed by, such Underwriter its respective Option Securities and the Company shall deliver the other items required pursuant to Section 2.3 at the Option Closing. Upon satisfaction of the covenants and conditions set forth in Sections 2.3 and 2.4, the Option Closing shall occur at the offices of the Representative or such other location as the Company and Representative shall mutually agree.

[2] 15% of the Closing Shares and shares of Common Stock underlying the Closing Preferred Shares and the Closing Warrants.

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

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

(ii) At the Closing Date, the Closing Preferred Shares, which shares shall be delivered via The Depository Trust Company Deposit or Withdrawal at Custodian system for the accounts of the several Underwriters;

(iii) At the Closing Date, the Closing Warrants and, as to each Option Closing Date, if any, the applicable Option Warrants via The Depository Trust Company Deposit or Withdrawal at Custodian system for the accounts of the several Underwriters;

(iv) At the Closing Date, the Warrant Agency Agreement duly executed by the parties thereto;

(v) At the Closing Date, the Preferred Stock Agency Agreement duly executed by the parties thereto;

(vi) At the Closing Date, evidence of the filing and acceptance of the Certificate of Designation from the Secretary of State of the State of Delaware;

(vii) At the Closing Date, a legal opinion of Company Counsel addressed to the Underwriters, including, without limitation, a negative assurance letter, substantially in the form of Exhibit A attached hereto and as to each Option Closing Date, if any, a bring-down opinion, including, without limitation, a negative assurance letter from Company Counsel in form and substance reasonably satisfactory to the Representative and the favorable opinion of intellectual property legal counsel to the Company addressed to the Underwriters and in form and substance satisfactory to the Representative;

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

(ix) On the Closing Date and on each Option Closing Date, if any, the duly executed and delivered Officer's Certificate, substantially in the form required by Exhibit B attached hereto;

(x) On the Closing Date and on each Option Closing Date, if any, the duly executed and delivered Secretary's Certificate, substantially in the form required by Exhibit C attached hereto; and

(xi) Contemporaneously herewith, the duly executed and delivered Lock-Up Agreements.

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

(i) the accuracy in all material respects when made and on the date in question (other than representations and warranties of the Company already qualified by materiality, which shall be true and correct in all respects) of the representations and warranties of the Company contained herein (unless as of a specific date therein);

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

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

(iv) the consummation of the private placement pursuant to the Securities Purchase Agreement shall occur concurrently with the Closing;

(v) the Registration Statement shall be effective on the date of this Agreement and at each of the Closing Date and each Option Closing Date, if any, no stop order suspending the effectiveness of the Registration Statement shall have been issued and no proceedings for that purpose shall have been instituted or, to the Company's knowledge, shall be pending or contemplated by the Commission and any request on the part of the Commission for additional information shall have been complied with to the reasonable satisfaction of the Representative;

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

(vii) the Closing Shares, the Option Shares and the Underlying Shares have been approved for listing on the Trading Market; and

(viii) prior to and on each of the Closing Date and each Option Closing Date, if any: (i) there shall have been no material adverse change or development involving a prospective material adverse change in the condition or prospects or the business activities, financial or otherwise, of the Company from the latest dates as of which such condition is set forth in the Registration Statement and Prospectus; (ii) no action suit or proceeding, at law or in equity, shall have been pending or, to the Company's knowledge, threatened against the Company or any Affiliate of the Company before or by any court or federal or state commission, board or other administrative agency wherein an unfavorable decision, ruling or finding may materially adversely affect the business, operations, prospects or financial condition or income of the Company, except as set forth in the Registration Statement and Prospectus; (iii) no stop order shall have been issued under the Securities Act and no proceedings therefor shall have been initiated or threatened by the Commission with respect to the Company; and (iv) the Registration Statement and the Prospectus and any amendments or supplements thereto shall contain all material statements which are required to be stated therein in accordance with the Securities Act and the rules and regulations thereunder and shall conform in all material respects to the requirements of the Securities Act and the rules and regulations thereunder, and neither the Registration Statement nor the Prospectus nor any amendment or supplement thereto shall contain any untrue statement of a material fact or omit to state any material fact required to be stated therein or necessary to make the statements therein, in light of the circumstances under which they were made, not misleading.

ARTICLE III.
REPRESENTATIONS AND WARRANTIES

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

(a) Subsidiaries. All of the direct and indirect Subsidiaries of the Company are set forth in the SEC Reports. The Company owns, directly or indirectly, all of the capital stock or other equity interests of each Subsidiary free and clear of any Liens, and all of the issued and outstanding shares of capital stock of each Subsidiary are validly issued and are fully paid, non-assessable and free of preemptive and similar rights to subscribe for or purchase securities. If the Company has no Subsidiaries, all other references to the Subsidiaries or any of them in the Transaction Documents shall be disregarded.

(b) Organization and Qualification. The Company and each of the Subsidiaries is an entity duly incorporated or otherwise organized, validly existing and in good standing under the laws of the jurisdiction of its incorporation or organization, with the requisite power and authority to own and use its properties and assets and to carry on its business as currently conducted. Neither the Company nor any Subsidiary is in violation nor default of any of the provisions of its respective certificate or articles of incorporation, bylaws or other organizational or charter documents. Each of the Company and the Subsidiaries is duly qualified to conduct business and is in good standing as a foreign corporation or other entity in each jurisdiction in which the nature of the business conducted or property owned by it makes such qualification necessary, except where the failure to be so qualified or in good standing, as the case may be, could not have or reasonably be expected to result in a Material Adverse Effect and no Proceeding has been instituted in any such jurisdiction revoking, limiting or curtailing or seeking to revoke, limit or curtail such power and authority or qualification.

(c) Authorization; Enforcement. The Company has the requisite corporate power and authority to enter into and to consummate the transactions contemplated by this Agreement and each of the other Transaction Documents to which the Company is a party and otherwise to carry out its obligations hereunder and thereunder. The execution and delivery of this Agreement and each of the other Transaction Documents by the Company, the filing of the Certificate of Designation with the Secretary of State of the State of Delaware and the consummation by it of the transactions contemplated hereby and thereby have been duly authorized by all necessary action on the part of the Company and no further action is required by the Company, the Board of Directors or the Company's stockholders in connection herewith or therewith other than in connection with the Required Approvals. This Agreement and each other Transaction Document to which the Company is a party has been (or upon delivery will have been) duly executed by the Company and, when delivered in accordance with the terms hereof and thereof, will constitute the valid and binding obligation of the Company enforceable against the Company in accordance with its terms, except (i) as limited by general equitable principles and applicable bankruptcy, insolvency, reorganization, moratorium and other laws of general application affecting enforcement of creditors' rights generally, (ii) as limited by laws relating to the availability of specific performance, injunctive relief or other equitable remedies and (iii) insofar as indemnification and contribution provisions may be limited by applicable law.

(d) No Conflicts. The execution, delivery and performance by the Company of this Agreement and the other Transaction Documents to which it is a party, the filing of the Certificate of Designation with the Secretary of State of the State of Delaware, the issuance and sale of the Securities and the consummation by it of the transactions contemplated hereby and thereby do not and will not (i) conflict with or violate any provision of the Company's or any Subsidiary's certificate or articles of incorporation, bylaws or other organizational or charter documents, or (ii) conflict with, or constitute a default (or an event that with notice or lapse of time or both would become a default) under, result in the creation of any Lien upon any of the properties or assets of the Company or any Subsidiary, or give to others any rights of termination, amendment, anti-dilution or similar adjustments, acceleration or cancellation (with or without notice, lapse of time or both) of, any agreement, credit facility, debt or other instrument (evidencing a Company or Subsidiary debt or otherwise) or other understanding to which the Company or any Subsidiary is a party or by which any property or asset of the Company or any Subsidiary is bound or affected, or (iii) subject to the Required Approvals, conflict with or result in a violation of any law, rule, regulation, order, judgment, injunction, decree or other restriction of any court or governmental authority to which the Company or a Subsidiary is subject (including federal and state securities laws and regulations), or by which any property or asset of the Company or a Subsidiary is bound or affected; except in the case of each of clauses (ii) and (iii), such as could not have or reasonably be expected to result in a Material Adverse Effect.

(e) Filings, Consents and Approvals. The Company is not required to obtain any consent, waiver, authorization or order of, give any notice to, or make any filing or registration with, any court or other federal, state, local or other governmental authority or other Person in connection with the execution, delivery and performance by the Company of the Transaction Documents, other than: (i) as have been complied with, waived, obtained or made by the Company, (ii) the filing of the Certificate of Designation with the Delaware Secretary of State; (iii) the filing with the Commission of the Prospectus or Prospectus Supplement, if any, (iv) as may be required by the Trading Market and (v) such filings as are required to be made under applicable state securities laws or blue sky laws or the rules of FINRA (collectively, the "Required Approvals").

(f) Registration Statement. The Company has filed with the Commission the Registration Statement, including any related Prospectus or Prospectuses, for the registration of the Securities under the Securities Act, which Registration Statement has been prepared by the Company in all material respects in conformity with the requirements of the Securities Act and the rules and regulations of the Commission under the Securities Act. The Registration Statement has been declared effective by the Commission on _____, 2022 (the "Effective Date"). The Company has advised the Representative of all further information (financial and other) with respect to the Company required to be set forth therein in the Registration Statement and Prospectus Supplement. Any reference in this Agreement to the Registration Statement, the Prospectus or the Prospectus Supplement shall be deemed to refer to and include the documents incorporated by reference therein; and any reference in this Agreement to the terms "amend," "amendment" or "supplement" with respect to the Registration Statement, the Prospectus or the Prospectus Supplement shall be deemed to refer to and include the filing of any document under the Exchange Act after the date of this Agreement, or the issue date of the Prospectus or the Prospectus Supplement, as the case may be, deemed to be incorporated therein by reference. All references in this Agreement to financial statements and schedules and other information which is "contained," "included," "described," "referenced," "set forth" or "stated" in the Registration Statement, the Prospectus or the Prospectus Supplement (and all other references of like import) shall be deemed to mean and include all such financial statements and schedules and other information which is or is deemed to be incorporated by reference in the Registration Statement, the Prospectus or the Prospectus Supplement, as the case may be. No stop order suspending the effectiveness of the Registration Statement or the use of the Prospectus or the Prospectus Supplement has been issued, and no proceeding for any such purpose is pending or has been initiated or, to the Company's knowledge, is threatened by the Commission. For purposes of this Agreement, "free writing prospectus" has the meaning set forth in Rule 405 under the Securities Act. The Company will not, without the prior consent of the Representative, prepare, use or refer to, any free writing prospectus.

(g) Issuance of Securities. The Securities are duly authorized and, when issued and paid for in accordance with the applicable Transaction Documents, will be duly and validly issued, fully paid and nonassessable, free and clear of all Liens imposed by the Company. The Underlying Shares, when issued in accordance with the terms of the Transaction Documents, will be validly issued, fully paid and nonassessable, free and clear of all Liens imposed by the Company. The Company has reserved from its duly authorized capital stock the maximum number of shares of Common Stock issuable pursuant to this Agreement, the Certificate of Designation and the Warrants. The holder of the Securities will not be subject to personal liability by reason of being such holder. 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. All corporate action required to be taken for the authorization, issuance and sale of the Securities has been duly and validly taken. The Securities conform in all material respects to all statements with respect thereto contained in the Registration Statement.

(h) Capitalization. The capitalization of the Company is as set forth in the Registration Statement, the Prospectus or the Prospectus Supplement as of the dates referred to therein. The Company has not issued any capital stock since the filing of its most recently filed periodic report under the Exchange Act, other than pursuant to the exercise of employee stock options, the issuance of equity-based awards pursuant to the Company's equity compensation plans and pursuant to the conversion and/or exercise of Common Stock Equivalents outstanding as of the filing date of the most recently filed periodic report under the Exchange Act. No Person has any right of first refusal, preemptive right, right of participation, or any similar right to participate in the transactions contemplated by the Transaction Documents, except as set forth in Schedule 3.1(h). Except as a result of the purchase and sale of the Securities and as disclosed in the Registration Statement, the Prospectus or the Prospectus Supplement, there are no outstanding options, warrants, scrip rights to subscribe to, calls or commitments of any character whatsoever relating to, or securities, rights or obligations convertible into or exercisable or exchangeable for, or giving any Person any right to subscribe for or acquire, any shares of Common Stock or the capital stock of any Subsidiary, or contracts, commitments, understandings or arrangements by which the Company or any Subsidiary is or may become bound to issue additional shares of Common Stock or Common Stock Equivalents or the capital stock of any Subsidiary. Except as set forth in Schedule 3.1(h), the issuance and sale of the Securities will not obligate the Company or any Subsidiary to issue shares of Common Stock or other securities to any Person (other than the Underwriters). Except as set forth in Schedule 3.1(h), there are no outstanding securities or instruments of the Company or any Subsidiary with any provision that adjusts the exercise, conversion, exchange or reset price of such security or instrument upon an issuance of securities by the Company or any Subsidiary. Except as a result of the purchase and sale of the Securities, or as set forth in Schedule 3.1(h), there are no outstanding securities or instruments of the Company or any Subsidiary that contain any redemption or similar provisions, and there are no contracts, commitments, understandings or arrangements by which the Company or any Subsidiary is or may become bound to redeem a security of the Company or such Subsidiary. The Company does not have any stock appreciation rights or "phantom stock" plans or agreements or any similar plan or agreement. All of the outstanding shares of capital stock of the Company are duly authorized, validly issued, fully paid and nonassessable, have been issued in compliance with all federal and state securities laws, and none of such outstanding shares was issued in violation of any preemptive rights or similar rights to subscribe for or purchase securities. The authorized shares of the Company conform in all material respects to all statements relating thereto contained in the Registration Statement and the Prospectus. The offers and sales of the Company's securities were at all relevant times either registered under the Securities Act and the applicable state securities or Blue Sky laws or, based in part on the representations and warranties of the purchasers, exempt from such registration requirements. No further approval or authorization of any stockholder, the Board of Directors or others is required for the issuance and sale of the Securities. Except for that certain Amended and Restated Voting Agreement dated August 27, 2021 entered into by and among Dong-A ST Co., Ltd., E&Investment, Inc., The E&Healthcare Investment Fund II, The E&Healthcare Investment Fund No. 6 and The E&Healthcare Investment Fund No. 7, there are no stockholders agreements, voting agreements or other similar agreements with respect to the Company's capital stock to which the Company is a party or, to the knowledge of the Company, between or among any of the Company's stockholders.

(i) SEC Reports; Financial Statements. The Company has filed all reports, schedules, forms, statements and other documents required to be filed by the Company under the Securities Act and the Exchange Act, including pursuant to Section 13(a) or 15(d) thereof, for the two years preceding the date hereof (or such shorter period as the Company was required by law or regulation to file such material) (the foregoing materials, including the exhibits thereto and documents incorporated by reference therein, together with the Prospectus and the Prospectus Supplement, being collectively referred to herein as the "SEC Reports") on a timely basis or has received a valid extension of such time of filing and has filed any such SEC Reports prior to the expiration of any such extension. As of their respective dates, the SEC Reports complied in all material respects with the requirements of the Securities Act and the Exchange Act, as applicable, and none of the SEC Reports, when filed, contained any untrue statement of a material fact or omitted to state a material fact required to be stated therein or necessary in order to make the statements therein, in the light of the circumstances under which they were made, not misleading. The financial statements of the Company included in the SEC Reports comply in all material respects with applicable accounting requirements and the rules and regulations of the Commission with respect thereto as in effect at the time of filing. Such financial statements have been prepared in accordance with United States generally accepted accounting principles applied on a consistent basis during the periods involved ("GAAP"), except as may be otherwise specified in such financial statements or the notes thereto and except that unaudited financial statements may not contain all footnotes required by GAAP, and fairly present in all material respects the financial position of the Company and its consolidated Subsidiaries as of and for the dates thereof and the results of operations and cash flows for the periods then ended, subject, in the case of unaudited statements, to normal, immaterial, year-end audit adjustments. The agreements and documents described in the Registration Statement, the Prospectus, the Prospectus Supplement and the SEC Reports conform to the descriptions thereof contained therein and there are no agreements or other documents required by the Securities Act and the rules and regulations thereunder to be described in the Registration Statement, the Prospectus, the Prospectus Supplement or the SEC Reports or to be filed with the Commission as exhibits to the Registration Statement, that have not been so described or filed. Each agreement or other instrument (however characterized or described) to which the Company is a party or by which it is or may be bound or affected and (i) that is referred to in the Registration Statement, the Prospectus, the Prospectus Supplement or the SEC Reports, or (ii) is material to the Company's business, has been duly authorized and validly executed by the Company, is in full force and effect in all material respects and is enforceable against the Company and, to the Company's knowledge, the other parties thereto, in accordance with its terms, except (x) as such enforceability may be limited by bankruptcy, insolvency, reorganization or similar laws affecting creditors' rights generally, (y) as enforceability of any indemnification or contribution provision may be limited under the federal and state securities laws, and (z) that the remedy of specific performance and injunctive and other forms of equitable relief may be subject to the equitable defenses and to the discretion of the court before which any proceeding therefore may be brought. None of such agreements or instruments has been assigned by the Company, and neither the Company nor, to the best of the Company's knowledge, any other party is in default thereunder and, to the best of the Company's knowledge, no event has occurred that, with the lapse of time or the giving of notice, or both, would constitute a default thereunder. To the best of the Company's knowledge, performance by the Company of the material provisions of such agreements or instruments will not result in a violation of any existing applicable law, rule, regulation, judgment, order or decree of any governmental agency or court, domestic or foreign, having jurisdiction over the Company or any of its assets or businesses, including, without limitation, those relating to environmental laws and regulations.

(j) Material Changes; Undisclosed Events, Liabilities or Developments. Since the date of the latest audited financial statements included within the SEC Reports, except as specifically disclosed in a subsequent SEC Report filed prior to the date hereof, (i) there has been no event, occurrence or development that has had or that could reasonably be expected to result in a Material Adverse Effect, (ii) the Company has not incurred any material liabilities (contingent or otherwise) other than (A) trade payables and accrued expenses incurred in the ordinary course of business consistent with past practice and (B) liabilities not required to be reflected in the Company's financial statements pursuant to GAAP or disclosed in filings made with the Commission, (iii) the Company has not altered its method of accounting, (iv) the Company has not declared or made any dividend or distribution of cash or other property to its stockholders or purchased, redeemed or made any agreements to purchase or redeem any shares of its capital stock, (v) the Company has not issued any equity securities to any officer, director or Affiliate, except pursuant to existing Company equity compensation plans and (vi) no officer or director of the Company has resigned from any position with the Company. The Company does not have pending before the Commission any request for confidential treatment of information. Except for the issuance of the Securities contemplated by this Agreement, no event, liability, fact, circumstance, occurrence or development has occurred or exists or is reasonably expected to occur or exist with respect to the Company or its Subsidiaries or their respective businesses, prospects, properties, operations, assets or financial condition that would be required to be disclosed by the Company under applicable securities laws at the time this representation is made or deemed made that has not been publicly disclosed at least 1 Trading Day prior to the date that this representation is made. Unless otherwise disclosed in an SEC Report filed prior to the date hereof, the Company has not: (i) issued any securities or incurred any liability or obligation, direct or contingent, for borrowed money; or (ii) declared or paid any dividend or made any other distribution on or in respect to its capital stock.

(k) Litigation. There is no action, suit, inquiry, notice of violation, proceeding or investigation pending or, to the knowledge of the Company, threatened against or affecting the Company, any Subsidiary or any of their respective properties before or by any court, arbitrator, governmental or administrative agency or regulatory authority (federal, state, county, local or foreign) (collectively, an "Action") which (i) adversely affects or challenges the legality, validity or enforceability of any of the Transaction Documents or the Securities or (ii) could, if there were an unfavorable decision, have or reasonably be expected to result in a Material Adverse Effect. Neither the Company nor any Subsidiary, nor any director or officer thereof, is or has been the subject of any Action involving a claim of violation of or liability under federal or state securities laws or a claim of breach of fiduciary duty. There has not been, and to the knowledge of the Company, there is not pending or contemplated, any investigation by the Commission involving the Company or any current or former director or officer of the Company. The Commission has not issued any stop order or other order suspending the effectiveness of any registration statement filed by the Company or any Subsidiary under the Exchange Act or the Securities Act.

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

(m) Compliance. Neither the Company nor any Subsidiary: (i) is in default under or in violation of (and no event has occurred that has not been waived that, with notice or lapse of time or both, would result in a default by the Company or any Subsidiary under), nor has the Company or any Subsidiary received notice of a claim that it is in default under or that it is in violation of, any indenture, loan or credit agreement or any other agreement or instrument to which it is a party or by which it or any of its properties is bound (whether or not such default or violation has been waived), (ii) is in violation of any judgment, decree or order of any court, arbitrator or other governmental authority or (iii) is or has been in violation of any statute, rule, ordinance or regulation of any governmental authority, including without limitation all foreign, federal, state and local laws relating to taxes, environmental protection, occupational health and safety, product quality and safety and employment and labor matters, except in each case as could not have or reasonably be expected to result in a Material Adverse Effect.

(n) Regulatory Permits. The Company and the Subsidiaries possess all certificates, authorizations and permits issued by the appropriate federal, state, local or foreign regulatory authorities necessary to conduct their respective businesses as described in the SEC Reports, except where the failure to possess such permits could not reasonably be expected to result in a Material Adverse Effect (each, a "Material Permit"), and neither the Company nor any Subsidiary has received any notice of proceedings relating to the revocation or modification of any Material Permit. The disclosures in the Registration Statement concerning the effects of Federal, State, local and all foreign regulation on the Company's business as currently contemplated are correct in all material respects.

(o) Title to Assets. The Company and the Subsidiaries have good and marketable title in fee simple to, or have valid and marketable rights to lease or otherwise use, all real property and all personal property (excluding Intellectual Property Rights, which are addressed below) that is material to the business of the Company and the Subsidiaries, in each case free and clear of all Liens, except for (i) Liens as do not materially affect the value of such property and do not materially interfere with the use made and proposed to be made of such property by the Company and the Subsidiaries and (ii) Liens for the payment of federal, state or other taxes, for which appropriate reserves have been made therefor in accordance with GAAP, and the payment of which is neither delinquent nor subject to penalties. Any real property and facilities held under lease by the Company and the Subsidiaries are held by them under valid, subsisting and enforceable leases with which the Company and the Subsidiaries are in compliance, except where failure to be in compliance could not reasonably be expected to have a Material Adverse Effect.

(p) Intellectual Property. The Company and the Subsidiaries have, or have rights to use, all patents, patent applications, trademarks, trademark applications, service marks, trade names, trade secrets, inventions, copyrights, licenses and other intellectual property rights and similar rights necessary or required for use in connection with their respective businesses as described in the SEC Reports and which the failure to do so could have a Material Adverse Effect (collectively, the "Intellectual Property Rights"). None of, and neither the Company nor any Subsidiary has received a notice (written or otherwise) that any of, the Intellectual Property Rights has expired, terminated or been abandoned, or is expected to expire or terminate or be abandoned, within two (2) years from the date of this Agreement. Neither the Company nor any Subsidiary has received, since the date of the latest audited financial statements included within the SEC Reports, a written notice of a claim or otherwise has any knowledge that the Intellectual Property Rights violate or infringe upon the rights of any Person, except where failure to do so could not, individually or in the aggregate, reasonably be expected to have a Material Adverse Effect. To the knowledge of the Company, all such Intellectual Property Rights are enforceable and there is no existing infringement by another Person of any of the Intellectual Property Rights. The Company and its Subsidiaries have taken reasonable security measures to protect the secrecy, confidentiality and value of all of their intellectual properties, except where failure to do so could not, individually or in the aggregate, reasonably be expected to have a Material Adverse Effect.

(q) Insurance. The Company and the Subsidiaries are insured by insurers of recognized financial responsibility against such losses and risks and in such amounts as are prudent and customary in the businesses in which the Company and the Subsidiaries are engaged, including, but not limited to, directors and officers insurance coverage. Neither the Company nor any Subsidiary has any reason to believe that it will not be able to renew its existing insurance coverage as and when such coverage expires or to obtain similar coverage from similar insurers as may be necessary to continue its business without a significant increase in cost.

(r) Transactions With Affiliates and Employees. Except as set forth in the Registration Statement, the Prospectus, the Prospectus Supplement or the SEC Reports, none of the officers or directors of the Company or any Subsidiary and, to the knowledge of the Company, none of the employees of the Company or any Subsidiary is presently a party to any transaction with the Company or any Subsidiary (other than for services as employees, officers and directors), including any contract, agreement or other arrangement providing for the furnishing of services to or by, providing for rental of real or personal property to or from, providing for the borrowing of money from or lending of money to or otherwise requiring payments to or from, any officer, director or such employee or, to the knowledge of the Company, any entity in which any officer, director, or any such employee has a substantial interest or is an officer, director, trustee, stockholder, member or partner, in each case in excess of $120,000 other than for (i) payment of salary, bonus or consulting fees for services rendered, (ii) reimbursement for expenses incurred on behalf of the Company and (iii) other employee benefits, including equity based award agreements under any equity compensation plan of the Company.

(s) Sarbanes-Oxley; Internal Accounting Controls. The Company and the Subsidiaries are in compliance in all material respects with any and all applicable requirements of the Sarbanes-Oxley Act of 2002 that are effective as of the date hereof, and any and all applicable rules and regulations promulgated by the Commission thereunder that are effective as of the date hereof and as of the Closing Date. Subject to the material weaknesses identified in the SEC Reports, the Company and the Subsidiaries maintain a system of internal accounting controls sufficient to provide reasonable assurance that: (i) transactions are executed in accordance with management's general or specific authorizations, (ii) transactions are recorded as necessary to permit preparation of financial statements in 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. The Company and the Subsidiaries have established disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) for the Company and the Subsidiaries and designed such disclosure controls and procedures to ensure that information required to be disclosed by the Company in the reports it files or submits under the Exchange Act is recorded, processed, summarized and reported, within the time periods specified in the Commission's rules and forms. The Company's certifying officers have evaluated the effectiveness of the disclosure controls and procedures of the Company and the Subsidiaries as of the end of the period covered by the most recently filed periodic report under the Exchange Act (such date, the "Evaluation Date"). The Company presented in its most recently filed periodic report under the Exchange Act the conclusions of the certifying officers about the effectiveness of the disclosure controls and procedures based on their evaluations as of the Evaluation Date. Since the Evaluation Date, there have been no changes in the internal control over financial reporting (as such term is defined in the Exchange Act) of the Company and its Subsidiaries that have materially affected, or is reasonably likely to materially affect, the internal control over financial reporting of the Company and its Subsidiaries.

(t) Certain Fees. Except as set forth in the Prospectus, no brokerage or finder's fees or commissions are or will be payable by the Company, any Subsidiary or Affiliate of the Company to any broker, financial advisor or consultant, finder, placement agent, investment banker, bank or other Person with respect to the transactions contemplated by the Transaction Documents. To the Company's knowledge, there are no other arrangements, agreements or understandings of the Company or, to the Company's knowledge, any of its stockholders that may affect the Underwriters' compensation, as determined by FINRA. Except as disclosed in the SEC Reports, the Company has not made any direct or indirect payments (in cash, securities or otherwise) to: (i) any person, as a finder's fee, consulting fee or otherwise, in consideration of such person raising capital for the Company or introducing to the Company persons who raised or provided capital to the Company; (ii) any FINRA member; or (iii) any person or entity that has any direct or indirect affiliation or association with any FINRA member, within the twelve months prior to the Execution Date. None of the net proceeds of the Offering will be paid by the Company to any participating FINRA member or its affiliates, except as specifically authorized herein.

(u) Investment Company. The Company is not, and is not an Affiliate of, and immediately after receipt of payment for the Securities will not be or be an Affiliate of, an "investment company" within the meaning of the Investment Company Act of 1940, as amended. The Company shall conduct its business in a manner so that it will not become an "investment company" subject to registration under the Investment Company Act of 1940, as amended.

(v) Registration Rights. Except as contemplated by the terms and conditions of that certain Registration Rights Agreement entered into by the Company pursuant to the terms and conditions of the Securities Purchase Agreement (the "Registration Rights Agreement"), no Person has any right to cause the Company or any Subsidiary to effect the registration under the Securities Act of any securities of the Company or any Subsidiary.

(w) Listing and Maintenance Requirements. The Common Stock is registered pursuant to Section 12(b) of the Exchange Act, and the Company has taken no action designed to, or which to its knowledge is likely to have the effect of, terminating the registration of the Common Stock under the Exchange Act nor has the Company received any notification that the Commission is contemplating terminating such registration. Except as disclosed in the SEC Reports, the Registration Statement, the Prospectus or the Prospectus Supplement, the Company has not, in the 12 months preceding the date hereof, received notice from any Trading Market on which the Common Stock is or has been listed or quoted to the effect that the Company is not in compliance with the listing or maintenance requirements of such Trading Market. The Company is, and, following the Closing hereunder, has no reason to believe that it will not in the foreseeable future continue to be, in compliance with all such listing and maintenance requirements. The Common Stock is currently eligible for electronic transfer through the Depository Trust Company or another established clearing corporation and the Company is current in payment of the fees of the Depository Trust Company (or such other established clearing corporation) in connection with such electronic transfer.

(x) Application of Takeover Protections. The Company and the Board of Directors have taken all necessary action, if any, in order to render inapplicable any control share acquisition, business combination, poison pill (including any distribution under a rights agreement) or other similar anti-takeover provision under the Company's certificate of incorporation (or similar charter documents) or the laws of its state of incorporation that is or could become applicable as a result of the Underwriters and the Company fulfilling their obligations or exercising their rights under the Transaction Documents.

(y) Disclosure; 10b-5. The Registration Statement (and any further documents to be filed with the Commission in connection with the Offering) contains all exhibits and schedules as required by the Securities Act. Each of the Registration Statement and any post-effective amendment thereto, if any, at the time it became effective, complied in all material respects with the Securities Act and the Exchange Act and the applicable rules and regulations under the Securities Act and did not and, as amended or supplemented, if applicable, will not, contain any untrue statement of a material fact or omit to state a material fact required to be stated therein or necessary to make the statements therein not misleading. The Preliminary Prospectus, Prospectus and the Prospectus Supplement, each as of its respective date, comply in all material respects with the Securities Act and the Exchange Act and the applicable rules and regulations. Each of the Preliminary Prospectus, Prospectus and the Prospectus Supplement, as amended or supplemented, did not and will not contain as of the date thereof any untrue statement of a material fact or omit to state a material fact necessary in order to make the statements therein, in light of the circumstances under which they were made, not misleading. The SEC Reports, when they were filed with the Commission, conformed in all material respects to the requirements of the Exchange Act and the applicable rules and regulations, and none of such documents, when they were filed with the Commission, contained any untrue statement of a material fact or omitted to state a material fact necessary to make the statements therein (with respect to the SEC Reports incorporated by reference in the Preliminary Prospectus, Prospectus or Prospectus Supplement), in light of the circumstances under which they were made not misleading; and any further documents so filed and incorporated by reference in the Preliminary Prospectus, Prospectus or Prospectus Supplement, when such documents are filed with the Commission, will conform in all material respects to the requirements of the Exchange Act and the applicable rules and regulations, as applicable, and will not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements therein, in light of the circumstances under which they were made not misleading. No post-effective amendment to the Registration Statement reflecting any facts or events arising after the date thereof which represent, individually or in the aggregate, a fundamental change in the information set forth therein is required to be filed with the Commission as of the date this representation is made, including the Closing Date and the Option Closing Date, if any. There are no documents required to be filed with the Commission in connection with the transaction contemplated hereby that (x) have not been filed as required pursuant to the Securities Act or (y) will not be filed within the requisite time period. There are no contracts or other documents required to be described in the Preliminary Prospectus, Prospectus or Prospectus Supplement, or to be filed as exhibits or schedules to the Registration Statement, which have not been described or filed as required. The press releases disseminated by the Company during the twelve months preceding the date of this Agreement taken as a whole do not contain any untrue statement of a material fact or omit to state a material fact required to be stated therein or necessary in order to make the statements therein, in light of the circumstances under which they were made and when made, not misleading.

(z) No Integrated Offering. Neither the Company, nor any of its Affiliates, nor any Person acting on its or their behalf has, directly or indirectly, made any offers or sales of any security or solicited any offers to buy any security, under circumstances that would cause this offering of the Securities to be integrated with prior offerings by the Company for purposes of any applicable shareholder approval provisions of any Trading Market on which any of the securities of the Company are listed or designated.

(aa) Solvency. Based on the consolidated financial condition of the Company as of the Closing Date, after giving effect to the receipt by the Company of the proceeds from the sale of the Securities hereunder, (i) the fair saleable value of the Company's assets exceeds the amount that will be required to be paid on or in respect of the Company's existing debts and other liabilities (including known contingent liabilities) as they mature, (ii) the Company's assets do not constitute unreasonably small capital to carry on its business as now conducted and as proposed to be conducted including its capital needs taking into account the particular capital requirements of the business conducted by the Company, consolidated and projected capital requirements and capital availability thereof, and (iii) the current cash flow of the Company, together with the proceeds the Company would receive, were it to liquidate all of its assets, after taking into account all anticipated uses of the cash, would be sufficient to pay all amounts on or in respect of its liabilities when such amounts are required to be paid. The Company does not intend to incur debts beyond its ability to pay such debts as they mature (taking into account the timing and amounts of cash to be payable on or in respect of its debt). The Company has no knowledge of any facts or circumstances which lead it to believe that it will file for reorganization or liquidation under the bankruptcy or reorganization laws of any jurisdiction within one year from the Closing Date. The SEC Reports set forth as of the date hereof all outstanding secured and unsecured Indebtedness of the Company or any Subsidiary, or for which the Company or any Subsidiary has commitments. Neither the Company nor any Subsidiary is in default with respect to any Indebtedness.

(bb) Tax Status. Except for matters that would not, individually or in the aggregate, have or reasonably be expected to result in a Material Adverse Effect, the Company and its Subsidiaries each (i) has made or filed, or secured all extensions for the filing of, all applicable United States federal, state and local income and all foreign income and franchise tax returns, reports and declarations required to be filed through the date hereof in any jurisdiction to which it is subject, (ii) has paid all taxes and other governmental assessments and charges that are material in amount, shown or determined to be due on such returns, reports and declarations and (iii) has set aside on its books provision reasonably adequate for the payment of all material taxes for periods subsequent to the periods to which such returns, reports or declarations apply. There are no unpaid taxes in any material amount claimed to be due by the taxing authority of any jurisdiction, and the officers of the Company or of any Subsidiary know of no basis for any such claim. The provisions for taxes payable, if any, shown on the financial statements filed with or as part of the Registration Statement are sufficient for all material accrued and unpaid taxes, whether or not disputed, and for all periods to and including the dates of such consolidated financial statements. The term "taxes" means all federal, state, local, foreign, and other net income, gross income, gross receipts, sales, use, ad valorem, transfer, franchise, profits, license, lease, service, service use, withholding, payroll, employment, excise, severance, stamp, occupation, premium, property, windfall profits, customs, duties or other taxes, fees, assessments, or charges of any kind whatsoever, together with any interest and any penalties, additions to tax, or additional amounts with respect thereto. The term "returns" means all returns, declarations, reports, statements, and other documents required to be filed in respect to taxes.

(cc) Foreign Corrupt Practices. Neither the Company nor any Subsidiary, nor to the knowledge of the Company or any Subsidiary, any agent or other person acting on behalf of the Company or any Subsidiary, has (i) directly or indirectly, used any funds for unlawful contributions, gifts, entertainment or other unlawful expenses related to foreign or domestic political activity, (ii) made any unlawful payment to foreign or domestic government officials or employees or to any foreign or domestic political parties or campaigns from corporate funds, (iii) failed to disclose fully any contribution made by the Company or any Subsidiary (or made by any person acting on its behalf of which the Company is aware) which is in violation of law, or (iv) violated in any material respect any provision of FCPA. The Company has taken reasonable steps to ensure that its accounting controls and procedures are sufficient to cause the Company to comply in all material respects with the FCPA.

(dd) Accountants. To the knowledge and belief of the Company, the Company Auditor (i) is an independent registered public accounting firm as required by the Exchange Act and (ii) shall express its opinion with respect to the financial statements to be included in the Company's Annual Report for the fiscal year ending December 31, 2022. The Company Auditor has not, during the periods covered by the financial statements included in the Prospectus, provided to the Company any non-audit services, as such term is used in Section 10A(g) of the Exchange Act.

(ee) FDA. As to each product subject to the jurisdiction of the U.S. Food and Drug Administration ("FDA") under the Federal Food, Drug and Cosmetic Act, as amended, and the regulations thereunder ("FDCA") that is manufactured, packaged, labeled, tested, distributed, sold, and/or marketed by the Company or any of its Subsidiaries (each such product, a "Pharmaceutical Product"), such Pharmaceutical Product is being manufactured, packaged, labeled, tested, distributed, sold and/or marketed by the Company in compliance with all applicable requirements under FDCA and similar laws, rules and regulations relating to registration, investigational use, premarket clearance, licensure, or application approval, good manufacturing practices, good laboratory practices, good clinical practices, product listing, quotas, labeling, advertising, record keeping and filing of reports, except where the failure to be in compliance would not have a Material Adverse Effect. There is no pending, completed or, to the Company's knowledge, threatened, action (including any lawsuit, arbitration, or legal or administrative or regulatory proceeding, charge, complaint, or investigation) against the Company or any of its Subsidiaries, and none of the Company or any of its Subsidiaries has received any notice, warning letter or other communication from the FDA or any other governmental entity, which (i) contests the premarket clearance, licensure, registration, or approval of, the uses of, the distribution of, the manufacturing or packaging of, the testing of, the sale of, or the labeling and promotion of any Pharmaceutical Product, (ii) withdraws its approval of, requests the recall, suspension, or seizure of, or withdraws or orders the withdrawal of advertising or sales promotional materials relating to, any Pharmaceutical Product, (iii) imposes a clinical hold on any clinical investigation by the Company or any of its Subsidiaries, (iv) enjoins production at any facility of the Company or any of its Subsidiaries, (v) enters or proposes to enter into a consent decree of permanent injunction with the Company or any of its Subsidiaries, or (vi) otherwise alleges any violation of any laws, rules or regulations by the Company or any of its Subsidiaries, and which, either individually or in the aggregate, would have a Material Adverse Effect. The properties, business and operations of the Company have been and are being conducted in all material respects in accordance with all applicable laws, rules and regulations of the FDA. Except as set forth in Schedule 3.1(ee), the Company has not been informed by the FDA that the FDA will prohibit the marketing, sale, license or use in the United States of any product proposed to be developed, produced or marketed by the Company nor has the FDA expressed any concern as to approving or clearing for marketing any product being developed or proposed to be developed by the Company.

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

(gg) Office of Foreign Assets Control. Neither the Company nor any Subsidiary nor, to the Company's knowledge, any director, officer, agent, employee or affiliate of the Company or any Subsidiary is currently subject to any U.S. sanctions administered by the Office of Foreign Assets Control of the U.S. Treasury Department.

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

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

(jj) Money Laundering. The operations of the Company and its Subsidiaries are and have been conducted at all times in substantial compliance with applicable financial record-keeping and reporting requirements of the Currency and Foreign Transactions Reporting Act of 1970, as amended, applicable money laundering statutes and applicable rules and regulations thereunder (collectively, the "Money Laundering Laws"), and no Action or Proceeding by or before any court or governmental agency, authority or body or any arbitrator involving the Company or any Subsidiary with respect to the Money Laundering Laws is pending or, to the knowledge of the Company or any Subsidiary, threatened.

(kk) D&O Questionnaires. To the Company's knowledge, all information contained in the questionnaires completed by each of the Company's directors and officers immediately prior to the Offering and in the Lock-Up Agreement provided to the Underwriters in connection with the Offering is true and correct in all material respects and the Company has not become aware of any information which would cause the information disclosed in such questionnaires become inaccurate and incorrect.

(ll) FINRA Affiliation. To the Company's knowledge, no officer, director or any beneficial owner of 5% or more of the Company's unregistered securities has any direct or indirect affiliation or association with any FINRA member (as determined in accordance with the rules and regulations of FINRA) that is participating in the Offering. The Company will advise the Representative and EGS if it learns that any officer, director or owner of 5% or more of the Company's outstanding shares of Common Stock or Common Stock Equivalents is or becomes an affiliate or associated person of a FINRA member firm.

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

(nn) Board of Directors. The Board of Directors is comprised of the persons set forth in the Company's Schedule 14A filed with the Commission on May 18, 2022. The qualifications of the persons serving as board members and the overall composition of the Board of Directors comply with the Sarbanes-Oxley Act of 2002 and the rules promulgated thereunder applicable to the Company and the rules of the Trading Market. At least one member of the Board of Directors qualifies as a "financial expert" as such term is defined under the Sarbanes-Oxley Act of 2002 and the rules promulgated thereunder and the rules of the Trading Market. In addition, at least a majority of the persons serving on the Board of Directors qualify as "independent" as defined under the rules of the Trading Market.

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

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

ARTICLE IV.
OTHER AGREEMENTS OF THE PARTIES

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

4.2 Federal Securities Laws.

(a) Compliance. During the time when a Prospectus is required to be delivered under the Securities Act, the Company will use its reasonable best efforts to comply with all requirements imposed upon it by the Securities Act and the rules and regulations thereunder and the Exchange Act and the rules and regulations thereunder, as from time to time in force, so far as necessary to permit the continuance of sales of or dealings in the Securities in accordance with the provisions hereof and the Prospectus. If at any time when a Prospectus relating to the Securities is required to be delivered under the Securities Act, any event shall have occurred as a result of which, in the opinion of counsel for the Company or counsel for the Underwriters, the Prospectus, as then amended or supplemented, includes an untrue statement of a material fact or omits to state any material fact required to be stated therein or necessary to make the statements therein, in light of the circumstances under which they were made, not misleading, or if it is necessary at any time to amend the Prospectus to comply with the Securities Act, the Company will notify the Underwriters promptly and prepare and file with the Commission, subject to Section 4.1 hereof, an appropriate amendment or supplement in accordance with Section 10 of the Securities Act.

(b) Filing of Final Prospectus. The Company will file the Prospectus (in form and substance reasonably satisfactory to the Representative) with the Commission pursuant to the requirements of Rule 424.

(c) Exchange Act Registration. For a period of three years from the Execution Date: (i) the Company will use its best efforts to maintain the registration of the Common Stock under the Exchange Act; and (ii) the Company will not deregister the Common Stock under the Exchange Act without the prior written consent of the Representative, subject to the exercise of the Board of Directors' fiduciary duties.

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

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

4.4 Effectiveness and Events Requiring Notice to the Underwriters. The Company will use its reasonable best efforts to cause the Registration Statement to remain effective with a current prospectus until the later of nine (9) months from the Execution Date and the date on which the Warrants are no longer outstanding, and will notify the Underwriters and holders of the Warrants promptly and confirm the notice in writing: (i) of the effectiveness of the Registration Statement and any amendment thereto; (ii) of the issuance by the Commission of any stop order or of the initiation, or the threatening, of any proceeding for that purpose; (iii) of the issuance by any state securities commission of any proceedings for the suspension of the qualification of the Securities for offering or sale in any jurisdiction or of the initiation, or the threatening, of any proceeding for that purpose; (iv) of the mailing and delivery to the Commission for filing of any amendment or supplement to the Registration Statement or Prospectus, provided that the filing of an amendment or supplement to the Registration Statement on the SEC's EDGAR system shall be deemed to be such notification; (v) of the receipt of any comments or request for any additional information from the Commission; and (vi) of the happening of any event during the period described in this Section 4.4 that, in the judgment of the Company, causes the Registration Statement or the Prospectus, as the case may be, to include an untrue statement of material fact or omit to state a material fact necessary in order to make the statements therein, in light of the circumstances under which they were made, not misleading. If the Commission or any state securities commission shall enter a stop order or suspend such qualification at any time, the Company will make every reasonable effort to obtain promptly the lifting of such order.

4.5 Expenses of the Offering.

(a) General Expenses Related to the Offering. The Company hereby agrees to pay on each of the Closing Date and each Option Closing Date, if any, to the extent not paid at the Closing Date, all expenses incident to the performance of the obligations of the Company under this Agreement, including, but not limited to: (a) all filing fees and communication expenses relating to the registration of the Securities to be sold in the Offering (including the Option Securities) with the Commission; (b) all FINRA Public Offering Filing System fees associated with the review of the Offering by FINRA; (c) all fees and expenses relating to the listing of such Closing Shares, Option Shares and Underlying Shares on the Trading Market and such other stock exchanges as the Company and the Representative together determine; (d) all fees, expenses and disbursements relating to the registration or qualification of such Securities under the "blue sky" securities laws of such states and other foreign jurisdictions as the Representative may reasonably designate (including, without limitation, all filing and registration fees, and the fees and expenses of Blue Sky counsel); (e) the costs of all mailing and printing of the underwriting documents (including, without limitation, the Underwriting Agreement, any Blue Sky Surveys and, if appropriate, any Agreement Among Underwriters, Selected Dealers' Agreement, Underwriters' Questionnaire and Power of Attorney), Registration Statements, Prospectuses and all amendments, supplements and exhibits thereto and as many preliminary and final Prospectuses as the Representative may reasonably deem necessary; (f) the costs and expenses of the Company's public relations firm; (g) the costs of preparing, printing and delivering the Securities; (h) fees and expenses of the Transfer Agent for the Securities (including, without limitation, any fees required for same-day processing of any instruction letter delivered by the Company and fees and expenses pursuant to the Warrant Agency Agreement and the Preferred Stock Agency Agreement); (i) stock transfer and/or stamp taxes, if any, payable upon the transfer of securities from the Company to the Underwriters; (j) the fees and expenses of the Company's accountants; (k) the fees and expenses of the Company's legal counsel and other agents and representatives; (l) the Underwriters' costs of mailing prospectuses to prospective investors; (m) the costs associated with advertising the Offering in the national editions of the Wall Street Journal and New York Times after the Closing Date. The Underwriters may also deduct from the net proceeds of the Offering payable to the Company on the Closing Date, or each Option Closing Date, if any, the expenses set forth herein to be paid by the Company to the Underwriters.

(b) Expenses of the Representative. The Company further agrees that, in addition to the expenses payable pursuant to Section 4.5(a), on the Closing Date it will pay to the Representative (i) a management fee equal to 0.50% of the aggregate gross proceeds of the Offering (and a management fee equal to 0.50% of the aggregate gross proceeds on each Option Closing Date, if any) and (ii) all reasonable and documented, out-of-pocket expenses incurred, including travel, databases, fees and disbursements of legal counsel, and of other consultants and advisors not to exceed $145,000 without the Company's prior consent by deduction from the proceeds of the Offering contemplated herein. For the avoidance of doubt, the maximum amount of expenses to be incurred by the Representative in connection with the Offering shall be $145,000.

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

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

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

4.9 Internal Controls. Subject to the material weaknesses described in the SEC Reports, the Company will maintain a system of internal accounting controls sufficient to provide reasonable assurances that: (i) transactions are executed in accordance with management's general or specific authorization; (ii) transactions are recorded as necessary in order to permit preparation of financial statements in accordance with GAAP and to maintain accountability for assets; (iii) access to assets is permitted only in accordance with management's general or specific authorization; and (iv) the recorded accountability for assets is compared with existing assets at reasonable intervals and appropriate action is taken with respect to any differences.

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

4.11 FINRA. The Company shall advise the Underwriters (who shall make an appropriate filing with FINRA) if it is aware that any 5% or greater shareholder of the Company becomes an affiliate or associated person of an Underwriter.

4.12 No Fiduciary Duties. The Company acknowledges and agrees that the Underwriters' responsibility to the Company is solely contractual and commercial in nature, based on arms-length negotiations and that neither the Underwriters nor their affiliates or any selected dealer shall be deemed to be acting in a fiduciary capacity, or otherwise owes any fiduciary duty to the Company or any of its affiliates in connection with the Offering and the other transactions contemplated by this Agreement. Notwithstanding anything in this Agreement to the contrary, the Company acknowledges that the Underwriters may have financial interests in the success of the Offering that are not limited to the difference between the price to the public and the purchase price paid to the Company by the Underwriters for the shares and the Underwriters have no obligation to disclose, or account to the Company for, any of such additional financial interests. The Company hereby waives and releases, to the fullest extent permitted by law, any claims that the Company may have against the Underwriters with respect to any breach or alleged breach of fiduciary duty.

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

4.14 Board Composition and Board Designations. The Company shall ensure that: (i) the qualifications of the persons serving as board members and the overall composition of the Board of Directors comply with the Sarbanes-Oxley Act of 2002 and the rules promulgated thereunder and with the listing requirements of the Trading Market and (ii) if applicable, at least one member of the Board of Directors qualifies as a "financial expert" as such term is defined under the Sarbanes-Oxley Act of 2002 and the rules promulgated thereunder.

4.15 Securities Laws Disclosure; Publicity. At the request of the Representative, by 9:00 a.m. (New York City time) on the date hereof, the Company shall issue a press release disclosing the material terms of the Offering. The Company and the Representative shall consult with each other in issuing any other press releases with respect to the Offering, and neither the Company nor any Underwriter shall issue any such press release nor otherwise make any such public statement without the prior consent of the Company, with respect to any press release of such Underwriter, or without the prior consent of such Underwriter, with respect to any press release of the Company, which consent shall not unreasonably be withheld or delayed, except if such disclosure is required by law, in which case the disclosing party shall promptly provide the other party with prior notice of such public statement or communication. The Company will not issue press releases or engage in any other publicity, without the Representative's prior written consent, for a period ending at 5:00 p.m. (New York City time) on the first business day following the 45th day following the Closing Date, other than normal and customary releases issued in the ordinary course of the Company's business.

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

4.17 Reservation of Common Stock. As of the date hereof, the Company has reserved and the Company shall continue to reserve and keep available at all times, free of preemptive rights, a sufficient number of shares of Common Stock for the purpose of enabling the Company to issue Shares, Conversion Shares, and Option Shares pursuant to this Agreement and a sufficient number of shares of Common Stock for the purpose of enabling the Company to issue the Warrant Shares pursuant to any exercise of the Warrants.

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

4.19 Subsequent Equity Sales.

(a) From the date hereof until ninety (90) days following the Closing Date, neither the Company nor any Subsidiary shall issue, enter into any agreement to issue or announce the issuance or proposed issuance of any shares of Common Stock or Common Stock Equivalents or file any registration statement or amendment or supplement thereto, other than the Prospectus or in connection with fulfilling the Company's obligations under the terms and conditions of the Registration Rights Agreement or in connection with registering shares of the Common Stock or Common Stock Equivalents on a Form S-8.

(b) From the date hereof until the nine (9) month anniversary of the Closing Date, the Company shall be prohibited from effecting or entering into an agreement to effect any issuance by the Company or any of its Subsidiaries of Common Stock or Common Stock Equivalents (or a combination of units thereof) involving a Variable Rate Transaction. "Variable Rate Transaction" means a transaction in which the Company (i) issues or sells any debt or equity securities that are convertible into, exchangeable or exercisable for, or include the right to receive, additional shares of Common Stock either (A) at a conversion price, exercise price or exchange rate or other price that is based upon, and/or varies with, the trading prices of or quotations for the shares of Common Stock at any time after the initial issuance of such debt or equity securities or (B) with a conversion, exercise or exchange price that is subject to being reset at some future date after the initial issuance of such debt or equity security or upon the occurrence of specified or contingent events directly or indirectly related to the business of the Company or the market for the Common Stock or (ii) enters into, or effects a transaction under, any agreement, including, but not limited to, an equity line of credit 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; provided however, that after ninety (90) days following the Closing Date, the Company's issuance of shares of Common Stock pursuant to an at-the-market offering facility with the Representative shall not be deemed a Variable Rate Transaction hereunder. Any Underwriter shall be entitled to obtain injunctive relief against the Company to preclude any such issuance, which remedy shall be in addition to any right to collect damages.

(c) Notwithstanding the foregoing, this Section 4.19 shall not apply in respect of an Exempt Issuance, except that no Variable Rate Transaction shall be an Exempt Issuance.

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

ARTICLE V.
DEFAULT BY UNDERWRITERS

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

ARTICLE VI.
INDEMNIFICATION

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

6.2 Procedure. If any action is brought against an Underwriter, a Selected Dealer or a Controlling Person in respect of which indemnity may be sought against the Company pursuant to Section 6.1, such Underwriter, such Selected Dealer or Controlling Person, as the case may be, shall promptly notify the Company in writing of the institution of such action and the Company shall assume the defense of such action, including the employment and fees of counsel (subject to the reasonable approval of such Underwriter or such Selected Dealer, as the case may be) and payment of actual expenses. Such Underwriter, such Selected Dealer or Controlling Person shall have the right to employ its or their own counsel in any such case, but the fees and expenses of such counsel shall be at the expense of such Underwriter, such Selected Dealer or Controlling Person unless (i) the employment of such counsel at the expense of the Company shall have been authorized in writing by the Company in connection with the defense of such action, or (ii) the Company shall not have employed counsel to have charge of the defense of such action, or (iii) such indemnified party or parties shall have reasonably concluded that there may be defenses available to it or them which are different from or additional to those available to the Company (in which case the Company shall not have the right to direct the defense of such action on behalf of the indemnified party or parties), in any of which events the reasonable fees and expenses of not more than one additional firm of attorneys selected by such Underwriter (in addition to local counsel), Selected Dealer and/or Controlling Person shall be borne by the Company. Notwithstanding anything to the contrary contained herein, if any Underwriter, Selected Dealer or Controlling Person shall assume the defense of such action as provided above, the Company shall have the right to approve the terms of any settlement of such action which approval shall not be unreasonably withheld.

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

6.4 Contribution.

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

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

ARTICLE VII.
MISCELLANEOUS

7.1 Termination.

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

(b) Expenses. In the event this Agreement shall be terminated pursuant to Section 7.1(a), within the time specified herein or any extensions thereof pursuant to the terms herein, the Company shall be obligated to pay to the Representative its actual and accountable reasonable and documented out of pocket expenses related to the transactions contemplated herein then due and payable, including the fees and disbursements of EGS up to $35,000.00 (provided, however, that such expense cap in no way limits or impairs the indemnification and contribution provisions of this Agreement).

(c) Indemnification. Notwithstanding any contrary provision contained in this Agreement, any election hereunder or any termination of this Agreement, and whether or not this Agreement is otherwise carried out, the provisions of Article VI shall not be in any way effected by such election or termination or failure to carry out the terms of this Agreement or any part hereof.

7.2 Entire Agreement. The Transaction Documents, together with the exhibits and schedules thereto, the Prospectus and the Prospectus Supplement, contain the entire understanding of the parties with respect to the subject matter hereof and thereof and supersede all prior agreements and understandings, oral or written, with respect to such matters, which the parties acknowledge have been merged into such documents, exhibits and schedules. Notwithstanding anything herein to the contrary, the Investment Banking Agreement, dated August 9, 2022 ("Engagement Agreement"), by and between the Company and the Representative, shall continue to be effective and the terms therein, including, without limitation, Section 4(c) and Section 5 with respect to any future offerings, shall continue to survive and be enforceable by the Representative in accordance with its terms, provided that, in the event of a conflict between the terms of the Engagement Agreement and this Agreement, the terms of this Agreement shall prevail.

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

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

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

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

7.7 Governing Law. All questions concerning the construction, validity, enforcement and interpretation of the Transaction Documents shall be governed by and construed and enforced in accordance with the internal laws of the State of New York, without regard to the principles of conflicts of law thereof. Each party agrees that all legal Proceedings concerning the interpretations, enforcement and defense of the transactions contemplated by this Agreement and any other Transaction Documents (whether brought against a party hereto or its respective affiliates, directors, officers, shareholders, partners, members, employees or agents) shall be commenced exclusively in the state and federal courts sitting in the City of New York. Each party hereby irrevocably submits to the exclusive jurisdiction of the state and federal courts sitting in the City of New York, Borough of Manhattan for the adjudication of any dispute hereunder or in connection herewith or with any transaction contemplated hereby or discussed herein (including with respect to the enforcement of any of the Transaction Documents), and hereby irrevocably waives, and agrees not to assert in any Action or Proceeding, any claim that it is not personally subject to the jurisdiction of any such court, that such 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 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 Agreement and agrees that such service shall constitute good and sufficient service of process and notice thereof. Nothing contained herein shall be deemed to limit in any way any right to serve process in any other manner permitted by law. If either party shall commence an Action or Proceeding to enforce any provisions of the Transaction Documents, then, in addition to the obligations of the Company under Article VI, the prevailing party in such Action or Proceeding shall be reimbursed by the other party for its reasonable attorneys' fees and other costs and expenses incurred with the investigation, preparation and prosecution of such Action or Proceeding.

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

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

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

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

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

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

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

(Signature Pages Follow)

If the foregoing correctly sets forth the understanding between the Underwriters and the Company, please so indicate in the space provided below for that purpose, whereupon this letter shall constitute a binding agreement among the Company and the several Underwriters in accordance with its terms.

Very truly yours,

NEUROBO PHARMACEUTICALS, INC.

By: _____
Name:
Title:

Address for Notice:
200 Berkeley Street, Office 19th Floor
Boston, Massachusetts, 02116
Attn:

Copy to:
Honigman LLP
650 Trade Centre Way, Suite 200,
Kalamazoo, Michigan 49002
Attn: Phillip Torrence, Esq.

Accepted on the date first above written.
LADENBURG THALMANN & CO. INC.
As the Representative of the several
Underwriters listed on Schedule I
By: Ladenburg Thalmann & Co. Inc.

By: _____
Name: Nicholas Stergis
Title: Managing Director

Address for Notice:

640 Fifth Avenue, 4th Floor
New York, NY 10019
Attn: General Counsel

Copy to:
Ellenoff Grossman & Schole LLP
1345 Avenue of the Americas
New York, NY 10105
Attn: Michael Nertney, Esq.

SCHEDULE I

SCHEDULE OF UNDERWRITERS

Underwriters	Closing Shares	Closing Preferred Shares	Closing Warrants	Closing Purchase Price
Ladenburg Thalmann & Co. Inc.				
Total				

SCHEDULE II

SCHEDULE OF LOCK-UP PARTIES

Andrew Koven
Jason Groves
Richard Kang, Ph.D.
Hyung Heon Kim
Michael Salsbury
D. Gordon Strickland
Na Yeon (Irene) Kim
Dong-A ST Co., Ltd.
E&Investment, Inc.
The E&Healthcare Investment Fund II
The E&Healthcare Investment Fund No. 6
The E&Healthcare Investment Fund No. 7

NEUROBO PHARMACEUTICALS, INC.

CERTIFICATE OF DESIGNATION OF PREFERENCES, RIGHTS AND LIMITATIONS
OF
SERIES A CONVERTIBLE PREFERRED STOCK

PURSUANT TO SECTION 151 OF THE
DELAWARE GENERAL CORPORATION LAW

The undersigned, Ben Gil Price, MD, does hereby certify that:

1. He is the President and Chief Executive Officer, of NEUROBO PHARMACEUTICALS, INC., a Delaware corporation (the ***"Corporation"***).

2. The Corporation is authorized to issue 10,000,000 shares of preferred stock, none of which are issued and outstanding.

3. The following resolutions were duly adopted by the board of directors of the Corporation (the ***"Board of Directors"***):

WHEREAS, the certificate of incorporation of the Corporation provides for a class of its authorized stock known as preferred stock, consisting of 10,000,000 shares, $0.001 par value per share, issuable from time to time in one or more series;

WHEREAS, the Board of Directors is authorized to fix the dividend rights, dividend rate, voting rights, conversion rights, liquidation preferences of any wholly unissued series of preferred stock and the number of shares constituting any series and the designation thereof, of any of them; and

WHEREAS, it is the desire of the Board of Directors, pursuant to its authority as aforesaid, to fix the rights, preferences, restrictions and other matters relating to a new series of the preferred stock, which shall consist of up to [3,700] shares of the preferred stock which the Corporation has the authority to issue, as follows:

NOW, THEREFORE, BE IT RESOLVED, that the Board of Directors does hereby provide for the issuance of a new series of preferred stock for cash or exchange of other securities, rights or property and does hereby fix and determine the rights, preferences, restrictions and other matters relating to such series of preferred stock as follows:

TERMS OF SERIES A PREFERRED STOCK

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

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

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

"Automatic Conversion" shall have the meaning set forth in Section 6(c).

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

"Cash Payment" shall have the meaning set forth in Section 6(d).

"Cash Payment Deadline" shall have the meaning set forth in Section 6(d).

"Commission" means the United States Securities and Exchange Commission.

"Common Stock" means the Corporation's common stock, par value $0.001 per share, and stock of any other class of securities into which such securities may hereafter be reclassified or changed.

"Common Stock Equivalents" means any securities of the Corporation or the Subsidiaries which would entitle the holder thereof to acquire at any time shares of the Common Stock, including, without limitation, any debt, preferred stock, rights, options, warrants or other instrument that is at any time convertible into or exercisable or exchangeable for, or otherwise entitles the holder thereof to receive, Common Stock.

"Conversion Price" shall have the meaning set forth in Section 6(b).

"***Conversion Request Date***" shall have the meaning set forth in Section 6(d).

"***Conversion Restriction***" shall have the meaning set forth in Section 6(d).

"Conversion Shares" means, collectively, the shares of Common Stock issuable upon conversion of the shares of the Preferred Stock in accordance with the terms hereof.

"***Default Cash Dividends***" shall have the meaning set forth in Section 6(d).

"Effective Date" means the date that the Registration Statement filed by the Corporation pursuant to the Registration Rights Agreement is first declared effective by the Commission.

"Fundamental Transaction" shall have the meaning set forth in Section 7(d).

"Holder" shall have the meaning given such term in Section 2.

"Junior Securities" means collectively, the Common Stock and each other class or series of capital stock now existing or hereafter authorized, classified or reclassified, the terms of which do not expressly provide that such class or series ranks on a parity basis with or senior to the Series A Preferred Stock as to dividend rights and rights on the distribution of assets on any Liquidation.

"Liquidation" shall have the meaning set forth in Section 5.

"Original Issuance Date" means the date of the "Closing" as defined in the Securities Purchase Agreement.

"Parity Securities" means any class or series of capital stock, the terms of which expressly provide that such class ranks pari passu with the Series A Preferred Stock as to dividend rights and rights on the distribution of assets on any Liquidation.

"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 Rights Agreement" means that certain Registration Rights Agreement, dated September [●], 2022, by and among the Corporation and the signatories thereto, as amended, modified or supplemented from time to time in accordance with its terms.

"Registration Statement" means a registration statement that registers the resale of the Conversion Shares of the Holders, who shall be named as "selling stockholders" therein and meets the requirements of the Registration Rights Agreement.

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

"Securities Purchase Agreement" means that certain Securities Purchase Agreement, dated September [●], 2022, by and between the Corporation and Dong-A ST Co. Ltd.

"Series A Preferred Stock" shall have the meaning set forth in Section 2.

"***Share Cap***" means zero (0) shares of Common Stock.

"Stated Value" shall have the meaning set forth in Section 2.

"Stockholder Approval" means the stockholder approval contemplated by Nasdaq listing rule 5635 (or its successor) with respect to the issuance of shares of Conversion Shares in excess of the limitations imposed by such rule.

"Subsidiary" means any direct or indirect subsidiary of the Corporation formed or acquired before or after the date of the Securities Purchase Agreement.

"Successor Entity" shall have the meaning set forth in Section 7(d).

"Trading Day" means a day on which the principal Trading Market is open for business.

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

"Transaction Documents" means the Securities Purchase Agreement, the Registration Rights Agreement, this Certificate of Designation and all exhibits and schedules thereto and hereto and any other documents or agreements executed in connection with the transactions contemplated hereunder.

"Transfer Agent" means American Stock Transfer and Trust Company, the current transfer agent for the Common Stock, and any successor transfer agent of the Corporation.

"***VWAP***" means the per share volume-weighted average price of the Common Stock as displayed on Bloomberg for any consecutive trading day period (or if such volume-weighted average price is unavailable, the market value of one share of Common Stock on such trading days determined, using a volume-weighted average method to the extent practicable, by a nationally recognized independent investment banking firm retained for this purpose by Dong-A at NeuroBo's sole cost and expense). VWAP will be determined without regard to after-hours trading or any other trading outside of the regular trading session. For purposes of determining VWAP only, (a) "trading day" means a day during which (i) there is no market disruption event and (ii) trading in securities generally occurs on the Nasdaq or, if the Common Stock is not listed on the Nasdaq, then a day during which trading in securities generally occurs on the principal U.S. securities exchange on which the Common Stock is listed or, if the Common Stock is not listed on a U.S. national or regional securities exchange, then on the principal other market on which the Common Stock is then traded or quoted; and (b) "market disruption event" means (i) a failure by the principal United States national or regional securities exchange or market on which the Common Stock is listed or admitted to trading to open for trading during its regular trading session or (ii) the occurrence or existence prior to 1:00 p.m., New York City time, on any scheduled trading day for the Common Stock for more than one half-hour period in the aggregate during regular trading hours of any suspension or limitation imposed on trading (by reason of movements in price exceeding limits permitted by the relevant securities exchange or otherwise) in the Common Stock or in any options, contracts or future contracts relating to the Common Stock (or such other security).

Section 2. **Designation, Amount and Par Value.** The series of preferred stock of the Corporation shall be designated as the Series A Convertible Preferred Stock (the ***"Series A Preferred Stock"***) and the number of shares so designated shall be up to 3,700 (which shall not be subject to increase without the written consent of the holders (each, a ***"Holder"*** and collectively, the ***"Holders"***) of a majority of the then outstanding shares of the Series A Preferred Stock). Each share of the Series A Preferred Stock shall have a par value of $0.001 per share and a stated value equal to $10,000.00 (the ***"Stated Value"***).

Section 3. **Dividends.** Holders shall be entitled to receive, and the Corporation shall pay, dividends on shares of the Series A Preferred Stock equal (on an as-if-converted-to-Common-Stock basis) to and in the same form as dividends (other than dividends in the form of Common Stock) actually paid on shares of the Common Stock when, as and if such dividends (other than dividends in the form of shares of the Common Stock) are paid on shares of the Common Stock. Other than as set forth in the previous sentence or in the case of any Default Cash Dividends, no other dividends shall be paid on shares of the Series A Preferred Stock; and the Corporation shall pay no dividends (other than dividends in the form of the Common Stock) on shares of the Common Stock unless it simultaneously complies with the previous sentence.

Section 4. **Voting Rights.** Except as otherwise provided herein or as otherwise required by the Delaware General Corporation Law, the Series A Preferred Stock shall have no voting rights. However, as long as any shares of the Series A Preferred Stock are outstanding, the Corporation shall not, without the affirmative vote of the Holders of a majority of the then outstanding shares of the Series A Preferred Stock, (a) (i) alter, amend or modify the preferences, privileges or rights given to the Series A Preferred Stock, (ii) alter or amend this Certificate of Designation, or (iii) amend or repeal any provision of, or add any provision to, the certificate of incorporation or bylaws of the Corporation, or file any certificate of amendment or certificate of designations of preferences, limitations and relative rights of any series of the Series A Preferred Stock, if such action would adversely alter or change the powers, preferences or rights of the Series A Preferred Stock in a manner materially different than the effect of such actions on the Common Stock (regardless, in the case of clause (i), (ii) or (iii), of whether any of the foregoing actions shall be by means of amendment to the certificate of incorporation of the Corporation or by merger, consolidation or otherwise), (b) issue further shares of the Series A Preferred Stock or increase or decrease (other than by conversion) the number of authorized shares of the Series A Preferred Stock; (c) authorize, create or issue classes or series of equity securities other than Junior Securities; (d) authorize, create and/or issue any funded indebtedness (other than indebtedness already incurred); (e) sell or transfer, other than in the ordinary course of its business, mortgage, assign, pledge, lease, grant a security interest in, or encumber any of the Corporation's assets or (f) enter into any agreement with respect to any of the foregoing.

Section 5. **Liquidation.** Upon any liquidation, dissolution or winding-up of the Corporation, whether voluntary or involuntary (a ***"Liquidation"***), after the satisfaction in full of the debts of the Corporation and the payment of any liquidation preference owed to the holders of shares of capital stock of the Corporation ranking senior to the Series A Preferred Stock upon liquidation, pari passu with the holders of any Parity Securities by reason of their ownership thereof, but before any distribution or payment out of the assets of the Corporation shall be made to the holders of Junior Securities by reason of their ownership thereof, an amount in cash per share equal to the amount per share in cash payable to the Holder if the shares of Series A Preferred Stock were converted immediately prior to the Liquidation into shares of Common Stock.

Section 6. **Conversion.**

(a) **No Optional Conversion for Conversion Shares.** The Series A Preferred Stock shall only be convertible for Conversion Shares upon receipt of the Stockholder Approval pursuant to an Automatic Conversion (as defined below). Except pursuant to Section 6(d) hereof, the Series A Preferred Stock shall not be convertible at the option of the Holder. Shares of the Series A Preferred Stock converted into shares of the Common Stock in accordance with the terms hereof shall resume the status of authorized but unissued shares of preferred stock and shall no longer be designated as Series A Convertible Preferred Stock.

(b) Conversion Price. The conversion price upon an Automatic Conversion for the Series A Preferred Stock shall equal $[●][1], subject to adjustment herein (the ***"Conversion Price"***).

(c) Automatic Conversion. Notwithstanding anything herein to the contrary, on the first Trading Day after the Corporation obtains the Stockholder Approval, all outstanding shares of the Series A Preferred Stock shall, without any further action by Holders and whether or not any certificates representing such shares are surrendered to the Corporation or the Transfer Agent, automatically be converted into such number of shares of Common Stock as determined by dividing the Stated Value by the Conversion Price then in effect (the ***"Automatic Conversion"***). On the date of such Automatic Conversion, the Holder shall be deemed to be the holder of record of the Common Stock issuable upon such conversion, notwithstanding that any certificates representing such shares of the Series A Preferred Stock shall not have been surrendered at the office of the Corporation or that any such certificates evidencing such Conversion Shares shall not then be actually delivered to such Holder. Provided the Transfer Agent is participating in the Depository Trust Company (***"DTC"***) Fast Automated Securities Transfer program (and subject to Section 6(e)(i)), the Holder may provide written notice to the Corporation that the applicable Conversion Shares be credited to the account of the Holder's prime broker with DTC through its Deposit Withdrawal Agent Commission system (a ***"DWAC Delivery"***).

(d) Conversion and Issuance Limitations. Unless and until the Stockholder Approval (to the extent and only to the extent required under Nasdaq listing rules) is obtained, the Holder shall not have the right to acquire shares of Common Stock issuable upon conversion of the Series A Preferred Stock, and the Corporation shall not be required to issue shares of Common Stock issuable upon conversion of the Series A Preferred Stock in excess of the Share Cap (the "***Conversion Restriction***"). Any purported delivery of shares of Common Stock upon conversion of any Series A Preferred Stock will be void and have no effect to the extent, and only to the extent, that such delivery would result in issuance of shares of Common Stock in violation of the listing rules of Nasdaq. Notwithstanding the foregoing, if the Automatic Conversion has not occurred by the nine (9)-month anniversary of the Original Issuance Date, Holder shall be entitled to submit a request to the Corporation for the conversion of all, but not less than all, of Holder's shares of Series A Preferred Stock that are subject to the Conversion Restriction that would exceed the Share Cap; provided, that, in lieu of the Conversion Shares that would otherwise be deliverable upon conversion but for the Conversion Restriction, the Corporation shall instead deliver to such Holder for each share of Common Stock that would have been so otherwise delivered an amount of cash equal to the VWAP per share of Common Stock on the Trading Day immediately preceding the date such request is made (such date, a ***"Conversion Request Date"***, and such payment, a ***"Cash Payment"***), payable within not more than thirty (30) days following the applicable Conversion Request Date (such date, the ***"Cash Payment Deadline"***). If the Corporation fails to make any required Cash Payment by the required Cash Payment Deadline on any share of Series A Preferred Stock, then the Holder thereof will be entitled to receive cumulative cash dividends on each such share at a rate per annum of 5.00% on the Stated Value (such dividends, ***"Default Cash Dividends"***). Default Cash Dividends, if any, shall accumulate on a daily basis from, and including, the Cash Payment Deadline to, but excluding, the date upon which the required Cash Payment is made (whether or not there shall be earnings or funds of the Corporation legally available for the payment of Default Cash Dividends or the Corporation declares the payment of Default Cash Dividends). Default Cash Dividends, if any, shall be payable quarterly in arrears on March 31, June 30, September 31 and December 31 of each year to the applicable Holder as it appears on the Corporation's Register at the close of business on the March 15, June 15, September 15 and December 15 preceding the applicable payment date. Default Cash Dividends, if any, payable for any period less than a full quarterly dividend period (based upon the number of days elapsed during the period) shall be computed on the basis of a 360-day year consisting of twelve 30-day months.

[1] Price to be determined as set forth in the Securities Purchase Agreement to which this Certificate of Designation is attached and completed prior to filing.

(e) Mechanics of Automatic Conversion.

(i) ***Delivery of Book-Entry Statement Upon Automatic Conversion.*** Not later than three (3) Trading Days after the date of the Automatic Conversion, the Corporation shall (A) deliver, or cause to be delivered, to the converting Holder a book-entry statement evidencing the number of Conversion Shares being acquired upon the Automatic Conversion (or, subject to Section 6(c), a stock certificate representing such Conversion Shares upon request of the Holder) or (B) in the case of an election for DWAC Delivery (which shall be available if, and only if, on the date of the Automatic Conversion neither restrictive legends nor trading restrictions are then required by the Securities Purchase Agreement or applicable law), electronically transfer such Conversion Shares by crediting the account of the Holder's prime broker with DTC through its DWAC system.

(ii) ***Reservation of Shares Issuable Upon Conversion.*** The Corporation covenants that it will at all times reserve and keep available out of its authorized and unissued shares of Common Stock for the sole purpose of issuance upon conversion of the Series A Preferred Stock and payment of dividends on the Series A Preferred Stock, each as herein provided, free from preemptive rights or any other actual contingent purchase rights of Persons other than the Holder (and the other holders of the Series A Preferred Stock), not less than such aggregate number of shares of the Common Stock as shall (subject to the terms and conditions set forth in the Securities Purchase Agreement) be issuable (taking into account the adjustments and restrictions of Section 7) upon the conversion of the then outstanding shares of the Series A Preferred Stock and payment of dividends hereunder. The Corporation covenants that all shares of the Common Stock that shall be so issuable shall, upon issue, be duly authorized, validly issued, fully paid and nonassessable and, if the Registration Statement is then effective under the Securities Act, shall be registered for public resale in accordance with such Registration Statement in accordance with the terms of, and subject to the Holder's compliance with its obligations under, the Registration Rights Agreement.

(iii) ***Fractional Shares.*** No fractional shares or scrip representing fractional shares shall be issued upon the conversion of the Series A Preferred Stock. As to any fraction of a share which the Holder would otherwise be entitled to purchase upon such conversion, the Corporation 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 Conversion Price or round up to the next whole share.

(iv) ***Transfer Taxes and Expenses.*** The issuance of certificates for shares of the Common Stock on conversion of shares of the Series A Preferred Stock shall be made without charge to any Holder for any documentary stamp or similar taxes that may be payable in respect of the issue or delivery of such certificates, provided that the Corporation shall not be required to pay any tax that may be payable in respect of any transfer involved in the issuance and delivery of any such certificate upon conversion in a name other than that of the Holders of such shares of the Series A Preferred Stock and the Corporation shall not be required to issue or deliver such certificates unless or until the Person or Persons requesting the issuance thereof shall have paid to the Corporation the amount of such tax or shall have established to the satisfaction of the Corporation that such tax has been paid.

Section 7. CERTAIN ADJUSTMENTS.

(a) Stock Dividends and Stock Splits. If the Corporation, at any time while shares of the Series A Preferred Stock are outstanding: (i) pays a stock dividend or otherwise makes a distribution or distributions payable in shares of the Common Stock on shares of the Common Stock or any other Common Stock Equivalents (which, for avoidance of doubt, shall not include any shares of the Common Stock issued by the Corporation upon conversion of, or payment of a dividend on, shares of the Series A Preferred Stock), (ii) subdivides outstanding shares of the Common Stock into a larger number of shares, (iii) combines (including by way of a reverse stock split) outstanding shares of the Common Stock into a smaller number of shares, or (iv) issues, in the event of a reclassification of shares of the Common Stock, any shares of capital stock of the Corporation, then the Conversion Price shall be multiplied by a fraction of which the numerator shall be the number of shares of the Common Stock (excluding any treasury shares of the Corporation) outstanding immediately before such event, and of which the denominator shall be the number of shares of Common Stock outstanding immediately after such event. Any adjustment made pursuant to this Section 7(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 7(a) above, if at any time the Corporation grants, issues or sells any Common Stock Equivalents or rights to purchase stock, warrants, securities or other property pro rata to the record holders of any class of shares of the 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 the Common Stock acquirable upon complete conversion of such Holder's shares of the Series A Preferred Stock (without regard to any limitations on exercise hereof) 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 the Common Stock are to be determined for the grant, issue or sale of such Purchase Rights.

(c) Pro Rata Distributions. During such time as shares of the Series A Preferred Stock are outstanding, if the Corporation declares or makes any dividend or other distribution of its assets (or rights to acquire its assets) to holders of shares of the 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 shares of the Series A Preferred Stock, then, in each such case, the Holder shall be entitled to participate in such Distribution to the same extent that the Holder would have participated therein if the Holder had held the number of shares of the Common Stock acquirable upon complete conversion of shares of the Series A Preferred Stock (without regard to any limitations on conversion hereof) 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 the Common Stock are to be determined for the participation in such Distribution.

(d) Fundamental Transaction. If, at any time while shares of the Series A Preferred Stock are outstanding, (i) the Corporation, directly or indirectly, in one or more related transactions effects any merger or consolidation of the Corporation with or into another Person, (ii) the Corporation, directly or indirectly, effects any sale, lease, license, assignment, transfer, conveyance or other disposition of all or substantially all of its assets in one or a series of related transactions, (iii) any, direct or indirect, purchase offer, tender offer or exchange offer (whether by the Corporation or another Person) is completed pursuant to which holders of Common Stock are permitted to sell, tender or exchange their shares for other securities, cash or property and has been accepted by the holders of 50% or more of the outstanding Common Stock, (iv) the Corporation, directly or indirectly, in one or more related transactions effects any reclassification, reorganization or recapitalization of the Common Stock or any compulsory share exchange pursuant to which the Common Stock is effectively converted into or exchanged for other securities, cash or property, or (v) the Corporation, directly or indirectly, in one or more related transactions consummates a stock or share purchase agreement or other business combination (including, without limitation, a reorganization, recapitalization, spin-off or scheme of arrangement) with another Person whereby such other Person acquires more than 50% of the outstanding shares of the Common Stock (not including any shares of Common Stock held by the other Person or other Persons making or party to, or associated or affiliated with the other Persons making or party to, such stock or share purchase agreement or other business combination and not including any of the transactions contemplated by the Securities Purchase Agreement or the License Agreement) (each a ***"Fundamental Transaction"***), then, upon any subsequent conversion of shares of the Series A Preferred Stock, the Holder shall have the right to receive, for each Conversion Share that would have been issuable upon such conversion immediately prior to the occurrence of such Fundamental Transaction, the number of shares of Common Stock of the successor or acquiring corporation or of the Corporation, if it is the surviving corporation, and any additional consideration (the ***"Alternate Consideration"***) receivable as a result of such Fundamental Transaction by a holder of the number of shares of the Common Stock for which shares of the Series A Preferred Stock is convertible immediately prior to such Fundamental Transaction. For purposes of any such conversion, the determination of the Conversion Price shall be appropriately adjusted to apply to such Alternate Consideration based on the amount of Alternate Consideration issuable in respect of one share of the Common Stock in such Fundamental Transaction, and the Corporation shall apportion the Conversion Price among the Alternate Consideration in a reasonable manner reflecting the relative value of any different components of the Alternate Consideration. If holders of the 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 conversion of shares of the Series A Preferred Stock following such Fundamental Transaction. To the extent necessary to effectuate the foregoing provisions, any successor to the Corporation or surviving entity in such Fundamental Transaction shall file a new Certificate of Designation with the same terms and conditions and issue to the Holders new Series A Preferred Stock consistent with the foregoing provisions and evidencing the Holders' right to convert such Series A Preferred Stock into Alternate Consideration. The Corporation shall cause any successor entity in a Fundamental Transaction in which the Corporation is not the survivor (the ***"Successor Entity"***) to assume in writing all of the obligations of the Corporation under this Certificate of Designation and the other Transaction Documents in accordance with the provisions of this Section 7(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 shares of the Series A Preferred Stock a security of the Successor Entity evidenced by a written instrument substantially similar in form and substance to shares of the Series A Preferred Stock which is convertible for a corresponding number of shares of capital stock of such Successor Entity (or its parent entity) equivalent to the shares of the Common Stock acquirable and receivable upon conversion of shares of the Series A Preferred Stock prior to such Fundamental Transaction, and with a conversion price which applies the conversion price hereunder to such shares of capital stock (but taking into account the relative value of the shares of the Common Stock pursuant to such Fundamental Transaction and the value of such shares of capital stock, such number of shares of capital stock and such conversion price being for the purpose of protecting the economic value of shares of the Series A Preferred Stock immediately prior to the consummation of such Fundamental Transaction), and which is reasonably satisfactory in form and substance to the Holder. Upon the occurrence of any such Fundamental Transaction, the Successor Entity shall succeed to, and be substituted for (so that from and after the date of such Fundamental Transaction, the provisions of this Certificate of Designation and the other Transaction Documents referring to the "Corporation" shall refer instead to the Successor Entity), and may exercise every right and power of the Corporation and shall assume all of the obligations of the Corporation under this Certificate of Designation and the other Transaction Documents with the same effect as if such Successor Entity had been named as the Corporation herein.

(e) Calculations. All calculations under this Section 7 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 7, the number of shares of the Common Stock deemed to be issued and outstanding as of a given date shall be the sum of the number of shares of the Common Stock (excluding any treasury shares of the Corporation) issued and outstanding.

Section 8. MISCELLANEOUS.

(a) Notices. Any and all notices or other communications or deliveries to be provided by the Holders hereunder shall be in writing and delivered personally or sent by a nationally recognized overnight courier service, addressed to the Corporation, at 200 Berkeley Street, Floor 19, Boston, Massachusetts 02116, Attention: Chief Executive Officer, or such other address as the Corporation may specify for such purposes by notice to the Holders delivered in accordance with this Section 8. Any and all notices or other communications or deliveries to be provided by the Corporation hereunder shall be in writing and delivered personally, by email, by facsimile, or sent by a nationally recognized overnight courier service addressed to each Holder at the email address, facsimile number or address of such Holder appearing on the books of the Corporation, or if no such email address, facsimile number or address appears on the books of the Corporation, at the principal place of business of such Holder, as set forth in the Securities Purchase Agreement. Any notice or other communication or deliveries hereunder shall be deemed given and effective on the earliest of (i) the date of transmission, if such notice or communication is delivered via email to the email address referred to in this Section, (ii) the date of transmission, if such notice or communication is delivered via facsimile to the facsimile number set forth in this Section prior to 5:30 p.m. (New York City time) on any date, (iii) the next Trading Day after the date of transmission, if such notice or communication is delivered via facsimile to the facsimile number 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, (iv) the second Trading Day following the date of mailing, if sent by U.S. nationally recognized overnight courier service, or (v) upon actual receipt by the party to whom such notice is required to be given.

(b) Book-Entry; Certificates. The Series A Preferred Stock will be issued in book-entry form; provided that, if a Holder requests that such Holder's shares of the Series A Preferred Stock be issued in certificated form, the Corporation will instead issue a stock certificate to such Holder representing such Holder's shares of the Series A Preferred Stock. To the extent that any shares of the Series A Preferred Stock are issued in book-entry form, references herein to "certificates" shall instead refer to the book-entry notation relating to such shares.

(c) Lost or Mutilated Series A Preferred Stock Certificate. If a Holder's Series A Preferred Stock certificate shall be mutilated, lost, stolen or destroyed, the Corporation shall execute and deliver, in exchange and substitution for and upon cancellation of a mutilated certificate, or in lieu of or in substitution for a lost, stolen or destroyed certificate, a new certificate for the shares of the Series A Preferred Stock so mutilated, lost, stolen or destroyed, but only upon receipt of evidence of such loss, theft or destruction of such certificate, and of the ownership hereof reasonably satisfactory to the Corporation.

(d) Governing Law.

(i) All questions concerning the construction, validity, enforcement and interpretation of this Certificate of Designation shall be governed by and construed and enforced in accordance with the internal laws of the State of Delaware, without regard to the principles of conflict of laws thereof. Each of the Corporation and each Holder agrees that all legal proceedings concerning the interpretation, enforcement and defense of the transactions contemplated by this Certificate of Designation (whether brought against a party hereto or its respective Affiliates, directors, officers, shareholders, employees or agents) shall be commenced in Court of Chancery of the State of Delaware. Each of the Corporation and each Holder hereby irrevocably submits to the exclusive jurisdiction of the Court of Chancery of the State of Delaware for the adjudication of any dispute hereunder or in connection herewith or with any transaction contemplated hereby or discussed, and hereby irrevocably waives, and agrees not to assert in any suit, action or proceeding, any claim that it is not personally subject to the jurisdiction of such Delaware Chancery Courts, or such Delaware Chancery Courts are improper or inconvenient venue for such proceeding. Each of the Corporation and each Holder hereby irrevocably waives personal service of process and consents to process being served in any such suit, action or proceeding by mailing a copy thereof via registered or certified mail or overnight delivery (with evidence of delivery) to such party at the address in effect for notices to it under this Certificate of Designation and agrees that such service shall constitute good and sufficient service of process and notice thereof. Nothing contained herein shall be deemed to limit in any way any right to serve process in any other manner permitted by applicable law.

(ii) Each of the Corporation and each Holder hereby irrevocably waives, to the fullest extent permitted by applicable law, any and all right to trial by jury in any legal proceeding arising out of or relating to this Certificate of Designation or the transactions contemplated hereby. If any party shall commence an action or proceeding to enforce any provisions of this Certificate of Designation, then the prevailing party in such action or proceeding shall be reimbursed by the other party for its attorneys' fees and other costs and expenses incurred in the investigation, preparation and prosecution of such action or proceeding.

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

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

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

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

(i) Status of Converted or Redeemed Series A Preferred Stock. Shares of the Series A Preferred Stock may only be issued pursuant to the Securities Purchase Agreement. If any shares of the Series A Preferred Stock shall be converted or reacquired by the Corporation, such shares shall resume the status of authorized but unissued shares of preferred stock and shall no longer be designated as Series A Convertible Preferred Stock.

(j) Redemption. The Series A Preferred Stock is not redeemable.

(k) Trading Market Compliance. Notwithstanding any other provision of this Certificate of Designation, the Corporation will not take any action or be required to take any action contemplated by the terms and conditions set forth in this Certificate of Designation that would violate applicable rules and regulations of the Trading Market on which the Corporation's securities are listed.

Section 9. Fractional Shares. Series A Preferred Stock may be issued in fractions of a share that shall entitle the holder, in proportion to such holder's fractional shares, to receive dividends, participate in distributions and to have the benefit of all other rights of holders of the Series A Preferred Stock.

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Resolved, Further, that the Chairman, the president or any vice-president of the Corporation be and hereby is authorized and directed to prepare and file this Certificate of Designation of Preferences, Rights and Limitations of Series A Convertible Preferred Stock in accordance with the foregoing resolution and the provisions of Delaware law.

In Witness Whereof, the undersigned have executed this Certificate of Designation this [●] of [●], 2022.

_____

Name: Ben Gil Price, MD
Title: Chief Executive Officer and President

Exhibit 3.6

EXHIBIT A

NEUROBO PHARMACEUTICALS, INC.

**CERTIFICATE OF DESIGNATION OF PREFERENCES,
RIGHTS AND LIMITATIONS
OF
SERIES B CONVERTIBLE PREFERRED STOCK**

PURSUANT TO SECTION 151 OF THE
DELAWARE GENERAL CORPORATION LAW

The undersigned, Gil Price, M.D., does hereby certify that:

1. He is the President and Chief Executive Officer of Neurobo Pharmaceuticals, Inc., a Delaware corporation (the "Corporation").

2. The Corporation is authorized to issue 10,000,000 shares of preferred stock, _____ of which have been issued.

3. The following resolutions were duly adopted by the board of directors of the Corporation (the "Board of Directors"):

WHEREAS, the certificate of incorporation of the Corporation provides for a class of its authorized stock known as preferred stock, consisting of 10,000,000 shares, $0.001 par value per share, issuable from time to time in one or more series;

WHEREAS, the Board of Directors is authorized to provide for the issue of any or all of the unissued and undesignated shares of the Preferred Stock in one or more series, and to fix the number of shares and to determine or alter for each such series, such voting powers, full or limited, or no voting powers, and such designation, preferences, and relative, participating, optional, or other rights and such qualifications, limitations, or restrictions thereof, as shall be stated and expressed in the resolution or resolutions adopted by the Board of Directors providing for the issuance of such shares and as may be permitted by the DGCL; and

WHEREAS, it is the desire of the Board of Directors, pursuant to its authority as aforesaid, to fix the number of shares and to determine such voting powers, full or limited, or no voting powers, and such designation, preferences, and relative, participating, optional, or other rights and such qualifications, limitations, or restrictions thereof, relating to a series of the preferred stock, which shall consist of, except as otherwise set forth in the Underwriting Agreement, up to _____ shares of the preferred stock which the Corporation has the authority to issue, as follows:

NOW, THEREFORE, BE IT RESOLVED, that the Board of Directors does hereby provide for the issuance of a series of preferred stock for cash or exchange of other securities, rights or property and does hereby fix and determine the rights, preferences, qualifications, limitations, restrictions and other matters relating to such series of preferred stock as follows:

TERMS OF PREFERRED STOCK

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

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

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

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

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

"Buy-In" shall have the meaning set forth in Section 6(c)(iv).

"Commission" means the United States Securities and Exchange Commission.

"Common Stock" means the Corporation's common stock, par value $0.001 per share, and stock of any other class of securities into which such securities may hereafter be reclassified or changed.

"Common Stock Equivalents" means any securities of the Corporation or the Subsidiaries which would entitle the holder thereof to acquire at any time Common Stock, including, without limitation, any debt, preferred stock, rights, options, warrants or other instrument that is at any time convertible into or exercisable or exchangeable for, or otherwise entitles the holder thereof to receive, Common Stock.

"Conversion Amount" means the sum of the Stated Value at issue.

"Conversion Date" shall have the meaning set forth in Section 6(a).

"Conversion Price" shall have the meaning set forth in Section 6(b).

"Conversion Shares" means, collectively, the shares of Common Stock issuable upon conversion of the shares of Preferred Stock in accordance with the terms hereof.

"Equity Conditions" means, during the period in question, (a) the Corporation shall have duly honored all conversions scheduled to occur or occurring by virtue of one or more Notices of Conversion of the applicable Holder on or prior to the dates so requested or required, if any, (b) the Corporation shall have paid all liquidated damages and other amounts owing to the applicable Holder in respect of the Preferred Stock, (c) the Common Stock is trading on a Trading Market and all of the shares issuable pursuant to the Transaction Documents are listed or quoted for trading on such Trading Market (and the Corporation believes, in good faith, that trading of the Common Stock on a Trading Market will continue uninterrupted for the foreseeable future), (d) there is a sufficient number of authorized, but unissued and otherwise unreserved, shares of Common Stock for the issuance of all of the shares then issuable pursuant to the Transaction Documents, (e) the issuance of the shares in question to the applicable Holder would not violate the limitations set forth in Section 6(d) and Section 6(e) herein, (f) there has been no public announcement of a pending or proposed Fundamental Transaction that has not been consummated, and (g) the applicable Holder is not in possession of any information provided by the Corporation, any of its Subsidiaries, or any of their officers, directors, employees, agents or Affiliates, that constitutes, or may constitute, material non-public information.

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

"Forced Conversion Date" shall have the meaning set forth in Section 6(e).

"Forced Conversion Notice" shall have the meaning set forth in Section 6(e).

"Forced Conversion Notice Date" shall have the meaning set forth in Section 6(e).

"Fundamental Transaction" shall have the meaning set forth in Section 7(d).

"GAAP" means United States generally accepted accounting principles.

"Holder" shall have the meaning given such term in Section 2.

"Liquidation" shall have the meaning set forth in Section 5.

"New York Courts" shall have the meaning set forth in Section 8(d).

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

"Original Issue Date" means the date of the first issuance of any shares of the Preferred Stock regardless of the number of transfers of any particular shares of Preferred Stock and regardless of the number of certificates which may be issued to evidence such Preferred Stock.

"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.

"Preferred Stock" shall have the meaning set forth in Section 2.

"Representative" means Ladenburg Thalmann & Co. Inc.

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

"Share Delivery Date" shall have the meaning set forth in Section 6(c).

"Stated Value" shall have the meaning set forth in Section 2, as the same may be increased pursuant to Section 3.

"Successor Entity" shall have the meaning set forth in Section 7(d).

"Trading Day" means a day on which the principal Trading Market is open for business.

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

"Transfer Agent" means American Stock Transfer & Trust Company, the current transfer agent of the Corporation with a mailing address of 6201 15th Avenue, Brooklyn, NY 11219 and any successor transfer agent of the Corporation.

"Underwriting Agreement" means the underwriting agreement, dated as of _____ __, 2022, among the Corporation and the Representative, as representative of the underwriters named therein, as amended, modified or supplemented from time to time in accordance with its terms.

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

Section 2. Designation, Amount and Par Value. The series of preferred stock shall be designated as its Series B Convertible Preferred Stock (the "Preferred Stock") and the number of shares so designated shall be up to ___ (which shall not be subject to increase without the written consent of the holders of a majority of the then outstanding shares of the Preferred Stock (each, a "Holder" and collectively, the "Holders")). Each share of Preferred Stock shall have a par value of $0.001 per share and a stated value equal to $_____, subject to increase set forth in Section 3 below (the "Stated Value"). The Preferred Stock will initially be issued in book-entry form and shall initially be represented only by one or more global certificates deposited with the Depository Trust Company ("DTC") and registered in the name of Cede & Co., a nominee of DTC, or as otherwise directed by DTC. As between the Corporation and a beneficial owner of Preferred Stock, such beneficial owner shall have all of the rights and remedies of a Holder hereunder. In addition, a beneficial owner of Preferred Stock has the right, upon written notice by such beneficial owner to the Corporation, to request the exchange of some or all of such beneficial owner's interest in Preferred Stock represented by one or more global Preferred Stock certificates deposited with Cede & Co. (or its successor) for a physical Preferred Stock certificate (a "Preferred Stock Certificate Request Notice" and the date of delivery of such Preferred Stock Certificate Request Notice by a beneficial owner, the "Preferred Stock Certificate Request Notice Date" and the deemed surrender upon delivery by the beneficial owner of a number of global shares of Preferred Stock for the same number of shares of Preferred Stock represented by a physical stock certificate, a "Preferred Stock Exchange", and such physical certificate(s), a "Preferred Stock Certificate"). Upon delivery of a Preferred Stock Certificate Request Notice, the Corporation shall promptly effect the Preferred Stock Exchange and shall promptly issue and deliver to the beneficial owner a physical Preferred Stock Certificate for such number of shares of Preferred Stock represented by its interest in such global certificates in the name of the beneficial owner. Such Preferred Stock Certificate shall be dated the Original Issue Date and shall be executed by an authorized signatory of the Corporation. In connection with a Preferred Stock Exchange, the Corporation agrees to deliver the Preferred Stock Certificate to the Holder within three (3) Business Days of the delivery of a properly completed and executed Preferred Stock Certificate Request Notice pursuant to the delivery instructions in the Preferred Stock Certificate Request Notice. The Corporation covenants and agrees that, upon the date of delivery of the properly completed and executed Preferred Stock Certificate Request Notice, the Holder shall be deemed to be the holder of the Preferred Stock Certificate and further, for purposes of Regulation SHO, a Holder whose interest in this Preferred Stock is a beneficial interest in certificate(s) representing this Preferred Stock held in book-entry form through DTC shall be deemed to have converted its interest in this Preferred Stock upon instructing its broker that is a DTC participant to convert its interest in this Preferred Stock, and, notwithstanding anything to the contrary set forth herein, the Preferred Stock Certificate shall be deemed for all purposes to represent all of the terms and conditions of the Preferred Stock evidenced by such global Preferred Stock certificates and the terms hereof.

Section 3. Dividends. Except for stock dividends or distributions for which adjustments are to be made pursuant to Section 7, Holders shall be entitled to receive, and the Corporation shall pay, dividends on shares of Preferred Stock equal (on an as-if-converted-to-Common-Stock basis, calculated using the then current Conversion Price for the Preferred Stock on the record date for such dividend, disregarding for such purpose any conversion limitations hereunder) to and in the same form as dividends actually paid on shares of the Common Stock when, as and if such dividends are paid on shares of the Common Stock. No other dividends shall be paid on shares of Preferred Stock. The Corporation shall not pay any dividends on the Common Stock unless the Corporation simultaneously complies with this provision.

Section 4. Voting Rights. Except as otherwise provided herein or as otherwise required by law, the Preferred Stock shall have no voting rights. However, as long as any shares of Preferred Stock are outstanding, the Corporation shall not, without the affirmative vote of the Holders of a majority of the then outstanding shares of the Preferred Stock, (a) alter or change adversely the powers, preferences or rights given to the Preferred Stock or alter or amend this Certificate of Designation, (b) amend its certificate of incorporation or other charter documents in any manner that adversely affects any rights of the Holders, (c) increase the number of authorized shares of Preferred Stock, or (d) enter into any agreement with respect to any of the foregoing.

Section 5. Liquidation. Upon any liquidation, dissolution or winding-up of the Corporation, whether voluntary or involuntary (a "Liquidation"), the Holders shall be entitled to receive out of the assets, whether capital or surplus, of the Corporation the same amount that a holder of Common Stock would receive if the Preferred Stock were fully converted (disregarding for such purposes any conversion limitations hereunder) to Common Stock which amounts shall be paid pari passu with all holders of Common Stock. The Corporation shall mail written notice of any such Liquidation, not less than 45 days prior to the payment date stated therein, to each Holder.

Section 6. Conversion.

a) Conversions at Option of Holder. Each share of Preferred Stock shall be convertible, at any time and from time to time from and after the Original Issue Date at the option of the Holder thereof, into that number of shares of Common Stock (subject to the limitations set forth in Section 6(d)) determined by dividing the Stated Value of such share of Preferred Stock by the Conversion Price. Holders shall effect conversions by providing the Corporation with the form of conversion notice attached hereto as Annex A (a "Notice of Conversion"). Each Notice of Conversion shall specify the number of shares of Preferred Stock to be converted, the number of shares of Preferred Stock owned prior to the conversion at issue, the number of shares of Preferred Stock owned subsequent to the conversion at issue and the date on which such conversion is to be effected, which date may not be prior to the date the applicable Holder delivers by e-mail such Notice of Conversion to the Corporation (such date, the "Conversion Date"). If no Conversion Date is specified in a Notice of Conversion, the Conversion Date shall be the date that such Notice of Conversion to the Corporation is deemed delivered hereunder. No ink-original Notice of Conversion shall be required, nor shall any medallion guarantee (or other type of guarantee or notarization) of any Notice of Conversion form be required. The calculations and entries set forth in the Notice of Conversion shall control in the absence of manifest or mathematical error. To effect conversions of shares of Preferred Stock, a Holder shall not be required to surrender the certificate(s) representing the shares of Preferred Stock to the Corporation unless all of the shares of Preferred Stock represented thereby are so converted, in which case such Holder shall deliver the certificate representing such shares of Preferred Stock promptly following the Conversion Date at issue. Shares of Preferred Stock converted into Common Stock or redeemed in accordance with the terms hereof shall be canceled and shall not be reissued. Notwithstanding the foregoing in this Section 6(a), a holder whose interest in the Preferred Stock is a beneficial interest in certificate(s) representing the Preferred Stock held in book-entry form through DTC (or another established clearing corporation performing similar functions), shall effect conversions made pursuant to this Section 6(a) by delivering to DTC (or such other clearing corporation, as applicable) the appropriate instruction form for conversion, complying with the procedures to effect conversions that are required by DTC (or such other clearing corporation, as applicable), subject to a Holder's right to elect to receive Preferred Stock in certificated form pursuant to Section 2, in which case this sentence shall not apply.

b) Conversion Price. The conversion price for the Preferred Stock shall equal **$**_____, subject to adjustment herein (the "Conversion Price").

c) Mechanics of Conversion

i. Delivery of Conversion Shares Upon Conversion. Not later than the earlier of (i) two (2) Trading Days and (ii) the number of Trading Days comprising the Standard Settlement Period (as defined below) after each Conversion Date (the "Share Delivery Date"), the Corporation shall deliver, or cause to be delivered, to the converting Holder (A) the number of Conversion Shares being acquired upon the conversion of the Preferred Stock, which Conversion Shares shall be free of restrictive legends and trading restrictions, and (B) a bank check in the amount of accrued and unpaid dividends, if any. The Corporation shall use its best efforts to deliver the Conversion Shares required to be delivered by the Corporation under this Section 6 electronically through the Depository Trust Company or another established clearing corporation performing similar functions. As used herein, "Standard Settlement Period" means the standard settlement period, expressed in a number of Trading Days, on the Corporation's primary Trading Market with respect to the Common Stock as in effect on the date of delivery of the Notice of Conversion. Notwithstanding the foregoing, with respect to any Notice(s) of Conversion delivered by 12:00 p.m. (New York City time) on the Original Issue Date, the Corporation agrees to deliver the Conversion Shares subject to such notice(s) by 4:00 p.m. (New York City time) on the Original Issue Date, and the Original Issue Date being deemed the "Share Delivery Date" with respect to any Notice(s) of Conversion.

ii. Failure to Deliver Conversion Shares. If, in the case of any Notice of Conversion, such Conversion Shares are not delivered to or as directed by the applicable Holder by the Share Delivery Date, the Holder shall be entitled to elect by written notice to the Corporation at any time on or before its receipt of such Conversion Shares, to rescind such Conversion, in which event the Corporation shall promptly return to the Holder any original Preferred Stock certificate delivered to the Corporation and the Holder shall promptly return to the Corporation the Conversion Shares issued to such Holder pursuant to the rescinded Notice of Conversion.

iii. Obligation Absolute; Partial Liquidated Damages. The Corporation's obligation to issue and deliver the Conversion Shares upon conversion of Preferred Stock in accordance with the terms hereof are absolute and unconditional, irrespective of any action or inaction by a Holder to enforce the same, any waiver or consent with respect to any provision hereof, the recovery of any judgment against any Person or any action to enforce the same, or any setoff, counterclaim, recoupment, limitation or termination, or any breach or alleged breach by such Holder or any other Person of any obligation to the Corporation or any violation or alleged violation of law by such Holder or any other person, and irrespective of any other circumstance which might otherwise limit such obligation of the Corporation to such Holder in connection with the issuance of such Conversion Shares; provided, however, that such delivery shall not operate as a waiver by the Corporation of any such action that the Corporation may have against such Holder. In the event a Holder shall elect to convert any or all of the Stated Value of its Preferred Stock, the Corporation may not refuse conversion based on any claim that such Holder or any one associated or affiliated with such Holder has been engaged in any violation of law, agreement or for any other reason, unless an injunction from a court, on notice to Holder, restraining and/or enjoining conversion of all or part of the Preferred Stock of such Holder shall have been sought and obtained, and the Corporation posts a surety bond for the benefit of such Holder in the amount of 150% of the Stated Value of Preferred Stock which is subject to the injunction, which bond shall remain in effect until the completion of arbitration/litigation of the underlying dispute and the proceeds of which shall be payable to such Holder to the extent it obtains judgment. In the absence of such injunction, the Corporation shall issue Conversion Shares and, if applicable, cash, upon a properly noticed conversion. If the Corporation fails to deliver to a Holder such Conversion Shares pursuant to Section 6(c)(i) by the Share Delivery Date applicable to such conversion, the Corporation shall pay to such Holder, in cash, as liquidated damages and not as a penalty, for each $5,000 of Stated Value of Preferred Stock being converted, $50 per Trading Day (increasing to $100 per Trading Day on the third Trading Day and increasing to $200 per Trading Day on the sixth Trading Day after such damages begin to accrue) for each Trading Day after the Share Delivery Date until such Conversion Shares are delivered or Holder rescinds such conversion. Nothing herein shall limit a Holder's right to pursue actual damages for the Corporation's failure to deliver Conversion Shares within the period specified herein and such Holder shall have the right to pursue all remedies available to it hereunder, at law or in equity including, without limitation, a decree of specific performance and/or injunctive relief. The exercise of any such rights shall not prohibit a Holder from seeking to enforce damages pursuant to any other Section hereof or under applicable law.

iv. Compensation for Buy-In on Failure to Timely Deliver Conversion Shares Upon Conversion. In addition to any other rights available to the Holder, if the Corporation fails for any reason to deliver to a Holder the applicable Conversion Shares by the Share Delivery Date pursuant to Section 6(c)(i), and if after such Share Delivery Date such Holder is required by its brokerage firm to purchase (in an open market transaction or otherwise), or the Holder's brokerage firm otherwise purchases, shares of Common Stock to deliver in satisfaction of a sale by such Holder of the Conversion Shares which such Holder was entitled to receive upon the conversion relating to such Share Delivery Date (a "Buy-In"), then the Corporation shall (A) pay in cash to such Holder (in addition to any other remedies available to or elected by such Holder) the amount, if any, by which (x) such Holder's total purchase price (including any brokerage commissions) for the Common Stock so purchased exceeds (y) the product of (1) the aggregate number of shares of Common Stock that such Holder was entitled to receive from the conversion at issue multiplied by (2) the actual sale price at which the sell order giving rise to such purchase obligation was executed (including any brokerage commissions) and (B) at the option of such Holder, either reissue (if surrendered) the shares of Preferred Stock equal to the number of shares of Preferred Stock submitted for conversion (in which case, such conversion shall be deemed rescinded) or deliver to such Holder the number of shares of Common Stock that would have been issued if the Corporation had timely complied with its delivery requirements under Section 6(c)(i). For example, if a Holder purchases shares of Common Stock having a total purchase price of $11,000 to cover a Buy-In with respect to an attempted conversion of shares of Preferred Stock with respect to which the actual sale price of the Conversion Shares (including any brokerage commissions) giving rise to such purchase obligation was a total of $10,000 under clause (A) of the immediately preceding sentence, the Corporation shall be required to pay such Holder $1,000. The Holder shall provide the Corporation written notice indicating the amounts payable to such Holder in respect of the Buy-In and, upon request of the Corporation, 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 Corporation's failure to timely deliver the Conversion Shares upon conversion of the shares of Preferred Stock as required pursuant to the terms hereof.

v. Reservation of Shares Issuable Upon Conversion. The Corporation covenants that it will at all times reserve and keep available out of its authorized and unissued shares of Common Stock for the sole purpose of issuance upon conversion of the Preferred Stock as herein provided, free from preemptive rights or any other actual contingent purchase rights of Persons other than the Holder (and the other holders of the Preferred Stock), not less than such aggregate number of shares of the Common Stock as shall be issuable (taking into account the adjustments and restrictions of Section 7) upon the conversion of the then outstanding shares of Preferred Stock. The Corporation covenants that all shares of Common Stock that shall be so issuable shall, upon issue, be duly authorized, validly issued, fully paid and nonassessable.

vi. Fractional Shares. No fractional shares or scrip representing fractional shares shall be issued upon the conversion of the Preferred Stock. As to any fraction of a share which the Holder would otherwise be entitled to purchase upon such conversion, the Corporation 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 Conversion Price or round up to the next whole share. Notwithstanding anything to the contrary contained herein, but consistent with the provisions of this subsection with respect to fractional Conversion Shares, nothing shall prevent any Holder from converting fractional shares of Preferred Stock.

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

d) Beneficial Ownership Limitation. The Corporation shall not effect any conversion of the Preferred Stock, and a Holder shall not have the right to convert any portion of the Preferred Stock, to the extent that, after giving effect to the conversion set forth on the applicable Notice of Conversion, such Holder (together with such Holder's Affiliates, and any Persons acting as a group together with such Holder or any of such Holder's Affiliates (such Persons, "Attribution Parties")) would beneficially own in excess of the Beneficial Ownership Limitation (as defined below). For purposes of the foregoing sentence, the number of shares of Common Stock beneficially owned by such Holder and its Affiliates and Attribution Parties shall include the number of shares of Common Stock issuable upon conversion of the Preferred Stock with respect to which such determination is being made, but shall exclude the number of shares of Common Stock which are issuable upon (i) conversion of the remaining, unconverted Stated Value of Preferred Stock beneficially owned by such Holder or any of its Affiliates or Attribution Parties and (ii) exercise or conversion of the unexercised or unconverted portion of any other securities of the Corporation subject to a limitation on conversion or exercise analogous to the limitation contained herein (including, without limitation, the Preferred Stock) beneficially owned by such Holder or any of its Affiliates or Attribution Parties. Except as set forth in the preceding sentence, for purposes of this Section 6(d), beneficial ownership shall be calculated in accordance with Section 13(d) of the Exchange Act and the rules and regulations promulgated thereunder. To the extent that the limitation contained in this Section 6(d) applies, the determination of whether the Preferred Stock is convertible (in relation to other securities owned by such Holder together with any Affiliates and Attribution Parties) and of how many shares of Preferred Stock are convertible shall be in the sole discretion of such Holder, and the submission of a Notice of Conversion shall be deemed to be such Holder's determination of whether the shares of Preferred Stock may be converted (in relation to other securities owned by such Holder together with any Affiliates and Attribution Parties) and how many shares of the Preferred Stock are convertible, in each case subject to the Beneficial Ownership Limitation. To ensure compliance with this restriction, each Holder will be deemed to represent to the Corporation each time it delivers a Notice of Conversion that such Notice of Conversion has not violated the restrictions set forth in this paragraph and the Corporation 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 6(d), in determining the number of outstanding shares of Common Stock, a Holder may rely on the number of outstanding shares of Common Stock as stated in the most recent of the following: (i) the Corporation's most recent periodic or annual report filed with the Commission, as the case may be, (ii) a more recent public announcement by the Corporation or (iii) a more recent written notice by the Corporation or the Transfer Agent setting forth the number of shares of Common Stock outstanding. Upon the written or oral request (which may be via email) of a Holder, the Corporation shall within one Trading Day confirm orally and in writing to such 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 Corporation, including the Preferred Stock, by such Holder or its Affiliates or Attribution Parties since the date as of which such number of outstanding shares of Common Stock was reported. The "Beneficial Ownership Limitation" shall be [4.99%/9.99%] of the number of shares of the Common Stock outstanding immediately after giving effect to the issuance of shares of Common Stock issuable upon conversion of Preferred Stock held by the applicable Holder. A Holder, upon notice to the Corporation, may increase or decrease the Beneficial Ownership Limitation provisions of this Section 6(d) applicable to its Preferred Stock provided that the Beneficial Ownership Limitation in no event exceeds 9.99% of the number of shares of the Common Stock outstanding immediately after giving effect to the issuance of shares of Common Stock upon conversion of this Preferred Stock held by the Holder and the provisions of this Section 6(d) shall continue to apply. Any such increase in the Beneficial Ownership Limitation will not be effective until the 61st day after such notice is delivered to the Corporation and shall only apply to such Holder and no other Holder. The provisions of this paragraph shall be construed and implemented in a manner otherwise than in strict conformity with the terms of this Section 6(d) to correct this paragraph (or any portion hereof) which may be defective or inconsistent with the intended Beneficial Ownership Limitation contained herein or to make changes or supplements necessary or desirable to properly give effect to such limitation. The limitations contained in this paragraph shall apply to a successor holder of Preferred Stock.

e) Forced Conversion. Notwithstanding anything herein to the contrary, if after the Original Issue Date, the VWAP during any 20 of 30 consecutive Trading Day period, which thirty (30) consecutive Trading Day period shall have commenced only after the Original Issue Date (the "Threshold Period"), exceeds $_____[1] (subject to adjustment for forward and reverse stock splits, recapitalizations, stock dividends and the like after the Original Issue Date) and (ii) the average daily dollar trading volume for such Threshold Period exceeds $500,000 per Trading Day, the Corporation may, within one (1) Trading Day after the end of any such Threshold Period, deliver a written notice to all Holders (a "Forced Conversion Notice" and the date such notice is delivered to all Holders, the "Forced Conversion Notice Date") to cause each Holder to convert all or part of such Holder's Preferred Stock (as specified in such Forced Conversion Notice) pursuant to Section 6, it being agreed that the "Conversion Date" for purposes of Section 6 shall be deemed to occur on the third Trading Day following the Forced Conversion Notice Date (such third Trading Day, the "Forced Conversion Date"). The Corporation may not deliver a Forced Conversion Notice, and any Forced Conversion Notice delivered by the Corporation shall not be effective, unless all of the Equity Conditions have been met on each Trading Day during the applicable Threshold Period through and including the later of the Forced Conversion Date and the Trading Day after the date that the Conversion Shares issuable pursuant to such conversion are actually delivered to the Holders pursuant to the Forced Conversion Notice. Any Forced Conversion Notices shall be applied ratably to all of the Holders based on the then outstanding shares of Preferred Stock. For purposes of clarification, a Forced Conversion shall be subject to all of the provisions of Section 6, including, without limitation, the provisions requiring payment of liquidated damages and limitations on conversions.

[1] 300% of Conversion Price.

Section 7. Certain Adjustments.

a) Stock Dividends and Stock Splits. If the Corporation, at any time while this Preferred Stock is outstanding: (i) pays a stock dividend or otherwise makes a distribution or distributions payable in shares of Common Stock on shares of Common Stock or any other Common Stock Equivalents (which, for avoidance of doubt, shall not include any shares of Common Stock issued by the Corporation upon conversion of, or payment of a dividend on, this Preferred Stock), (ii) subdivides outstanding shares of Common Stock into a larger number of shares, (iii) combines (including by way of a reverse stock split) outstanding shares of Common Stock into a smaller number of shares, or (iv) issues, in the event of a reclassification of shares of the Common Stock, any shares of capital stock of the Corporation, then the Conversion Price shall be multiplied by a fraction of which the numerator shall be the number of shares of Common Stock (excluding any treasury shares of the Corporation) outstanding immediately before such event, and of which the denominator shall be the number of shares of Common Stock outstanding immediately after such event. Any adjustment made pursuant to this Section 7(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 7(a) above, if at any time the Corporation grants, issues or sells any Common Stock Equivalents or rights to purchase stock, warrants, securities or other property pro rata to the record holders of any class of shares of Common Stock (the "Purchase Rights"), then the Holder of will be entitled to acquire, upon the terms applicable to such Purchase Rights, the aggregate Purchase Rights which the Holder could have acquired if the Holder had held the number of shares of Common Stock acquirable upon complete conversion of such Holder's Preferred Stock (without regard to any limitations on exercise hereof, including without limitation, the Beneficial Ownership Limitation) immediately before the date on which a record is taken for the grant, issuance or sale of such Purchase Rights, or, if no such record is taken, the date as of which the record holders of shares of Common Stock are to be determined for the grant, issue or sale of such Purchase Rights (provided, however, to the extent that the Holder's right to participate in any such Purchase Right would result in the Holder exceeding the Beneficial Ownership Limitation, then the Holder shall not be entitled to participate in such Purchase Right to such extent (or beneficial ownership of such shares of Common Stock as a result of such Purchase Right to such extent) and such Purchase Right to such extent shall be held in abeyance for the Holder until such time, if ever, as its right thereto would not result in the Holder exceeding the Beneficial Ownership Limitation).

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

d) Fundamental Transaction. If, at any time while this Preferred Stock is outstanding, (i) the Corporation, directly or indirectly, in one or more related transactions effects any merger or consolidation of the Corporation with or into another Person, (ii) the Corporation, directly or indirectly, effects any sale, lease, license, assignment, transfer, conveyance or other disposition of all or substantially all of its assets in one or a series of related transactions, (iii) any, direct or indirect, purchase offer, tender offer or exchange offer (whether by the Corporation or another Person) is completed pursuant to which holders of Common Stock are permitted to sell, tender or exchange their shares for other securities, cash or property and has been accepted by the holders of 50% or more of the outstanding Common Stock, (iv) the Corporation, directly or indirectly, in one or more related transactions effects any reclassification, reorganization or recapitalization of the Common Stock or any compulsory share exchange pursuant to which the Common Stock is effectively converted into or exchanged for other securities, cash or property, or (v) the Corporation, directly or indirectly, in one or more related transactions consummates a stock or share purchase agreement or other business combination (including, without limitation, a reorganization, recapitalization, spin-off or scheme of arrangement) with another Person whereby such other Person acquires more than 50% of the outstanding shares of Common Stock (each a "Fundamental Transaction"), then, upon any subsequent conversion of this Preferred Stock, the Holder shall have the right to receive, for each Conversion Share that would have been issuable upon such conversion immediately prior to the occurrence of such Fundamental Transaction (without regard to any limitation in Section 6(d) on the conversion of this Preferred Stock), the number of shares of Common Stock of the successor or acquiring corporation or of the Corporation, if it is the surviving corporation, and any additional consideration (the "Alternate Consideration") receivable as a result of such Fundamental Transaction by a holder of the number of shares of Common Stock for which this Preferred Stock is convertible immediately prior to such Fundamental Transaction (without regard to any limitation in Section 6(d) on the conversion of this Preferred Stock). For purposes of any such conversion, the determination of the Conversion Price shall be appropriately adjusted to apply to such Alternate Consideration based on the amount of Alternate Consideration issuable in respect of one share of Common Stock in such Fundamental Transaction, and the Corporation shall apportion the Conversion Price among the Alternate Consideration in a reasonable manner reflecting the relative value of any different components of the Alternate Consideration. If holders of Common Stock are given any choice as to the securities, cash or property to be received in a Fundamental Transaction, then the Holder shall be given the same choice as to the Alternate Consideration it receives upon any conversion of this Preferred Stock following such Fundamental Transaction. To the extent necessary to effectuate the foregoing provisions, any successor to the Corporation or surviving entity in such Fundamental Transaction shall file a new Certificate of Designation with the same terms and conditions and issue to the Holders new preferred stock consistent with the foregoing provisions and evidencing the Holders' right to convert such preferred stock into Alternate Consideration. The Corporation shall cause any successor entity in a Fundamental Transaction in which the Corporation is not the survivor (the "Successor Entity") to assume in writing all of the obligations of the Corporation under this Certificate of Designation in accordance with the provisions of this Section 7(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 Preferred Stock a security of the Successor Entity evidenced by a written instrument substantially similar in form and substance to this Preferred Stock which is convertible for a corresponding number of shares of capital stock of such Successor Entity (or its parent entity) equivalent to the shares of Common Stock acquirable and receivable upon conversion of this Preferred Stock (without regard to any limitations on the conversion of this Preferred Stock) prior to such Fundamental Transaction, and with a conversion price which applies the conversion price hereunder to such shares of capital stock (but taking into account the relative value of the shares of Common Stock pursuant to such Fundamental Transaction and the value of such shares of capital stock, such number of shares of capital stock and such conversion price being for the purpose of protecting the economic value of this Preferred Stock immediately prior to the consummation of such Fundamental Transaction), and which is reasonably satisfactory in form and substance to the Holder. Upon the occurrence of any such Fundamental Transaction, the Successor Entity shall succeed to, and be substituted for (so that from and after the date of such Fundamental Transaction, the provisions of this Certificate of Designation referring to the "Corporation" shall refer instead to the Successor Entity), and may exercise every right and power of the Corporation and shall assume all of the obligations of the Corporation under this Certificate of Designation with the same effect as if such Successor Entity had been named as the Corporation herein.

e) Calculations. All calculations under this Section 7 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 7, 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 any treasury shares of the Corporation) issued and outstanding.

f) Notice to the Holders.

i. Adjustment to Conversion Price. Whenever the Conversion Price is adjusted pursuant to any provision of this Section 7, the Corporation shall promptly deliver to each Holder by email a notice setting forth the Conversion Price after such adjustment and setting forth a brief statement of the facts requiring such adjustment.

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

Section 8. Miscellaneous.

a) Notices. Any and all notices or other communications or deliveries to be provided by the Holders hereunder including, without limitation, any Notice of Conversion, shall be in writing and delivered personally, by e-mail, or sent by a nationally recognized overnight courier service, addressed to the Corporation, at the address set forth above Attention: Gil Price, M.D, President and Chief Executive Officer, e-mail address gil.price@neurobopharma.com, or such other e-mail address or address as the Corporation may specify for such purposes by notice to the Holders delivered in accordance with this Section 8. Any and all notices or other communications or deliveries to be provided by the Corporation hereunder shall be in writing and delivered personally, 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 Corporation. 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 8 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.

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

c) Lost or Mutilated Preferred Stock Certificate. If a Holder's Preferred Stock certificate shall be mutilated, lost, stolen or destroyed, the Corporation shall execute and deliver, in exchange and substitution for and upon cancellation of a mutilated certificate, or in lieu of or in substitution for a lost, stolen or destroyed certificate, a new certificate for the shares of Preferred Stock so mutilated, lost, stolen or destroyed, but only upon receipt of evidence of such loss, theft or destruction of such certificate, and of the ownership hereof reasonably satisfactory to the Corporation.

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

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

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

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

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

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

****

RESOLVED, FURTHER, that the Chairman, the president or any vice-president, and the secretary or any assistant secretary, of the Corporation be and they hereby are authorized and directed to prepare and file this Certificate of Designation of Preferences, Rights and Limitations in accordance with the foregoing resolution and the provisions of Delaware law.

In Witness Whereof, the undersigned have executed this Certificate of Designation this [●] of [●], 2022.

_____

Name: Gil Price, M.D.
Title: Chief Executive Officer and President

ANNEX A

NOTICE OF CONVERSION

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

The undersigned hereby elects to convert the number of shares of Series B Convertible Preferred Stock indicated below into shares of common stock, par value $0.001 per share (the "Common Stock"), of NeuroBo Pharmaceuticals, Inc., a Delaware corporation (the "Corporation"), according to the conditions hereof, as of the date written below. If shares of Common Stock are to be issued in the name of a Person other than the undersigned, the undersigned will pay all transfer taxes payable with respect thereto. No fee will be charged to the Holders for any conversion, except for any such transfer taxes.

Conversion calculations:

Date to Effect Conversion: _____

Number of shares of Preferred Stock owned prior to Conversion: _____

Number of shares of Preferred Stock to be Converted: _____

Stated Value of shares of Preferred Stock to be Converted: _____

Number of shares of Common Stock to be Issued: _____

Applicable Conversion Price:_____

Number of shares of Preferred Stock subsequent to Conversion: _____

Address for Delivery: _____
or
DWAC Instructions:
Broker no: _____
Account no: _____

[HOLDER]

By:_____
Name:
Title:

Exhibit 4.2

NEUROBO PHARMACEUTICALS, INC.

and

AMERICAN STOCK TRANSFER & TRUST COMPANY LLC, as
Warrant Agent

Warrant Agency Agreement

Dated as of _____, 2022

WARRANT AGENCY AGREEMENT

WARRANT AGENCY AGREEMENT, dated as of _____, 2022 ("Agreement"), by and between Neurobo Pharmaceuticals, Inc., a Delaware corporation (the "Company"), and American Stock Transfer & Trust Company LLC, with offices at 6201 15th Avenue, Brooklyn, New York 11219 (the "Warrant Agent").

W I T N E S S E T H

WHEREAS, pursuant to an offering by the Company of Warrants (as defined below), the Company wishes to issue Warrants in book entry form entitling the respective holders of the Warrants (the "Holders", which term shall include a Holder's transferees, successors and assigns and "Holder" shall include, if the Warrants are held in "street name", a Participant (as defined below) or a designee appointed by such Participant) to purchase an aggregate of up to _____ shares of Common Stock underlying the Warrants (as defined below) upon the terms and subject to the conditions hereinafter set forth (the "Offering");

WHEREAS, the Company wishes the Warrant Agent to act on behalf of the Company, and the Warrant Agent is willing to act on behalf of the Company, in connection with the issuance, registration, transfer, exchange, exercise and replacement of the Warrants.

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

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

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

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

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

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

(f) "Warrants" means Common Stock Purchase Warrants of the Company with a term of exercise of five (5) years following the Initial Exercise Date.

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

(h) "Warrant Shares" means the shares of Common Stock underlying the Warrants and issuable upon exercise of the Warrants.

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

Section 2. Appointment of Warrant Agent. The Company hereby appoints the Warrant Agent to act as agent for the Company in accordance with the express terms or conditions hereof (and no implied terms and conditions), and the Warrant Agent hereby accepts such appointment. The Company may from time to time appoint such Co-Warrant Agents as it may, in its sole discretion, deem necessary or desirable upon ten (10) calendar days' prior written notice to the Warrant Agent. The Warrant Agent shall have no duty to supervise, and shall in no event be liable for, the acts or omissions of any such Co-Warrant Agent. In the event the Company appoints one or more co-Warrant Agents, the respective duties of the Warrant Agent and any Co-Warrant Agent shall be as the Company shall reasonably determine, provided that such duties and determination are consistent with the terms and provisions of this Agreement.

Section 3. Global Warrants.

(a) The Warrants shall be issuable in book entry form. All of the Warrants shall initially be represented by one or more Global Warrants (the "Global Warrants" and, each, a "Global Warrant"), deposited with the Warrant Agent and registered in the name of Cede & Co., a nominee of The Depository Trust Company (the "Depository"), or as otherwise directed by the Depository. Ownership of beneficial interests in the Warrants, shall be shown on, and the transfer of such ownership shall be effected through, records maintained by (i) the Depository or its nominee for each Global Warrant or (ii) institutions that have accounts with the Depository (such institution, with respect to a Warrant in its account, a "Participant"). For purposes of Regulation SHO, a holder whose interest in a Global Warrant is a beneficial interest in certificate(s) representing such Warrant held in book-entry form through the Depository shall be deemed to have exercised its interest in such Warrant upon instructing its broker that is a Participant to exercise its interest in such Warrant, provided that in each such case payment of the applicable aggregate Exercise Price (other than in the case of a cashless exercise) is delivered by such Participant within the earlier of (i) two trading days and (ii) the number of trading days comprising the Standard Settlement Period, in each case following such instruction. As used herein, "Standard Settlement Period" means the standard settlement period, expressed in a number of trading days, on the Company's primary trading market with respect to the Common Stock as in effect on the date of delivery of the Exercise Notice.

(b) If the Depository subsequently ceases to make its book-entry settlement system available for the Warrants, the Company may instruct the Warrant Agent regarding other arrangements for book-entry settlement. In the event that the Warrants are not eligible for, or it is no longer necessary to have the Warrants available in, book-entry form, the Warrant Agent shall provide written instructions to the Depository to deliver to the Warrant Agent for cancellation each Global Warrant, and the Company shall instruct the Warrant Agent in writing to deliver to each Holder a Warrant Certificate.

(c) A Holder has the right to elect at any time or from time to time a Warrant Exchange (as defined below) pursuant to a Warrant Certificate Request Notice (as defined below). Upon written notice by a Holder to the Warrant Agent for the exchange of some or all of such Holder's Global Warrants for a Warrant Certificate, evidencing the same number of Warrants, which request shall be in the form attached hereto as Annex A (a "Warrant Certificate Request Notice" and the date of delivery of such Warrant Certificate Request Notice by the Holder, the "Warrant Certificate Request Notice Date" and the deemed surrender upon delivery by the Holder of a number of Global Warrants for the same number of Warrants evidenced by a Warrant Certificate, a "Warrant Exchange"), the Warrant Agent shall promptly effect the Warrant Exchange and shall promptly issue and deliver, at the expense of the Company, to the Holder a Warrant Certificate, for such number of Warrants in the name set forth in the Warrant Certificate Request Notice. Such Warrant Certificate shall be dated the original issue date of the Warrants, shall be executed by manual signature by an authorized signatory of the Company, and shall be in the form attached hereto as Exhibit 1-A. 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"). Notwithstanding anything herein to the contrary, the Company shall act as warrant agent with respect to any physical Warrant Certificate issued pursuant to this section. If the Company fails for any reason to deliver to the Holder the Warrant Certificate subject to the Warrant Certificate Request Notice by the Warrant Certificate Delivery Date, the Company shall pay to the Holder, in cash, as liquidated damages and not as a penalty, for each $1,000 of Warrant Shares evidenced by such Warrant Certificate (based on the VWAP (as defined in the Warrants) of the Common Stock on the Warrant Certificate Request Notice Date), $10 per Business Day for each Business Day after such Warrant Certificate Delivery Date until such Warrant Certificate is delivered or, prior to delivery of such Warrant Certificate, the Holder rescinds such Warrant Exchange. In no event shall the Warrant Agent be liable for the Company's failure to deliver the Warrant Certificate by the 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, as applicable, and, notwithstanding anything to the contrary set forth herein, the Warrant Certificate shall be deemed for all purposes to contain all of the terms and conditions of the Warrants, evidenced by such Warrant Certificate, and the terms of this Agreement, other than Sections 3(c) and 9 herein, shall not apply to the Warrants evidenced by the Warrant Certificate. In the event a beneficial owner requests a Warrant Exchange, upon issuance of the paper Warrant Certificate, the Company shall act as warrant agent and the terms of the paper Warrant Certificate so issued shall exclusively govern in respect thereof.

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

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

The Warrant Agent will keep or cause to be kept, at its office designated for such purposes, books for registration and transfer of the Warrant Certificates issued hereunder. Such books shall show the names and addresses of the respective Holders of the Warrant Certificates, the number of warrants evidenced on the face of each such Warrant Certificate and the date of each such Warrant Certificate. The Warrant Agent will create a special account for the issuance of Warrant Certificates.

Section 6. Transfer, Split Up, Combination and Exchange of Warrant Certificates; Mutilated, Destroyed, Lost or Stolen Warrant Certificates. With respect to the Global Warrant, subject to the provisions of the Warrant Certificate, and the last sentence of this first paragraph of Section 6 and subject to applicable law, rules or regulations, or any "stop transfer" instructions the Company may give to the Warrant Agent, at any time after the closing date of the Offering, and at or prior to the Close of Business on the Termination Date (as such term is defined in the Warrant Certificate), any Warrant Certificate or Warrant Certificates or Global Warrant or Global Warrants may be transferred, split up, combined or exchanged for another Warrant Certificate or Warrant Certificates or Global Warrant or Global Warrants, entitling the Holder to purchase a like number of shares of Common Stock as the Warrant Certificate or Warrant Certificates or Global Warrant or Global Warrants surrendered then entitled such Holder to purchase. Any Holder desiring to transfer, split up, combine or exchange any Warrant Certificate or Global Warrant shall make such request in writing delivered to the Warrant Agent and shall surrender the Warrant Certificate or Warrant Certificates, together with the required form of assignment and certificate duly executed and properly completed and such other documentation as the Warrant Agent may reasonably request, to be transferred, split up, combined or exchanged at the office of the Warrant Agent designated for such purpose, provided that no such surrender is applicable to the Holder of a Global Warrant. Any requested transfer of Warrants, whether in book-entry form or certificate form, shall be accompanied by evidence of authority of the party making such request that may be reasonably required by the Warrant Agent. Thereupon the Warrant Agent shall, subject to the last sentence of this first paragraph of Section 6, countersign and deliver to the Person entitled thereto a Warrant Certificate or Warrant Certificates, as the case may be, as so requested. The Company may require payment from the Holder of a sum sufficient to cover any tax or governmental charge that may be imposed in connection with any transfer, split up, combination or exchange of Warrant Certificates. The Warrant Agent shall not have any duty or obligation to take any action under any section of this Agreement that requires the payment of taxes and/or charges unless and until it is satisfied that all such payments have been made.

Upon receipt by the Warrant Agent of evidence reasonably satisfactory to it of the loss, theft, destruction or mutilation of a Warrant Certificate, which evidence shall include an affidavit of loss, or in the case of mutilated certificates, the certificate or portion thereof remaining, and, in case of loss, theft or destruction, of indemnity or security reasonably acceptable to the Company and the Warrant Agent, and satisfaction of any other reasonable requirements established by Section 8-405 of the Uniform Commercial Code as in effect in the State of Delaware, 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 Company will make and deliver a new Warrant Certificate of like tenor to the Warrant Agent for delivery to the Holder in lieu of the Warrant Certificate so lost, stolen, destroyed or mutilated.

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

(a) The Warrants shall be exercisable commencing on the Initial Exercise Date. The Warrants shall cease to be exercisable on the Termination Date (as such term is defined in the Warrant Certificate). Subject to the foregoing and to Section 7(b) below, the Holder of a Warrant may exercise the Warrant, in whole or in part upon surrender of the Warrant Certificate, if required, with the properly completed and duly executed Exercise Notice and payment of the Exercise Price (unless exercised via a cashless exercise), which may be made, at the option of the Holder, by wire transfer or by certified or official bank check in United States dollars, to the Warrant Agent at the office of the Warrant Agent designated for such purposes. In the case of the Holder of a Global Warrant, the Holder shall deliver the duly executed Exercise Notice and the payment of the Exercise Price as described herein. Notwithstanding any other provision in this Agreement, a holder whose interest in a Global Warrant is a beneficial interest in a Global Warrant held in book-entry form through the Depository (or another established clearing corporation performing similar functions) shall effect exercises by delivering to the Depository (or such other clearing corporation, as applicable) the appropriate instruction form for exercise, complying with the procedures to effect exercise that is required by the Depository (or such other clearing corporation, as applicable). The Company acknowledges that the bank accounts maintained by the Warrant Agent in connection with the services provided under this Agreement will be in its name and that the Warrant Agent may receive investment earnings in connection with the investment at Warrant Agent risk and for its benefit of funds held in those accounts from time to time. Neither the Company nor the Holders will receive interest on any deposits or Exercise Price. No ink-original Exercise Notice shall be required, nor shall any medallion guarantee (or other type of guarantee or notarization) of any Exercise Notice be required.

(b) Upon receipt of an Exercise Notice for a Cashless Exercise, the Warrant Agent shall deliver a copy of the Exercise Notice to the Company and request from the Company, and the Company shall promptly calculate and transmit to the Warrant Agent in writing, the number of Warrant Shares issuable in connection with such Cashless Exercise. The Warrant Agent shall have no obligation under this Agreement to calculate, the number of Warrant Shares issuable in connection with a Cashless Exercise, nor shall the Warrant Agent have any duty or obligation to investigate or confirm whether the Company's determination of the number of Warrant Shares issuable upon such exercise, pursuant to this Section 7, is accurate or correct.

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

(d) The Warrant Agent shall deposit all funds received by it in payment of the Exercise Price for all Warrants in the account of the Company maintained with the Warrant Agent for such purpose (or to such other account as directed by the Company in writing) and shall advise the Company via email at the end of each day on which exercise notices are received, or funds for the exercise of any Warrant are received, of the amount so deposited to its account.

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

Section 8. Cancellation and Destruction of Warrant Certificates. All Warrant Certificates surrendered for the purpose of exercise, transfer, split up, combination or exchange shall, if surrendered to the Company or to any of its agents, be delivered to the Warrant Agent for cancellation or in canceled form, or, if surrendered to the Warrant Agent, shall be canceled by it, and no Warrant Certificates shall be issued in lieu thereof except as expressly permitted by any of the provisions of this Agreement. The Company shall deliver to the Warrant Agent for cancellation and retirement, and the Warrant Agent shall so cancel and retire any other Warrant Certificate purchased or acquired by the Company otherwise than upon the exercise thereof. The Warrant Agent shall deliver all canceled Warrant Certificates to the Company, or shall, at the written request of the Company, destroy such canceled Warrant Certificates, and in such case shall deliver a certificate of destruction thereof to the Company, subject to any applicable law, rule or regulation requiring the Warrant Agent to retain such canceled certificates.

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

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

(b) As of the date hereof, the authorized capital stock of the Company consists of (i) _____ shares of Common Stock, of which _____ shares of Common Stock are issued and outstanding, and _____ shares of Common Stock are reserved for issuance upon exercise of the Warrants, (ii) _____ shares of preferred stock, _____ of which are issued and outstanding and _____ shares of Common Stock are reserved for issuance upon conversion of the Preferred Stock; and (iii) _____ shares of Common Stock are authorized for issuance to employees, consultants and directors pursuant to the Company's stock plan, under which options to purchase _____ shares are issued and outstanding. There are no other outstanding obligations, warrants, options or other rights to subscribe for or purchase from the Company any class of capital stock of the Company.

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

(d) The Warrant Agent will create a special account for the issuance of Common Stock upon the exercise of Warrants.

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

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

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

Section 12. Certification of Adjusted Exercise Price or Number of Shares of Common Stock. Whenever the Exercise Price or the number of shares of Common Stock issuable upon the exercise of each Warrant Certificate is adjusted as provided in Section 11 or 13, the Company shall (a) promptly prepare a certificate setting forth the Exercise Price of each Warrant Certificate, as so adjusted, and a brief, reasonably detailed statement of the facts accounting for such adjustment, (b) promptly file with the Warrant Agent and with each transfer agent for the Common Stock a copy of such certificate and (c) instruct the Warrant Agent, at the Company's expense, to send a brief summary thereof to each Holder of a Warrant Certificate. The Warrant Agent shall be fully protected in relying on such certificate and on any adjustment or statement therein contained and shall have no duty or liability with respect to and shall not be deemed to have knowledge of any such adjustment or any such event unless and until it shall have received such certificate.

Section 13. Fractional Shares of Common Stock.

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

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

Section 14. Concerning the Warrant Agent.

(a) The Company agrees to pay to the Warrant Agent, pursuant to the fee schedule mutually agreed upon by the parties hereto and provided separately on the date hereof, for all services rendered by it hereunder and, from time to time, its reasonable expenses and counsel fees and other disbursements incurred in the preparation, delivery, negotiation, amendment, administration and execution of this Agreement and the exercise and performance of its duties hereunder.

(b) The Company covenants and agrees to indemnify and to hold the Warrant Agent and its affiliates harmless against any costs, expenses (including reasonable fees and expenses of its legal counsel), losses or damages, which may be paid, incurred or suffered by or to which it may become subject, arising from or out of, directly or indirectly, any claims or liability resulting from its actions or omissions as Warrant Agent pursuant hereto; provided, that such covenant and agreement does not extend to, and the Warrant Agent shall not be indemnified with respect to, such costs, expenses, losses and damages incurred or suffered by the Warrant Agent as a result of, or arising out of, its gross negligence, bad faith, or willful misconduct (each as determined by a final non-appealable court of competent jurisdiction). The costs and expenses incurred by the Warrant Agent in enforcing this right of indemnification shall be paid by the Company.

(c) Upon the assertion of a claim for which the Company may be required to indemnify the Warrant Agent, the Warrant Agent shall promptly notify the Company of such assertion, and shall keep the other party reasonably advised with respect to material developments concerning such claim. However, failure to give such notice shall not affect the Warrant Agent's right to and the Company's obligations for indemnification hereunder.

(d) Neither party to this Agreement shall be liable to the other party for any consequential, indirect, punitive, special or incidental damages under any provisions of this Agreement or for any consequential, indirect, punitive, special or incidental damages arising out of any act or failure to act hereunder even if that party has been advised of or has foreseen the possibility of such damages.

(e) Notwithstanding anything contained herein to the contrary, the rights and obligations of the parties set forth in this Section 14 shall survive termination of this Agreement, the expiration of the Warrants and/or the resignation, removal or replacement of the Warrant Agent.

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

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

Section 16. Duties of Warrant Agent. The Warrant Agent undertakes the duties and obligations imposed by this Agreement upon the following express terms and conditions (and no implied terms and conditions), by all of which the Company, by its acceptance hereof, shall be bound and shall not assume any obligations or relationship of agency or trust with any of the Holders of the Warrants or any other Person:

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

(b) Whenever in the performance of its duties under this Agreement the Warrant Agent shall deem it necessary or desirable that any fact or matter be proved or established by the Company prior to taking or suffering any action hereunder, such fact or matter (unless other evidence in respect thereof be herein specifically prescribed) may be deemed to be conclusively proved and established by a certificate signed by the Chief Executive Officer, Chief Financial Officer or Vice President of the Company; and such certificate shall be full authorization and protection to the Warrant Agent, and the Warrant Agent shall incur no liability for or in respect of any action taken, suffered or omitted to be taken by it under the provisions of this Agreement in reliance upon such certificate. The Warrant Agent shall have no duty to act without such a certificate as set forth in this Section 16(b).

(c) Subject to the limitation set forth in Section 14, the Warrant Agent shall be liable hereunder only for its own gross negligence, bad faith or willful misconduct (each as determined in a final, non-appealable judgment of a court of competent jurisdiction).

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

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

(f) Each party hereto agrees that it will perform, execute, acknowledge and deliver or cause to be performed, executed, acknowledged and delivered all such further and other acts, instruments and assurances as may reasonably be required by the other party hereto for the carrying out or performing by any party of the provisions of this Agreement.

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

(h) The Warrant Agent and any shareholder, director, officer or employee of the Warrant Agent may buy, sell or deal in any of the Warrants or other securities of the Company or become pecuniarily interested in any transaction in which the Company may be interested, or contract with or lend money to the Company or otherwise act as fully and freely as though it were not Warrant Agent under this Agreement. Nothing herein shall preclude the Warrant Agent from acting in any other capacity for the Company or for any other Person. In the event that the Warrant Agent seeks to exercise a Warrant, and provides the Company with (i) an opinion of counsel to the effect that a public sale or transfer of the Common Stock issuable upon exercise of the Warrant may be made without registration under the 1933 Act and such sale or transfer is effected or (ii) the Purchaser provides reasonable assurances that the Securities can be sold pursuant to an effective registration statement under the Securities Act of 1933, as amended, Rule 144, Section 4(a)(1), or other applicable exemption, the Company shall permit the transfer, and, in the case of the Common Stock issuable upon exercise of the Warrant, promptly instruct its transfer agent to issue one or more certificates, free from restrictive legend, in such name and in such denominations as specified by the Holder. The Company acknowledges that a breach by it of its obligations hereunder will cause irreparable harm to the Holder by vitiating the intent and purpose of the transactions contemplated hereby. Accordingly, the Company acknowledges that the remedy at law for a breach of its obligations under this Section 16(h) may be inadequate and agrees, in the event of a breach or threatened breach by the Company of the provisions of this Section, that the Holder shall be entitled, in addition to all other available remedies, to an injunction restraining any breach and requiring immediate transfer, without the necessity of showing economic loss and without any bond or other security being required.

(i) The Warrant Agent may execute and exercise any of the rights or powers hereby vested in it or perform any duty hereunder either itself or by or through its attorney or agents, and the Warrant Agent shall not be answerable or accountable for any act, default, neglect or misconduct of any such attorney or agents or for any loss to the Company resulting from any such act, default, neglect or misconduct, absent gross negligence or bad faith in the selection and continued employment thereof (which gross negligence and bad faith must be determined by a final, non-appealable judgment of a court of competent jurisdiction).

(j) The Warrant Agent shall not be obligated to expend or risk its own funds or to take any action that it believes would expose or subject it to expense or liability or to a risk of incurring expense or liability, unless it has been furnished with assurances of repayment or indemnity satisfactory to it.

(k) The Warrant Agent shall not be liable or responsible for any failure of the Company to comply with any of its obligations relating to any registration statement filed with the Securities and Exchange Commission or this Agreement, including without limitation obligations under applicable regulation or law.

(l) The Warrant Agent may rely on and be fully authorized and protected in acting or failing to act upon (a) any guaranty of signature by an "eligible guarantor institution" that is a member or participant in the Securities Transfer Agents Medallion Program or other comparable "signature guarantee program" or insurance program in addition to, or in substitution for, the foregoing; or (b) any law, act, regulation or any interpretation of the same even though such law, act, or regulation may thereafter have been altered, changed, amended or repealed.

(m) In the event the Warrant Agent believes any ambiguity or uncertainty exists hereunder or in any notice, instruction, direction, request or other communication, paper or document received by the Warrant Agent hereunder, the Warrant Agent, may, in its sole discretion, refrain from taking any action, and shall be fully protected and shall not be liable in any way to Company, the holder of any Warrant or any other Person for refraining from taking such action, unless the Warrant Agent receives written instructions signed by the Company which eliminates such ambiguity or uncertainty to the satisfaction of Warrant Agent.

(n) This Section 16 shall survive the expiration of the Warrants, the termination of this Agreement and the resignation, replacement or removal of the Warrant Agent. The costs and expenses incurred in enforcing this right of indemnification shall be paid by the Company.

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

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

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

(a) If to the Company, to:

Neurobo Pharmaceuticals, Inc.
200 Berkeley Street, Office 19th Floor
Boston, Massachusetts, 02116
E-mail:
Attn:

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

Honigman LLP
650 Trade Centre Way, Suite 200
Kalamazoo, Michigan 49002
E-mail:
Attn:

(b) If to the Warrant Agent, to:

American Stock Transfer & Trust Company, LLC
6201 15th Avenue
Brooklyn, New York 11219
Email: Reorgwarrants@astfinancial.com

With a copy to:

American Stock Transfer & Trust Company, LLC
48 Wall Street
New York, NY 11219
Attention: Legal Department
Email: legalteamUS@equiniti.com

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

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

Section 20. Supplements and Amendments.

(a) The Company and the Warrant Agent may from time to time supplement or amend this Agreement without the approval of any Holders of Global Warrants in order to (i) add to the covenants and agreements of the Company for the benefit of the Holders of the Global Warrants, (ii) to surrender any rights or power reserved to or conferred upon the Company in this Agreement, (iii) to cure any ambiguity, (iv) to correct or supplement any provision contained herein which may be defective or inconsistent with any other provisions herein, or (v) to make any other provisions with regard to matters or questions arising hereunder which the Company and the Warrant Agent may deem necessary or desirable, provided that such addition, correction or surrender shall not adversely affect the interests of the Holders of the Global Warrants or Warrant Certificates in any material respect.

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

Section 21. Successors. All covenants and provisions of this Agreement by or for the benefit of the Company or the Warrant Agent shall bind and inure to the benefit of their respective successors and assigns hereunder.

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

Section 23. Governing Law; Jurisdiction. This Agreement and each Warrant Certificate issued hereunder shall be governed by, and construed in accordance with, the laws of the State of New York without giving effect to the conflicts of law principles thereof. The Company hereby agrees that any action, proceeding or claim against it arising out of or relating in any way to this Agreement shall be brought and enforced in the courts of the State of New York or the United States District Court for the Southern District of New York, and irrevocably submits to such jurisdiction, which jurisdiction shall be exclusive. The Company hereby waives any objection to such exclusive jurisdiction and that such courts represent an inconvenience forum.

Section 24. Counterparts. This Agreement may be executed in any number of counterparts and each of such counterparts shall for all purposes be deemed to be an original, and all such counterparts shall together constitute but one and the same instrument. A signature to this Agreement transmitted electronically shall have the same authority, effect and enforceability as an original signature.

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

Section 26. Severability. Wherever possible, each provision of this Agreement shall be interpreted in such manner as to be effective and valid under applicable law, but if any provision of this Agreement 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 Agreement; provided, however, that if such prohibited and invalid provision shall adversely affect the rights, immunities, liabilities, duties or obligations of the Warrant Agent, the Warrant Agent shall be entitled to resign immediately upon written notice to the Company.

Section 27. Conflicts. To the extent any provision of this Agreement conflicts with the express provisions of the Warrant Certificate, the provisions of the Warrant Certificate shall govern and be controlling.

Section 28. Force Majeure. Notwithstanding anything to the contrary contained herein, the Warrant Agent will not be liable for any delays or failures in performance resulting from acts beyond its reasonable control, including, without limitation, acts of God, terrorist acts, shortage of supply, breakdowns or malfunctions, interruptions or malfunction of computer facilities, or loss of data due to power failures or mechanical difficulties with information storage or retrieval systems, labor difficulties, war, or civil unrest.

Section 29. Entire Agreement. The parties hereto acknowledge that there are no agreements or understandings, written or oral, between them with respect to matters contemplated hereunder other than as set forth herein and the Warrant Certificates, that this Agreement and the Warrant Certificates contain the entire agreement between them with respect to the subject matter hereof and thereof.

Section 30. Fees; Expenses. As consideration for the services provided by the Warrant Agent (the "Services"), the Company shall pay to the Warrant Agent the fees set forth on Schedule 1 hereto (the "Fees"). If the Company requests that the Warrant Agent provide additional services not contemplated hereby, the Company shall pay to the Warrant Agent fees for such services at the Warrant Agent's reasonable and customary rates, such fees to be governed by the terms of a separate agreement to be mutually agreed to and entered into by the Parties at such time (the "Additional Service Fee"; together with the Fees, the "Service Fees").

(a) The Company shall reimburse the Warrant Agent for all reasonable and documented expenses incurred by the Warrant Agent (including, without limitation, reasonable and documented fees and disbursements of counsel) in connection with the Services (the "Expenses"); provided, however, that the Warrant Agent reserves the right to request advance payment for any out-of-pocket expenses. The Company agrees to pay all Service Fees and Expenses within thirty (30) days following receipt of an invoice from the Warrant Agent.

(b) The Company agrees and acknowledges that the Warrant Agent may adjust the Service Fees annually, on or about each anniversary date of this Agreement, by the annual percentage of change in the latest Consumer Price Index of All Urban Consumers United States City Average, as published by the U.S. Department of Labor, Bureau of Labor Statistics.

(c) Upon termination of this Agreement for any reason, the Warrant Agent shall assist the Company with the transfer of records of the Company held by the Warrant Agent. The Warrant Agent shall be entitled to reasonable additional compensation and reimbursement of any Expenses for the preparation and delivery of such records to the successor agent or to the Company, and for maintaining records and/or Stock Certificates that are received after the termination of this Agreement (the "Record Transfer Services").

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

NEUROBO PHARMACEUTICALS, INC.

By: _____
Name:
Title:

AMERICAN STOCK TRANSFER & TRUST COMPANY LLC

By: _____
Name:
Title:

Annex A: Form of Warrant Certificate Request Notice

WARRANT CERTIFICATE REQUEST NOTICE

To: American Stock Transfer & Trust Company, LLC, as Warrant Agent for NeuroBo Pharmaceuticals, Inc. (the "Company")

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

1. Name of Holder of Warrants in form of Global Warrants: _____

2. Name of Holder in Warrant Certificate (if different from name of Holder of Warrants in form of Global Warrants): _____

3. Number of Warrants in name of Holder in form of Global Warrants: _____

4. Number of Warrants for which Warrant Certificate shall be issued: _____

5. Number of Warrants in name of Holder in form of Global Warrants after issuance of Warrant Certificate, if any: _____

6. Warrant Certificate shall be delivered to the following address:

_____

_____

_____

_____

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

[SIGNATURE OF HOLDER]

Name of Investing Entity: _____

Signature of Authorized Signatory of Investing Entity: _____

Name of Authorized Signatory: _____

Title of Authorized Signatory: _____

Date: _____

Exhibit 1-A: Form of Warrant Certificate

Schedule 1

Fees

Monthly Warrant Administration Fee (per Warrant Issue)	$____.00

EXCHANGE OF WARRANTS INTO COMMON SHARES

Per Manual Exercise of Warrants (until established on DTC WARR System)	$____.00

SPECIAL SERVICES

Services not included herein (including, without limitation, trustee and custodial services, exchange/tender offer services and stock dividend disbursement services) but requested by the Company may be subject to additional charges.

OUT-OF-POCKET EXPENSES

All customary out-of-pocket expenses will be billed in addition to the foregoing fees. These charges include, but are not limited to, printing and stationery, freight and materials delivery, postage and handling.

The foregoing fees apply to services ordinarily rendered by the Warrant Agent and are subject to reasonable adjustment based on final review of documents.

Exhibit 4.3

COMMON STOCK PURCHASE WARRANT

NEUROBO PHARMACEUTICALS, INC.

Warrant Shares: _____ Initial Exercise Date: _____, 2022

THIS COMMON STOCK PURCHASE WARRANT (the "Warrant") certifies that, for value received, _____ or its assigns (the "Holder") is entitled, upon the terms and subject to the limitations on exercise and the conditions hereinafter set forth, at any time on or after the date hereof (the "Initial Exercise Date") and on or prior to 5:00 p.m. (New York City time) on , 2027 (the "Termination Date") but not thereafter, to subscribe for and purchase from NeuroBo Pharmaceuticals, Inc., a Delaware corporation (the "Company"), up to _____ shares (as subject to adjustment hereunder, the "Warrant Shares") of Common Stock. The purchase price of one share of Common Stock under this Warrant shall be equal to the Exercise Price, as defined in Section 2(b). This Warrant shall initially be issued and maintained in the form of a security held in book-entry form and the Depository Trust Company or its nominee ("DTC") shall initially be the sole registered holder of this Warrant, subject to 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.

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

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

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

"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 of the Company, par value $0.001 per share, and any other class of securities into which such securities may hereafter be reclassified or changed.

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

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

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

"Registration Statement" means the Company's registration statement on Form S-1 (File No. 333-267482).

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

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

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

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

"Transfer Agent" means American Stock Transfer & Trust Company, LLC, the current transfer agent of the Company, with a mailing address of 6201 15th Avenue, Brooklyn, New York 11219 and any successor transfer agent of the Company.

"Underwriting Agreement" means the underwriting agreement, dated as of _____, 2022 among the Company and Ladenburg Thalmann & Co. Inc. as representative of the underwriters named therein, as amended, modified or supplemented from time to time in accordance with its terms.

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

"Warrant Agency Agreement" means that certain warrant agency agreement, dated on or about the Initial Exercise Date, between the Company and the Warrant Agent.

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

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

Section 2. Exercise.

a) Exercise of Warrant. 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 (the "Notice of Exercise"). Within the earlier of (i) two (2) Trading Days and (ii) the number of Trading Days comprising the Standard Settlement Period (as defined in Section 2(d)(i) herein) following the date of exercise as aforesaid, the Holder shall deliver the aggregate Exercise Price for the shares specified in the applicable Notice of Exercise by wire transfer or cashier's check drawn on a United States bank unless the cashless exercise procedure specified in Section 2(c) below is specified in the applicable Notice of Exercise. No ink-original Notice of Exercise shall be required, nor shall any medallion guarantee (or other type of guarantee or notarization) of any Notice of Exercise be required. Notwithstanding anything herein to the contrary, the Holder shall not be required to physically surrender this Warrant to the Company until the Holder has purchased all of the Warrant Shares available hereunder and the Warrant has been exercised in full, in which case, the Holder shall surrender this Warrant to the Company for cancellation within three (3) Trading Days of the date on which the final Notice of Exercise is delivered to the Company. Partial exercises of this Warrant resulting in purchases of a portion of the total number of Warrant Shares available hereunder shall have the effect of lowering the outstanding number of Warrant Shares purchasable hereunder in an amount equal to the applicable number of Warrant Shares purchased. The Holder and the Company shall maintain records showing the number of Warrant Shares purchased and the date of such purchases. The Company shall deliver any objection to any Notice of Exercise within one (1) Business 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 exercise price per share of Common Stock under this Warrant shall be $_____, 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 only 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 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.

In connection with clause (ii) in (A) above, upon written request of the Company, the Holder will provide evidence reasonably acceptable to the Company of the Bid Price of the Common Stock on the principal Trading Market that was reported by Bloomberg L.P. as of the time of the Holder's execution of the applicable Notice of 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, on the Termination Date, this Warrant shall be automatically exercised via cashless exercise pursuant to this Section 2(c).

d) Mechanics of Exercise.

i. Delivery of Warrant Shares Upon Exercise. The Company shall cause the Warrant Shares purchased hereunder to be transmitted by 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, (ii) one (1) Trading Day after delivery of the aggregate Exercise Price to the Company and (iii) the number of Trading Days comprising the Standard Settlement Period after the delivery to the Company of the Notice of Exercise (such date, the "Warrant Share Delivery Date"). Upon delivery of the Notice of Exercise, the Holder shall be deemed for all corporate purposes to have become the holder of record of the Warrant Shares with respect to which this Warrant has been exercised, irrespective of the date of delivery of the Warrant Shares, provided that payment of the aggregate Exercise Price (other than in the case of a cashless exercise) is received within the earlier of (i) two (2) Trading Days and (ii) the number of Trading Days comprising the Standard Settlement Period following delivery of the Notice of Exercise. If the Company fails for any reason to deliver to the Holder the Warrant Shares subject to a Notice of Exercise by the Warrant Share Delivery Date, the Company shall pay to the Holder, in cash, as liquidated damages and not as a penalty, for each $1,000 of Warrant Shares subject to such exercise (based on the VWAP of the Common Stock on the date of the applicable Notice of Exercise), $10 per Trading Day (increasing to $20 per Trading Day on the 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 Common Stock as in effect on the date of delivery of the Notice of Exercise.

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

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

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

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

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

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

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

f) Call Provision. Subject to the provisions of Section 2(e) and this Section 2(f), if, after the Initial Exercise Date, (i) the VWAP during any 20 of 30 consecutive Trading Days (the "Measurement Period," which 30 consecutive Trading Day period shall not have commenced until after the Initial Exercise Date) exceeds $____[1] (subject to adjustment for forward and reverse stock splits, recapitalizations, stock dividends and the like after the Initial Exercise Date), (ii) the average daily volume for such Measurement Period exceeds $500,000.00 per Trading Day and (iii) the Holder is not in possession of any information that constitutes, or might constitute, material non-public information which was provided by the Company, any of its Subsidiaries, or any of their officers, directors, employees, agents or Affiliates, then the Company may, within 1 Trading Day of the end of such Measurement Period, call for cancellation of all or any portion of this Warrant for which a Notice of Exercise has not yet been delivered (such right, a "Call") for consideration equal to $.001 per Warrant Share. To exercise this right, the Company must deliver to the Holder an irrevocable written notice (a "Call Notice"), indicating therein the portion of unexercised portion of this Warrant to which such notice applies. If the conditions set forth below for such Call are satisfied from the period from the date of the Call Notice through and including the Call Date (as defined below), then any portion of this Warrant subject to such Call Notice for which a Notice of Exercise shall not have been received by the Call Date will be cancelled at 6:30 p.m. (New York City time) on the tenth Trading Day after the date the Call Notice is received by the Holder (such date and time, the "Call Date"). Any unexercised portion of this Warrant to which the Call Notice does not pertain will be unaffected by such Call Notice. In furtherance thereof, the Company covenants and agrees that it will honor all Notices of Exercise with respect to Warrant Shares subject to a Call Notice that are tendered through 6:30 p.m. (New York City time) on the Call Date. The parties agree that any Notice of Exercise delivered following a Call Notice which calls less than all of the Warrants shall first reduce to zero the number of Warrant Shares subject to such Call Notice prior to reducing the remaining Warrant Shares available for purchase under this Warrant. For example, if (A) this Warrant then permits the Holder to acquire 100 Warrant Shares, (B) a Call Notice pertains to 75 Warrant Shares, and (C) prior to 6:30 p.m. (New York City time) on the Call Date the Holder tenders a Notice of Exercise in respect of 50 Warrant Shares, then (x) on the Call Date the right under this Warrant to acquire 25 Warrant Shares will be automatically cancelled, (y) the Company, in the time and manner required under this Warrant, will have issued and delivered to the Holder 50 Warrant Shares in respect of the exercises following receipt of the Call Notice, and (z) the Holder may, until the Termination Date, exercise this Warrant for 25 Warrant Shares (subject to adjustment as herein provided and subject to subsequent Call Notices). Subject again to the provisions of this Section 2(f), the Company may deliver subsequent Call Notices for any portion of this Warrant for which the Holder shall not have delivered a Notice of Exercise. Notwithstanding anything to the contrary set forth in this Warrant, the Company may not deliver a Call Notice or require the cancellation of this Warrant (and any such Call Notice shall be void), unless, from the beginning of the Measurement Period through the Call Date, (1) the Company shall have honored in accordance with the terms of this Warrant all Notices of Exercise delivered by 6:30 p.m. (New York City time) on the Call Date, and (2) a registration statement shall be effective as to all Warrant Shares and the prospectus thereunder available for use by the Company for the sale of all such Warrant Shares to the Holder, and (3) the Common Stock shall be listed or quoted for trading on the Trading Market, and (4) there is a sufficient number of authorized shares of Common Stock for issuance of all Warrant Shares, and (5) the issuance of all Warrant Shares subject to a Call Notice shall not cause a breach of any provision of Section 2(e) herein. The Company's right to call the Warrants under this Section 2(f) shall be exercised ratably among the Holders based on each Holder's initial purchase of Warrants.

[1] 300% of the then Exercise Price.

Section 3. Certain Adjustments.

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

b) Subsequent Rights Offerings. In addition to any adjustments pursuant to Section 3(a) above, if at any time the Company grants, issues or sells any Common Stock Equivalents or rights to purchase stock, warrants, securities or other property pro rata to 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).

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 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 (whether by the Company or another Person) is completed pursuant to which holders of Common Stock are permitted to sell, tender or exchange their shares for other securities, cash or property and has been accepted by the holders of 50% or more of the outstanding Common Stock 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 Common Stock or any compulsory share exchange pursuant to which the Common Stock is effectively converted into or exchanged for other securities, cash or property, or (v) the Company, directly or indirectly, in one or more related transactions consummates a stock or share purchase agreement or other business combination (including, without limitation, a reorganization, recapitalization, spin-off, merger or scheme of arrangement) with another Person or group of Persons whereby such other Person or group acquires 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 (each a "Fundamental Transaction"), then, upon any subsequent exercise of this Warrant, the Holder shall have the right to receive, for each Warrant Share that would have been issuable upon such exercise immediately prior to the occurrence of such Fundamental Transaction, at the option of the Holder (without regard to any limitation in Section 2(e) on the exercise of this Warrant), the number of shares of Common Stock of the successor or acquiring corporation or of the Company, if it is the surviving corporation, and any additional consideration (the "Alternate Consideration") receivable as a result of such Fundamental Transaction by a holder of the number of shares of Common Stock for which this Warrant is exercisable immediately prior to such Fundamental Transaction (without regard to any limitation in Section 2(e) on the exercise of this Warrant). For purposes of any such exercise, the determination of the Exercise Price shall be appropriately adjusted to apply to such Alternate Consideration based on the amount of Alternate Consideration issuable in respect of one share of Common Stock in such Fundamental Transaction, and the Company shall apportion the Exercise Price among the Alternate Consideration in a reasonable manner reflecting the relative value of any different components of the Alternate Consideration. If holders of Common Stock are given any choice as to the securities, cash or property to be received in a Fundamental Transaction, then the Holder shall be given the same choice as to the Alternate Consideration it receives upon any exercise of this Warrant following such Fundamental Transaction. The Company shall cause any successor entity in a Fundamental Transaction in which the Company is not the survivor (the "Successor Entity") to assume in writing all of the obligations of the Company under this Warrant in accordance with the provisions of this Section 3(d) pursuant to written agreements 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 Initial Exercise Date.

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 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. Notwithstanding any other provision of this Warrant, as to any Warrant not held in certificated form, where this Warrant provides for notice of any event to a Holder, such notice shall be sufficiently given if given to DTC (or any successor depository) pursuant to the procedures of DTC (or such successor depository).

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

g) 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 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 depositary), 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, in no event shall the Company be required to net cash settle an exercise of this Warrant.

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

c) Saturdays, Sundays, Holidays, etc. If the last or appointed day for the taking of any action or the expiration of any right required or granted herein shall not be a 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 Common Stock a sufficient number of shares to provide for the issuance of the Warrant Shares upon the exercise of any purchase rights under this Warrant. The Company further covenants that its issuance of this Warrant shall constitute full authority to its officers who are charged with the duty of issuing the necessary Warrant Shares upon the exercise of the purchase rights under this Warrant. The Company will take all such reasonable action as may be necessary to assure that such Warrant Shares may be issued as provided herein without violation of any applicable law or regulation, or of any requirements of the Trading Market upon which the Common Stock may be listed. The Company covenants that all Warrant Shares which may be issued upon the exercise of the purchase rights represented by this Warrant will, upon exercise of the purchase rights represented by this Warrant and payment for such Warrant Shares in accordance herewith, be duly authorized, validly issued, fully paid and nonassessable and free from all taxes, liens and charges created by the Company in respect of the issue thereof (other than taxes in respect of any transfer occurring contemporaneously with such issue).

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

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

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

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

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

h) Notices. Any and all notices or other communications or deliveries to be provided by the Holders hereunder including, without limitation, any Notice of Exercise, shall be in writing and delivered personally, by e-mail, or sent by a nationally recognized overnight courier service, addressed to the Company, at _____, Attention: _____, email address: _____, or such other email address or address as the Company may specify for such purposes by notice to the Holders. Any and all notices or other communications or deliveries to be provided by the Company hereunder shall be in writing and delivered personally, by 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 Common Stock or as a stockholder of the Company, whether such liability is asserted by the Company or by creditors of the Company.

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

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

l) Amendment. This Warrant may be modified or amended or the provisions hereof waived with the written consent of the Company, on the one hand, and the Holder or the beneficial owner of this Warrant, 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 Agency Agreement. If this Warrant is held in global form through DTC (or any successor depositary), this Warrant is issued subject to the Warrant Agency Agreement. To the extent any provision of this Warrant conflicts with the express provisions of the Warrant Agency Agreement, the provisions of this Warrant shall govern and be controlling.

****

(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.

NEUROBO PHARMACEUTICALS, INC.

By: _____
Name:
Title:

NOTICE OF EXERCISE

TO: NEUROBO PHARMACEUTICALS, INC.

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

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

☐ in lawful money of the United States; or

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

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

_____

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

_____

_____

_____

[SIGNATURE OF HOLDER]

Name of Investing Entity: _____
Signature of Authorized Signatory of Investing Entity: _____
Name of Authorized Signatory: _____
Title of Authorized Signatory: _____
Date: _____

ASSIGNMENT FORM

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

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

Name: _____
(Please Print)

Address: _____
(Please Print)

Phone Number: _____

Email Address: _____

Dated: _____ __, _____

Holder's Signature: _____

Holder's Address: _____

Exhibit 5.1

HONIGMAN

(269) 337-7700

October 24, 2022

NeuroBo Pharmaceuticals, Inc.
200 Berkeley Street, 19th Floor
Boston, Massachusetts 02116

Re: Registration Statement on Form S-1

Ladies and Gentlemen:

We have acted as counsel to NeuroBo Pharmaceuticals, Inc., a Delaware corporation (the "***Company***"), in connection with preparing and filing with the Securities and Exchange Commission (the "***Commission***") pursuant to the Securities Act of 1933, as amended (the "***Securities Act***"), of a Registration Statement on Form S-1 (File No. 333-267482) and each amendment thereto (collectively, as amended and supplemented from time to time, the "***Registration Statement***") relating to the offer and sale by the Company of up to $17,250,000 in the aggregate sale price of (i) Class A Units, consisting of (A) one share of the Company's common stock (collectively, for all Class A Units, the "***Common Shares***"), par value $0.001 per share (the "***Common Stock***") and (B) one immediately exercisable warrant to purchase shares of Common Stock ("***Class A Warrants***"), (ii) for some purchasers, Class B Units, consisting of (A) one share of Series B Convertible Preferred Stock, par value $0.001 per share (collectively, for all Class B Units, the "***Preferred Shares***"), each Preferred Share will be convertible into a number of shares of Common Stock equal to $1,000 divided by the conversion price (the "***Conversion Shares***") and (B) one immediately exercisable warrant to purchase shares of Common Stock (the "***Class B Warrants,***" and together with the Class A Warrants, the "***Warrants***"), one Class B Warrant to be issued for each Preferred Share purchased, (iii) the Conversion Shares, and (iv) the shares of Common Stock issuable upon exercise of the Warrants (the "***Warrant Shares***," and together with the Common Shares, Preferred Shares, Conversion Shares and Warrants, the "***Securities***"). The Class A Units and the Class B Units (together, the "***Units")*** are to be sold to the underwriters for resale to the public as described in the Registration Statement and pursuant to the underwriting agreement referred to in the Registration Statement (the "***Underwriting Agreement***"). Pursuant to the Certificate of Designation (the "***Certificate of Designation***") establishing the powers, designations, preferences and rights of the Series B Convertible Preferred Stock, par value $0.001 per share (the "***Preferred Stock***"), to be filed in connection with the offering contemplated by the Registration Statement and the Company's Third Amended and Restated Certificate of Incorporation, as amended (the "***Certificate of Incorporation***"), the Preferred Shares will be convertible into shares of Common Stock. We have assumed that the sale of the Units, including the underlying Common Shares, Preferred Shares and Warrants, by the Company, the conversion price of the Preferred Shares and the exercise price of the Warrants will be at prices, and the number of Warrant Shares subject to each Class A Warrant and Class B Warrant will be, established by the Transaction Committee of the Board of Directors of the Company and at prices no less than the minimum price and amounts no more than the maximum amount authorized by the Board of Directors as of the date hereof, in accordance with the Delaware General Corporation Law. We have also assumed that, at the time of exercise of the warrants underlying the Units or conversion of the Preferred Shares, (i) the underlying shares of Common Stock will be properly delivered to the persons exercising the Warrants or converting the Preferred Shares, and (ii) at the time of exercise of the Warrants or conversion of the Preferred Shares, the consideration for the issuance and sale of the Common Stock in connection with such exercise or conversion plus any purchase price for the applicable Warrant or share of Preferred Stock is an amount that is not less than the par value of the Common Stock. With respect to the Conversion Shares and the Warrant Shares, we express no opinion to the extent that, notwithstanding the Company's current reservation of shares of Common Stock, future issuances of securities of the Company, including Conversion Shares and Warrant Shares, and/or antidilution adjustments to outstanding securities of the Company, including the Warrants and Preferred Shares, may cause the Preferred Shares to be convertible into, or the Warrants to be exercisable for, more shares of Common Stock than the number that then remain authorized but unissued and available for issuance.

For the purpose of rendering this opinion, we examined originals or copies of such documents as we deemed relevant. In conducting our examination, we assumed, without investigation, the genuineness of all signatures, the correctness of all certificates, the authenticity of all documents submitted to us as originals, the conformity to original documents of all documents submitted as certified or photostatic copies, and the authenticity of the originals of such copies, and the accuracy and completeness of all records made available to us by the Company. In addition, in rendering this opinion, we have assumed that the Units (including the Common Shares, Preferred Shares and Warrants included in the Units), and the shares of Common Stock underlying the Warrants and Preferred Shares of Preferred Stock included in the Units, will be offered in the manner and on the terms identified or referred to in the Registration Statement, including all supplements and amendments thereto, and the Underwriting Agreement.

Our opinions are limited solely to matters set forth herein. The law covered by the opinions expressed herein is limited to New York law applicable to contracts and the Delaware General Corporation Law. We express no opinion as to whether the laws of any particular jurisdiction are applicable to the subject matter hereof. We are not rendering any opinion with respect to federal law, including federal securities laws, or state blue sky securities laws.

Based on our examination of such documents and other matters as we deem relevant, we are of the opinion that:

1. After the Certificate of Designation has been properly filed with the Delaware Secretary of State, the Preferred Shares included in the Units and covered by the Registration Statement, when offered, sold, issued and delivered by the Company as described in the Registration Statement and the related prospectus and in accordance with, and in the manner set forth in, the Underwriting Agreement (including, without limitation, the payment in full of all applicable consideration therefor), will be validly issued, fully paid and non-assessable.

2. The Common Shares included in the Units and covered by the Registration Statement, when offered, sold, issued and delivered by the Company as described in the Registration Statement and the related prospectus and in accordance with, and in the manner set forth in, the Underwriting Agreement, against payment therefor (including, without limitation, the payment in full of all applicable consideration therefor), will be validly issued, fully paid and non-assessable.

3. The Conversion Shares issuable upon conversion of the Preferred Shares included in the Units and covered by the Registration Statement, when they and the Preferred Shares are offered, sold, issued and delivered by the Company and such Preferred Shares are validly converted as described in the Registration Statement and the related prospectus and in accordance with, and in the manner set forth in, the Underwriting Agreement and the Company's Certificate of Incorporation, including the Certificate of Designation, (including, without limitation, the payment in full of all applicable consideration therefor, including the purchase price for such Preferred Shares, and the issuance and delivery to the persons converting such Preferred Shares of the underlying Conversion Shares duly registered on the books of the transfer agent and registrar therefor in the name of or on behalf of the holder of such Preferred Shares), will be validly issued, fully paid and non-assessable.

4. The Warrant Shares issuable upon exercise of the Warrants included in the Units and covered by the Registration Statement, when they and such Warrants are offered, sold, issued and delivered by the Company and such Warrants are validly exercised as described in the Registration Statement and the related prospectus and in accordance with, and in the manner set forth in, the Underwriting Agreement and such Warrants (including, without limitation, the payment in full of all applicable consideration therefor, including the purchase price for such Warrant and the exercise price of such Warrant, and the issuance and delivery to the persons exercising such Warrants of the underlying Warrant Shares duly registered on the books of the transfer agent and registrar therefor in the name of or on behalf of the holder of such Warrants), will be validly issued, fully paid and non-assessable.

5. When the Warrants covered by the Registration Statement and issued as part of the Units have been offered, sold, issued, duly executed and delivered by the Company as described in the Registration Statement and the related prospectus, and in accordance with, and in the manner set forth in, the Underwriting Agreement and such Warrants (including, without limitation, the payment in full of all applicable consideration therefor), against payment therefor, such Warrants will constitute binding obligations of the Company, except as limited by bankruptcy, insolvency, moratorium, reorganization, fraudulent transfer, voidable transaction or other laws relating to or affecting the enforcement of creditors' rights generally, and subject to general principles of equity, regardless of whether considered in a proceeding at law or in equity.

6. After the Certificate of Designation has been properly filed with the Delaware Secretary of State, the Units covered by the Registration Statement, when offered, sold, issued and delivered by the Company as described in the Registration Statement and the related prospectus and in accordance with, and in the manner set forth in, the Underwriting Agreement (including, without limitation, the payment in full of all applicable consideration therefor), against payment therefor, will be validly issued, fully paid and non-assessable.

We hereby consent to the filing of this opinion as Exhibit 5.1 to the Registration Statement and to the reference to our firm under the caption "Legal Matters" in the Registration Statement. In giving such consent, we do not admit that we are within the category of persons whose consent is required by Section 7 of the Securities Act or the rules and regulations promulgated thereunder by the Commission. This opinion is expressed as of the date hereof, and we disclaim any undertaking to advise you of any subsequent changes in the facts stated or assumed herein or of any subsequent changes in applicable law.

Very truly yours,

/s/ Honigman LLP

Honigman LLP

PDT/SK/JVK/GDPA/RZK/GSWA

Exhibit 23.1

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One International Place
Boston, MA 02110

Consent of Independent Registered Public Accounting Firm

NeuroBo Pharmaceuticals, Inc.
Boston, MA

We hereby consent to the incorporation by reference in the Prospectus constituting a part of this Registration Statement of our report dated March 31, 2022, relating to the consolidated financial statements of NeuroBo Pharmaceuticals, Inc. appearing in the Company's Annual Report on Form 10-K for the year ended December 31, 2021. Our report contains an explanatory paragraph regarding the Company's ability to continue as a going concern.

We also consent to the reference to us under the caption "Experts" in the Prospectus.

/s/ BDO, USA LLP

Boston, Massachusetts

October 24, 2022

Exhibit 107

Calculation of Filing Fee Table

FORM S-1
(Form Type)

NeuroBo Pharmaceuticals, Inc.
(Exact Name of Registrant as Specified in its Charter)

Newly Registered Securities

	Security Type	Security Class Title	Fee Calculation or Carry Forward Rule	Amount Registered	Proposed Maximum Offering price Maximum Aggregate Offering Price Per Unit	Maximum Aggregate Offering Price (1)(3)	Fee Rate	Amount of Registration Fee
Fees to Be Paid								
	Equity	Class A Units, consisting of (i) shares of Common Stock, par value $0.001 per share and (ii) Warrants to purchase Common Stock				$ 10,350,000		
	Equity	Common Stock, par value $0.001 per share (2)	Rule 457(o)				$110.20 per $1,000,000	
	Equity	Warrants to purchase Common Stock included in the Class A Units (2)(4)						
	Equity	Class B Units, consisting of (i) shares of Series B Convertible Preferred Stock, par value $0.001 per share, (ii) Common Stock issuable on conversion of Series B Convertible Preferred Stock, and (iii) Warrants to purchase Common Stock	Rule 457(o)			$ 6,900,000	$110.20 per $1,000,000	
	Equity	Series B Convertible Preferred Stock, par value $0.001 per share (2)						
	Equity	Common Stock issuable upon conversion of Series B Convertible Preferred Stock (2)(5)						
	Equity	Warrants to purchase Common Stock included in the Class B Units (2)(4)						
	Equity	Shares of Common Stock issuable upon exercise of Warrants (2)				$ 17,250,000		
Total Offering Amounts						$ 34,500,000		$ 4,150.00
Total Fees Previously Paid								$ 1,390.50
Total Fee Offsets								$ 0.00
Net Fee Due								**$ 2,749.50**

(1) Estimated solely for the purpose of calculating the amount of the registration fee in accordance with Rule 457(i) and Rule 457(o) under the Securities Act of 1933 (the "Securities Act").
(2) Pursuant to Rule 416 under the Securities Act, the securities registered hereby also include an indeterminate number of additional securities as may from time to time become issuable by reason of stock splits, stock dividends, recapitalizations, or other similar transactions.
(3) Includes the price of additional shares of Common Stock and/or Warrants that may be issued upon exercise of the option granted to the underwriter to cover over-allotments, if any.
(4) No registration fee required pursuant to Rule 457(g).
(5) No registration fee required pursuant to Rule 457(i).