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

FORM S-1
REGISTRATION STATEMENT
UNDER
THE SECURITIES ACT OF 1933

WINDTREE THERAPEUTICS, INC.
(Exact name of registrant as specified in its charter)

Delaware
(State or other jurisdiction of
incorporation or organization)

2836
(Primary Standard Industrial
Classification Code Number)

94-3171943
(I.R.S. Employer
Identification Number)

2600 Kelly Road, Suite 100
Warrington, Pennsylvania 18976
(215) 488-9300

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

Craig E. Fraser
President and Chief Executive Officer
Windtree Therapeutics, Inc.
2600 Kelly Road, Suite 100
Warrington, Pennsylvania 18976
(215) 488-9300

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

Copies to:

Rachael M. Bushey, Esq.
Jennifer L. Porter, Esq.
Justin S. Platt, Esq.
Goodwin Procter LLP
One Commerce Square
2005 Market Street, 32nd Floor
Philadelphia, Pennsylvania
19103
(445) 207-7800

Jamie McAndrew
Vice President, Controller & Chief
Accounting Officer
Windtree Therapeutics, Inc.
2600 Kelly Road, Suite 100
Warrington, Pennsylvania 18976
(215) 488-9300

Approximate date of commencement of proposed sale to the public: As soon as practicable after the effective date of this Registration Statement.
If any of the securities being registered on this Form are to be offered on a delayed or continuous basis pursuant to Rule 415 under the Securities Act of 1933, check the following box.

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

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

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

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Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a 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	<input type="checkbox"/>	Accelerated filer	<input type="checkbox"/>
Non-accelerated filer	<input checked="" type="checkbox"/>	Smaller reporting company	<input checked="" type="checkbox"/>
		Emerging growth company	<input type="checkbox"/>

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.

The information in this preliminary prospectus is not complete and may be changed. We may not sell these securities until the registration statement filed with the Securities and Exchange Commission is effective. This preliminary prospectus is not an offer to sell these securities and it is not soliciting an offer to buy these securities in any jurisdiction where the offer or sale is not permitted.

SUBJECT TO COMPLETION, DATED MAY 9, 2024

PRELIMINARY PROSPECTUS



**Shares of Common Stock and Accompanying
Common Warrants to Purchase up to Shares of Common Stock
or
Pre-Funded Warrants to Purchase up to Shares of Common Stock and Accompanying
Common Warrants to Purchase up to Shares of Common Stock
and
Up to Shares of Common Stock Issuable Upon Exercise of the Pre-Funded Warrants and
Common Warrants**

We are offering shares of our common stock, par value \$0.001, or common stock, and warrants to purchase up to shares of common stock, or the common warrants, pursuant to this prospectus. The combined public offering price for each share of our common stock, together with a common warrant to purchase one share of common stock, is \$. Each common warrant will have an exercise price of \$ per share, will be exercisable immediately and will expire on the fifth anniversary of the date of issuance. The shares of our common stock and the common warrants are immediately separable and will be issued separately, but will be purchased together in this offering. This prospectus also relates to the offering of the shares of common stock issuable upon exercise of the common warrants.

We are also offering pre-funded warrants to purchase up to an aggregate of shares of common stock, or the pre-funded warrants, in lieu of shares of common stock to those purchasers whose purchase of shares of common stock in this offering would 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 following the consummation of this offering. A holder of pre-funded warrants will not have the right to exercise any portion of its pre-funded warrants if the holder, together with its affiliates and certain related parties, would beneficially own in excess of 4.99% (or, at the election of the holder, 9.99%) of the number of shares of common stock outstanding immediately after giving effect to such exercise. Each pre-funded warrant is exercisable for one share of our common stock. Each pre-funded warrant is being issued together with the same common warrant described above being issued with each share of common stock. For each pre-funded warrant that we sell, the number of shares of common stock that we are selling will be decreased on a one-for-one basis. The combined public offering price of each pre-funded warrant, together with the accompanying common warrant, is \$. The pre-funded warrants are immediately exercisable and may be exercised at any time until all of the pre-funded warrants are exercised in full. The pre-funded warrants and the common warrants are immediately separable and will be issued separately, but will be purchased together in this offering. In this prospectus, we refer to the common warrants and pre-funded warrants together as the “warrants”. This prospectus also relates to the offering of common stock issuable upon exercise of such warrants. We collectively refer to the shares of common stock and warrants offered hereby and the shares of common stock underlying the warrants as the “securities.”

There is no established public trading market for the warrants, and we do not expect a market to develop. We do not intend to apply for listing of the warrants on any securities exchange or other nationally recognized trading system. Without an active trading market, the liquidity of the warrants will be limited. Our common stock is listed on the Nasdaq Capital Market under the symbol “WINT”. On _____, 2024, the last reported sale price of our common stock on the Nasdaq Capital Market was \$ _____ per share. We have assumed a public offering price of \$ _____ per share of common stock together with a common warrant to purchase one share of common stock, which represents the last reported sale price of our common stock as reported on the Nasdaq Capital Market on _____, 2024. 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 recent market price used throughout this prospectus may not be indicative of the final public offering price. The price of our common stock on the Nasdaq Capital Market during recent periods will only be one of many factors in determining the final public offering price. Other factors to be considered in determining the final public offering price include our history, our prospects, the industry in which we operate, our past and present operating results, the previous experience of our executive officers and directors, the general condition of the securities markets at the time of this offering and discussions between the underwriters and prospective investors.

We are a “smaller reporting company” as defined under the federal securities laws and, as such, have elected to comply with certain reduced public company reporting requirements for this prospectus and the documents incorporated by reference herein and may elect to comply with reduced public company reporting requirements in future filings. See “*Prospectus Summary — Implications of Being a Smaller Reporting Company.*”

Investing in our securities involves a high degree of risk. Before deciding whether to invest in our securities, you should consider carefully the risks that we have described beginning on page 6 of this prospectus under the caption “*Risk Factors*”, and under similar headings in any amendment or supplement to this prospectus or in any other documents incorporated by reference into this prospectus.

	Per Share and Accompanying Common Warrant	Per Pre-Funded Warrant and Accompanying Common Warrant	Total
Public offering price	\$	\$	\$
Underwriting discounts and commissions(1)	\$	\$	\$
Proceeds to us, before expenses(2)	\$	\$	\$

- (1) We have agreed to reimburse the underwriters for certain expenses. See “*Underwriting*” on page 27 for additional information regarding underwriting compensation.
- (2) The above summary of offering proceeds does not give effect to any proceeds from the exercise of the warrants being issued in this offering.

We have granted the underwriters an option for a period of up to _____ days from the date of this prospectus to purchase up to _____ additional shares of our common stock at the public offering price of \$ _____ per share, and/or common warrants to purchase up to _____ shares of our common stock at the public offering price of \$ _____ per common warrant, or any combination thereof, as determined by the underwriters, less underwriting discounts and commissions, in each case solely to cover over-allotments, if any.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or passed upon the adequacy or accuracy of this prospectus. Any representation to the contrary is a criminal offense.

The underwriters expect to deliver the securities against payment in New York, NY on or about _____, 2024.

Prospectus dated _____, 2024

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ABOUT THIS PROSPECTUS

The registration statement we filed with the Securities and Exchange Commission, or the SEC, includes exhibits that provide more detail of the matters discussed in this prospectus. You should read this prospectus, the related exhibits filed with the SEC, and the documents incorporated by reference herein before making your investment decision. You should rely only on the information provided in this prospectus and the documents incorporated by reference herein or any amendment thereto.

You should not assume that the information contained in this prospectus or any related free writing prospectus is accurate on any date subsequent to the date set forth on the front of the document or that any information we have incorporated by reference herein or therein is correct on any date subsequent to the date of the document incorporated by reference, even though this prospectus or any related free writing prospectus is delivered, or securities are sold, on a later date. This prospectus contains or incorporates by reference summaries of certain provisions contained in some of the documents described herein, but reference is made to the actual documents for complete information. All of the summaries are qualified in their entirety by the actual documents. Copies of some of the documents referred to herein have been or will be filed or have been or will be incorporated by reference as exhibits to the registration statement of which this prospectus forms a part, and you may obtain copies of those documents as described in this prospectus under the heading “*Where You Can Find More Information.*”

You should rely only on the information that we have included or incorporated by reference in this prospectus and any related free writing prospectus that we may authorize to be provided to you. We have not, and the underwriters have not, authorized anyone to give any information or to make any representation other than those contained or incorporated by reference in this prospectus or any related free writing prospectus that we may authorize to be provided to you. You must not rely upon any information or representation not contained or incorporated by reference in this prospectus or any related free writing prospectus. This prospectus and any related free writing prospectus do not constitute an offer to sell or the solicitation of an offer to buy any securities other than the registered securities to which they relate, nor do this prospectus or any related free writing prospectus constitute an offer to sell or the solicitation of an offer to buy securities in any jurisdiction to any person to whom it is unlawful to make such offer or solicitation in such jurisdiction.

In addition, while we believe the industry, market and competitive position data included in this prospectus, including the information incorporated by reference herein is reliable and based on reasonable assumptions, such data involve risks and uncertainties and are subject to change based on various factors. These factors could cause results to differ materially from those expressed in the estimates made by the independent parties or by us.

Unless the context otherwise requires, references in this prospectus to “Windtree,” “Windtree Therapeutics,” “the Company,” “we,” “our,” and “us” refer to Windtree Therapeutics, Inc., a Delaware corporation, and our consolidated subsidiaries.

We use “Windtree Therapeutics,” as our trademark, and we have been granted a trademark or have a trademark application on file with the United States Patent and Trademark Office. All trademarks or trade names referred to in this prospectus and the documents incorporated by reference herein are the property of their respective owners. Solely for convenience, the trademarks and trade names in this prospectus and the documents incorporated by reference herein 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.

PROSPECTUS SUMMARY

This summary highlights information contained elsewhere in this prospectus. This summary is not complete and does not contain all of the information you should consider in making your investment decision. You should carefully read the entire prospectus, including the risks of investing in our securities discussed under the heading “Risk Factors” and under similar headings in the other documents that are incorporated by reference into this prospectus. You should also carefully read the information incorporated by reference into this prospectus, including our financial statements, and the exhibits to the registration statement of which this prospectus is a part. Unless the context otherwise requires, the terms “Windtree”, “the Company,” “we,” “us,” “our” and similar references in this prospectus refer to Windtree Therapeutics, Inc. and its consolidated subsidiaries.

Overview

We are a biotechnology company focused on advancing early and late-stage innovative therapies for critical conditions and diseases. Our portfolio of product candidates includes istaroxime, a Phase 2 candidate with sarco endoplasmic reticulum Ca²⁺ -ATPase 2a, or SERCA2a, activating properties for acute heart failure and associated cardiogenic shock, preclinical SERCA2a activators for heart failure, rostafuroxin for the treatment of hypertension in patients with a specific genetic profile, and a preclinical atypical protein kinase C iota, or aPKCi, inhibitor (topical and oral formulations), being developed for potential application in rare and broad oncology indications. We also have a licensing business model with partnership out-licenses currently in place.

Our lead product candidate, istaroxime, is a first-in-class, dual-acting agent being developed to increase blood pressure and improve cardiac function in patients with cardiogenic shock and to improve cardiac function in patients with acute heart failure, or AHF, and reverse the hypotension and hypoperfusion associated with heart failure that deteriorates to cardiogenic shock. Istaroxime demonstrated significant improvement in both systolic and diastolic aspects of cardiac function and was generally well tolerated in three Phase 2 clinical trials. Istaroxime has been granted Fast Track designation for the treatment of AHF by the U.S. Food and Drug Administration, or FDA. Based on the profile observed in our Phase 2 clinical studies in AHF, where istaroxime significantly improved cardiac function and systolic blood pressure, or SBP, in acute decompensated heart failure patients and had a favorable renal profile, we initiated a Phase 2 global clinical study, or the SEISMic Study, to evaluate istaroxime for the treatment of early cardiogenic shock (Society for Cardiovascular Angiography and Interventions, or SCAI, Stage B shock), a severe form of AHF characterized by very low blood pressure and risk for hypoperfusion to critical organs and mortality. In April 2022, we announced our observations in the SEISMic Study that istaroxime rapidly and significantly increased SBP while also improving cardiac function and preserving renal function. We believe that istaroxime has the potential to fulfill an unmet need in early and potentially more severe cardiogenic shock. We further believe that the data from the SEISMic Study supports continued development in both cardiogenic shock and AHF. In the fourth quarter of 2023, we initiated an extension to the SEISMic Study, or the SEISMic Extension, to evaluate a longer dosing period and to continue to characterize the effects of istaroxime, including activation of SERCA2a. The SEISMic Extension study is expected to enroll up to 30 subjects with SCAI Stage B cardiogenic shock with data anticipated in the second half of 2024. Additionally, we have recently initiated a small study in more severe SCAI Stage C cardiogenic shock, or SEISMic C, to evaluate the safety and efficacy of istaroxime in cardiogenic shock patients who are also receiving standard of care rescue therapy for shock. The SEISMic C study is expected to enroll up to 20 subjects with SCAI Stage C cardiogenic shock with enrollment anticipated to be completed in late 2024. Our ability to complete both of these studies with their intended sample size is dependent upon us securing adequate resourcing for the program through financing efforts or business development activities.

Our heart failure cardiovascular portfolio also includes SERCA2a activators. This research program is evaluating these preclinical product candidates, including oral and intravenous SERCA2a activator heart failure compounds. These candidates would potentially be developed for both acute decompensated and chronic out-patient heart failure. In addition, our cardiovascular drug product candidates include rostafuroxin, a novel product candidate for the treatment of hypertension in patients with a specific genetic profile. We are pursuing potential licensing arrangements and/or other strategic partnerships and do not intend to advance rostafuroxin without securing such an arrangement or partnership.

Our cardiovascular assets and programs are associated with a regional licensed partnership with Lee's Pharmaceutical (HK) Ltd., or Lee's (HK), for the development and commercialization of our product candidate, istaroxime, in Greater China. In addition to istaroxime, the agreement also licenses our preclinical next-generation SERCA2a activators, known as dual mechanism SERCA2a activators, and rostafuroxin, a Phase 2 product candidate for hypertension associated with specific genotypes. In addition, we are supporting the efforts of Lee's (HK) in starting a Phase 3 trial in AHF with istaroxime. Further, we are engaged in discussions regarding potential global licensing partnerships outside of Lee's (HK) territory.

On April 2, 2024, we entered into an Asset Purchase Agreement, or the Asset Purchase Agreement, with Varian Biopharmaceuticals, Inc., or Varian. Pursuant to the Asset Purchase Agreement, we purchased all of the assets of Varian's business associated with a Licence Agreement, dated as of July 5, 2019, by and between Varian and Cancer Research Technology Limited, or the Licence Agreement, including the Licence Agreement, all rights in molecules and compounds subject to the Licence Agreement, know-how and inventory of drug substance, or the Transferred Assets. The Transferred Assets include a novel, potential high-potency, specific, aPKCi with possible broad use in oncology as well as certain rare malignant diseases. The asset platform includes two formulations (topical and oral) of an aPKCi inhibitor. We plan to advance investigational new drug enabling activities and are in the process of determining the expected clinical development plan for the platform.

Our ability to advance our development programs is dependent upon our ability to secure additional capital in both the near and long-term, through public or private securities offerings; convertible debt financings; and/or potential strategic opportunities, including licensing agreements, drug product development, and marketing collaboration arrangements, pharmaceutical research cooperation arrangements, and/or other similar transactions in geographic markets, including the U.S., and/or through potential grants and other funding commitments from U.S. government agencies, in each case, if available. We have engaged with potential counterparties in various markets and will continue to pursue non-dilutive sources of capital as well as potential private and public securities offerings. There can be no assurance, however, that we will be able to identify and enter into public or private securities offerings on acceptable terms and in amounts sufficient to meet our needs or qualify for non-dilutive funding opportunities under any grant programs sponsored by U.S. government agencies, private foundations, and/or leading academic institutions, or identify and enter into any strategic transactions that will provide the additional capital that we will require. If none of these alternatives is available, or if available and we are unable to raise sufficient capital through such transactions, we potentially could be forced to limit or cease our development activities, which would have a material adverse effect on our business, financial condition, and results of operations.

Corporate Information

We were incorporated in Delaware on November 6, 1992. Our principal executive offices are located at 2600 Kelly Road, Suite 100, Warrington, Pennsylvania 18976, and our telephone number is (215) 488-9300. Our website address is www.windtreetx.com. The information on, or that can be accessed through, our website is not part of this prospectus and is not incorporated by reference herein and you should not consider it part of this prospectus. We have included our website address as an inactive textual reference only.

Implications of Being a Smaller Reporting Company

We are a smaller reporting company as defined in the Securities Exchange Act of 1934, as amended, or the Exchange Act. We may take advantage of certain of the scaled disclosures available to smaller reporting companies and will be able to take advantage of these scaled disclosures for so long as (i) the market value of our voting and non-voting common stock held by non-affiliates is less than \$250 million measured on the last business day of our second fiscal quarter or (ii) our annual revenue is less than \$100 million during the most recently completed fiscal year and the market value of our voting and non-voting common stock held by non-affiliates is less than \$700 million measured on the last business day of our second fiscal quarter. Specifically, as a smaller reporting company, we may choose to present only the two most recent fiscal years of audited financial statements in our Annual Reports on Form 10-K and have reduced disclosure obligations regarding executive compensation, and, as long as we are a smaller reporting company with less than \$100 million in annual revenue, we are not required to obtain an attestation report on internal control over financial reporting from our independent registered public accounting firm.

Recent Developments

Going Concern

Our auditor has included a “going concern” explanatory paragraph in its report on our consolidated financial statements for the fiscal year ended December 31, 2023, expressing substantial doubt about our ability to continue as a going concern for the next twelve months. Our consolidated financial statements do not include any adjustments that may result from the outcome of this uncertainty.

Our management has concluded that substantial doubt exists about our ability to continue as a going concern for one year from the date of this prospectus. We do not expect that the net proceeds from this offering will be sufficient to allow us to continue as a going concern for one year from the date of this prospectus. If we were to receive net proceeds of approximately \$ _____ from this offering, we believe that the net proceeds from this offering, together with our existing cash and cash equivalents, will meet our capital needs through _____ and support our continued clinical development of istaroxime in cardiogenic shock, the preclinical development of our atypical protein kinase C iota, or aPKCi, inhibitor asset platform and for working capital and general corporate purposes. If we cannot secure the financing needed to continue as a viable business, our stockholders may lose some or all of their investment in us.

Reverse Stock Split

On April 19, 2024, we filed an amendment to our Amended and Restated Certificate of Incorporation, as amended, with the Secretary of State of the State of Delaware to effect a reverse stock split of our common stock at a rate of one for eighteen (1-for-18), which was effected at 11:59 p.m. Eastern Time on April 19, 2024. The reverse stock split does not have any impact on the number of authorized shares of common stock. Unless otherwise noted, the share and per share information in this prospectus reflects the reverse stock split of our outstanding common stock at a one for eighteen (1-for-18) ratio.

The Offering

The following summary contains basic information about this offering. The summary is not intended to be complete. You should read the full text and more specific details contained elsewhere in this prospectus.

Common stock to be offered	_____ shares of common stock or _____ additional shares in full.	_____ shares if the underwriters exercise their option to purchase
Common warrants	We are also offering common warrants to purchase up to _____ shares of common stock. The exercise price of each common warrant will be \$ _____ per share. Each common warrant will be immediately exercisable upon issuance for a five-year period after the date of issuance. This prospectus also relates to the offering of the common stock issuable upon exercise of such common warrants. See “ <i>Description of the Securities We are Offering</i> ” on page 24 of this prospectus. You should also read the form of common warrant, which is filed as an exhibit to the registration statement that includes this prospectus.	
Pre-funded warrants	We are also offering pre-funded warrants to purchase up to _____ shares of common stock. The purchase price of each pre-funded warrant is equal to the price at which the share of common stock is being sold to the public in this offering, minus \$0.001, and the exercise price of each pre-funded warrant is \$0.001 per share. The pre-funded warrants are exercisable immediately and may be exercised at any time until all of the pre-funded warrants are exercised in full. This offering also relates to the shares of common stock issuable upon exercise of the pre-funded warrants sold in this offering. See “ <i>Description of the Securities We are Offering</i> ” on page 24 of this prospectus. You should also read the form of pre-funded warrant, which is filed as an exhibit to the registration statement that includes this prospectus.	

Common stock to be outstanding after this offering	shares, or shares if the underwriters exercise their option to purchase additional shares in full.
Option to purchase additional shares of common stock and common warrants	We have granted the underwriters an option for a period of up to days from the date of this prospectus to purchase up to additional shares of our common stock and/or common warrants to purchase up to shares of our common stock, in any combination thereof, from us at the public offering price per share and per common warrant, less underwriting discounts and commissions, in each case solely to cover over-allotments, if any.
Use of proceeds	We intend to use the net proceeds from this offering to support our continued clinical development of istaroxime in cardiogenic shock, the preclinical development of our aPKCi inhibitor asset platform and for working capital and general corporate purposes. See “ <i>Use of Proceeds</i> ” on page 15 of this prospectus.
Lock-up restrictions	We, and each of our directors and officers, are subject to certain lock-up restrictions as identified in the section titled “ <i>Underwriting</i> .”
Risk factors	You should read the section entitled “ <i>Risk Factors</i> ” beginning on page 6 and the documents incorporated by reference in this prospectus for a discussion of factors to consider carefully before deciding to invest in our securities.
Nasdaq Capital Market symbol	Our shares of common stock are traded on The Nasdaq Capital Market under the symbol “WINT”. There is no established public trading market for the warrants, and we do not expect a market to develop. We do not intend to apply for listing of the warrants on any securities exchange or other nationally recognized trading system. Without an active trading market, the liquidity of the warrants will be limited.
Transfer Agent and Registrar	Continental Stock Transfer and Trust Company

The number of shares of our common stock to be outstanding after this offering is based on shares of common stock outstanding as of March 31, 2024, assumes no exercise of any warrants offered hereby, and excludes:

- shares of our common stock issuable upon the exercise of outstanding warrants as of March 31, 2024, with a weighted-average exercise price of \$ per share;
- shares of our common stock issuable upon the exercise of outstanding stock options as of March 31, 2024, with a weighted-average exercise price of \$ per share;
- shares of our common stock issuable upon the exercise of outstanding restricted stock units as of March 31, 2024, with a weighted-average grant date fair value of \$ per share; and
- shares of our common stock reserved for future issuance under our 2020 Equity Incentive Plan, as amended, or 2020 Plan, plus any future increases in the number of shares of common stock reserved for issuance.

Except otherwise indicated, the information in this prospectus assumes no exercise of the outstanding options or warrants described above or sold in this offering, and no exercise by the underwriters of their option to purchase additional shares of our common stock and/or common warrants.

RISK FACTORS

Investing in our securities involves a high degree of risk. You should carefully consider the risks described below, and those discussed under the section entitled “Risk Factors” contained in our 2023 Annual Report and our subsequent Quarterly Reports, together with other information in this prospectus, the information and documents incorporated by reference herein, and in any free writing prospectus that we have authorized for use in connection with this offering. The occurrence of any of the events or developments described below could materially and adversely affect our business, financial condition, results of operations and prospects. In such an event, the market price of our common stock could decline and you may lose all or part of your investment.

Risks Related to Our Financial Condition

Our current cash position, losses, negative cash flows from operations, and accumulated deficit raise substantial doubt about our ability to continue as a going concern absent obtaining adequate new debt or equity financings.

The auditor’s opinion on our audited financial statements for the year ended December 31, 2023 includes an explanatory paragraph stating that we have incurred recurring losses from operations that raise substantial doubt about our ability to continue as a going concern. Management has also concluded that substantial doubt exists about our ability to continue as a going concern. As of December 31, 2023, we had cash and cash equivalents of \$4.3 million and current liabilities of \$4.0 million. In April 2024, we entered into a Securities Purchase Agreement, or the Purchase Agreement, with the buyers named therein, pursuant to which we agreed to sell senior convertible notes, or the Notes, for \$1.5 million of gross proceeds. As a result, we believe that we have sufficient resources available to fund our business operations through April 2024. We do not have sufficient cash and cash equivalents as of the date of this prospectus to support our operations for at least the 12 months following the date of this prospectus. These conditions raise substantial doubt about our ability to continue as a going concern. We believe, that based on the anticipated net proceeds of approximately \$ [redacted] that we will receive from this offering, together with our existing cash and cash equivalents, we will meet our capital needs through [redacted] and support our continued clinical development of istaroxime in cardiogenic shock, the preclinical development of our aPKCi inhibitor asset platform and for working capital and general corporate purposes.

To alleviate the conditions that raise substantial doubt about our ability to continue as a going concern, management plans to secure additional capital, potentially through a combination of public or private securities offerings; convertible debt financings; and/or strategic transactions, including potential licensing arrangements, alliances and drug product collaborations focused on specified geographic markets; however, none of these alternatives are committed at this time. There can be no assurance that we will be successful in obtaining sufficient funding on terms acceptable to us to fund continuing operations, if at all, or identify and enter into any strategic transactions that will provide the capital that we will require. If none of these alternatives is available, or if available, we are unable to raise sufficient capital through such transactions, we will not have sufficient cash resources and liquidity to fund our business operations for at least the next 12 months following the date of this prospectus. In addition, we may be unable to pay our vendors and other service partners on time, or at all. If any of our key vendors and service providers were to cease working with us or subject the delivery of products or services to timing or payment preconditions, our development activities may be adversely affected, which could have a material adverse effect on our business and operations. The failure to obtain sufficient capital on acceptable terms when needed may require us to delay, limit or eliminate the development of business opportunities and our ability to achieve our business objectives and our competitiveness, and our business, financial condition and results of operations will be materially adversely affected. In addition, market instability, including as a result of geopolitical instability, may reduce our ability to access capital, which could negatively affect our liquidity and ability to continue as a going concern. Further, the perception that we may not be able to continue as a going concern may cause others to choose not to deal with us due to concerns about our ability to meet our contractual obligations.

Our forecast of the period of time through which our financial resources will be adequate to support our operating requirements is a forward-looking statement and involves risks and uncertainties, and actual results could vary as a result of a number of factors, including the factors discussed elsewhere in this “Risk Factors” section and Part I, Item 1A “Risk Factors” of our Annual Report on Form 10-K for the year ended December 31, 2023, filed with the SEC on April 16, 2024. We have based this estimate on a number of assumptions that may prove to be wrong and changing circumstances beyond our control may cause us to consume capital more rapidly than we currently anticipate. Our inability to obtain additional funding when we need it could seriously harm our business.

We have incurred significant operating losses since inception, we expect to incur operating losses in the future, and we may not be able to achieve or sustain profitability.

We have incurred operating losses since our incorporation on November 6, 1992. For the years ended December 31, 2023 and 2022, we had operating losses of \$20.6 million and \$41.3 million, respectively. As of December 31, 2023, we had an accumulated deficit of \$844.8 million. To date, we have financed our operations primarily through private placements and public offerings of our common and preferred stock and borrowings from investors and financial institutions. As of December 31, 2023, we had cash and cash equivalents of \$4.3 million and current liabilities of \$4.0 million. In April 2024, we entered into the Purchase Agreement pursuant to which we agreed to sell the Notes for \$1.5 million of gross proceeds.

We expect to continue to incur significant research and clinical development, regulatory and other expenses as we (i) develop product candidates; (ii) seek regulatory clearances or approvals for our planned or future product candidates; (iii) conduct clinical trials on our planned or future product candidates; and (iv) manufacture, market, and sell any product candidates for which we may obtain regulatory approval. As a result, we expect to continue to incur operating losses for the foreseeable future and may never achieve profitability. Even if we do achieve profitability, we may not be able to sustain or increase profitability on an ongoing basis. If we do not achieve or sustain profitability, it will be more difficult for us to finance our business and accomplish our strategic objectives, either of which would have a material adverse effect on our business, financial condition and results of operations and may cause the market price of our common stock to decline.

Risks Related to the Ownership of Our Securities

Our common stock is listed on the Nasdaq Capital Market. We can provide no assurance that we will be able to comply with the continued listing requirements over time and that our common stock will continue to be listed on Nasdaq.

In May 2020, we successfully listed our common stock on the Nasdaq Capital Market. However, we can give no assurance that we will be able to satisfy the continued listing requirements of Nasdaq in the future, including but not limited to the corporate governance requirements and the minimum closing bid price requirement or the minimum equity requirement.

On June 3, 2022, we received a deficiency letter from the Nasdaq Listing Qualifications Department, or the Staff, of Nasdaq notifying us that, for 30 consecutive business days, the closing bid price for our common stock was below the minimum \$1.00 per share required for continued listing on the Nasdaq Capital Market pursuant to Nasdaq Listing Rule 5550(a)(2), or Rule 5550(a)(2). The Nasdaq deficiency letter had no immediate effect on the listing of our common stock, and our common stock continued to trade on the Nasdaq Capital Market under the symbol “WINT”. We were initially given 180 calendar days, or until November 30, 2022, to regain compliance with Rule 5550(a)(2), which was extended by an additional 180 calendar days, or May 29, 2023.

On February 24, 2023, we effected a reverse stock split of our issued and outstanding shares of common stock, par value \$0.001 per share, at a ratio of 1 post-split share for every 50 pre-split shares. On March 10, 2023, we received written confirmation from Nasdaq notifying us that we had regained compliance with Rule 5550(a)(2).

On January 22, 2024, we received a deficiency letter from the Staff of Nasdaq notifying us that, for the last 31 consecutive business days, the closing bid price for our common stock has been below the minimum \$1.00 per share required for continued listing on the Nasdaq Capital Market pursuant to Rule 5550(a)(2). The Nasdaq deficiency letter had no immediate effect on the listing of our common stock, and our common stock continued to trade on the Nasdaq Capital Market under the symbol “WINT”. We were initially given 180 calendar days, or until July 22, 2024, to regain compliance with Rule 5550(a)(2).

On April 19, 2024, we effected a reverse stock split of our issued and outstanding shares of common stock, par value \$0.001 per share, at a ratio of 1 post-split share for every 18 pre-split shares. On May 3, 2024, we received written confirmation from Nasdaq notifying us that we had regained compliance with Rule 5550(a)(2).

There can be no assurance that we will be able to maintain compliance with the continued listing requirements for Nasdaq. If we fail to maintain compliance with any such continued listing requirement, there can also be no assurance that we will be able to regain compliance with any such continued listing requirement in the future or that our common stock will not be delisted from Nasdaq Stock Market in the future. If we fail to maintain compliance, Nasdaq may take steps to delist our common stock. If such delisting should occur, it would likely have a negative effect on the price of our common stock and would impair an investor's ability to sell or purchase our common stock when desired. In the event of a delisting, we can provide no assurance that any action taken by us to restore compliance with listing requirements would allow our common stock to become listed again, stabilize the market price or improve the liquidity of our common stock, prevent our common stock from dropping below the Nasdaq minimum bid price requirement, or prevent future non-compliance with Nasdaq's listing requirements.

We effected a reverse stock split on April 19, 2024, which may adversely impact the market price of our common stock.

We effected a reverse stock split of our outstanding common stock at a ratio of 1-for-18 shares, which was effected at 11:59 p.m. Eastern Time on April 19, 2024. The impact of the reverse stock split upon the market price of our common stock cannot be predicted with certainty and there is no assurance that our common stock will trade at a price consistent with such reverse stock split. Accordingly, it is possible that the market price of our common stock following the reverse stock split will decline, possibly more than would occur in the absence of a reverse stock split.

The effective increase in the number of shares of our common stock available for issuance as a result of our reverse stock split could result in further dilution to our existing stockholders and have antitakeover implications.

The April 2024 reverse stock split alone had no effect on our authorized capital stock, and the total number of authorized shares remains the same as before the reverse stock split. The reverse stock split of our issued and outstanding shares increased the number of shares of our common stock (or securities convertible or exchangeable for our common stock) available for issuance by decreasing the number of shares of our common stock issued and outstanding. The additional available shares are available for issuance from time to time at the discretion of our Board of Directors when opportunities arise, without further stockholder action or the related delays and expenses, except as may be required for a particular transaction by law, the rules of any exchange on which our securities may then be listed, or other agreements or restrictions. Any issuance of additional shares of our common stock would increase the number of outstanding shares of our common stock and (unless such issuance was pro-rata among existing stockholders) the percentage ownership of existing stockholders would be diluted accordingly. In addition, any such issuance of additional shares of our common stock could have the effect of diluting the earnings per share and book value per share of outstanding shares of our common stock.

Additionally, the effective increase in the number of shares available for issuance could, under certain circumstances, have anti-takeover implications. For example, the additional shares of common stock that have become available for issuance could be used by us to oppose a hostile takeover attempt or to delay or prevent changes in control or our management. Although our reverse stock split is prompted by other considerations and not by the threat of any hostile takeover attempt, stockholders should be aware that our reverse stock split could facilitate future efforts by us to deter or prevent changes in control, including transactions in which our stockholders might otherwise receive a premium for their shares over then-current market prices.

The market price of our common stock may be highly volatile, and investors may not be able to resell their shares at or above the price at which they purchase them.

The market price of our common stock, like that of many other development stage pharmaceutical or biotechnology companies, has been and is likely to be volatile. In addition to general economic, political and market conditions, the price and trading volume of our stock could fluctuate widely in response to many factors, including:

- our ability to execute our planned clinical trials on a timely basis consistent with timelines established;

- results of our clinical trials and preclinical studies, and the results of trials of our competitors or those of other companies in our market sector;
- regulatory approval of our product candidates, or limitations to specific label indications or patient populations for its use, or changes or delays in the regulatory review process;
- regulatory developments in the U.S. and foreign countries;
- changes in the structure of healthcare payment systems, especially in light of current reforms to the U.S. healthcare system;
- the scope of protection we are able to establish and maintain for intellectual property rights covering our product candidates, along with any product modifications and improvements;
- the success or failure of our efforts to acquire, license or develop additional product candidates;
- innovations or new products developed by us or our competitors;
- announcements by us or our competitors of significant acquisitions, strategic partnerships, joint ventures or capital commitments;
- manufacturing, supply or distribution delays or shortages;
- any changes to our relationship with any manufacturers, suppliers, licensors, future collaborators or other strategic partners;
- our expectations regarding the potential market size and the size of the patient populations for our product candidates;
- the implementation of our business model and strategic plans for our business and technology;
- achievement of expected product sales and profitability;
- variations in our financial results or those of companies that are perceived to be similar to us;
- market conditions in the biopharmaceutical sector and issuance of securities analysts' reports or recommendations;
- trading volume of our common stock;
- an inability to obtain additional funding;
- sales of our stock by insiders and stockholders;
- general economic, industry and market conditions other events or factors, including as a result of inflation, liquidity constraints or banking stability, many of which are beyond our control;
- our commercialization, marketing and manufacturing prospects and capabilities;
- additions or departures of key personnel; and
- intellectual property, product liability or other litigation against us.

In addition, the stock markets in general, and the markets for biopharmaceutical and biotechnology stocks in particular, have experienced extreme volatility that may have been unrelated to the operating performance of the issuer. These broad market fluctuations may adversely affect the market price or liquidity of our common stock. In the past, when the market price of a stock has been volatile, holders of that stock have sometimes instituted securities class action litigation against the issuer. If any of our stockholders were to bring such a lawsuit against us, we could incur substantial costs defending the lawsuit and the attention of our management would be diverted from the operation of our business.

The sale and issuance of our common stock or rights to purchase our common stock, stock incentive plans and upon the exercise of outstanding securities exercisable for shares of our common stock could result in substantial additional dilution of our stockholders, cause our stock price to fall and adversely affect our ability to raise capital.

We will require additional capital to continue to execute our business plan and advance our research and development efforts. To the extent that we raise additional capital through the issuance of additional equity securities and through the exercise of outstanding warrants, our stockholders may experience substantial dilution. We may sell shares of preferred stock or common stock in one or more transactions at prices that may be at a discount to the then-current market value of our common stock and on such other terms and conditions as we may determine from time to time. Any such transaction could result in substantial dilution of our existing stockholders. If we sell shares of our common stock in more than one transaction, stockholders who purchase our common stock may be materially diluted by subsequent sales. Such sales could also cause a drop in the market price of our common stock. The issuance of shares of our common stock in connection with a public or private financing, in connection with our compensation programs, and upon exercise of outstanding warrants will have a dilutive impact on our other stockholders and the issuance, or even potential issuance, of such shares could have a negative effect on the market price of our common stock.

The exercise of stock options and other securities could also cause our stockholders to experience substantial dilution. Moreover, holders of our stock options and warrants are likely to exercise them, if ever, at a time when we otherwise could obtain a price for the sale of our securities that is higher than the exercise price per security of the options or warrants. Such exercises, or the possibility of such exercises, may impede our efforts to obtain additional financing through the sale of additional securities or make such financing more costly. It may also reduce the price of our common stock.

The Certificate of Designation for the Series B Preferred Stock and the Notes, each contain anti-dilution provisions that may result in the reduction of the conversion price of the Series B Preferred Stock and the Notes. These features may increase the number of shares of our common stock being issuable upon conversion of the Series B Preferred Stock and the Notes.

The Certificate of Designation, or the Series B Certificate of Designation, authorizes a total of 5,500 Series B Preferred Stock, with an initial conversion price of \$6.4854, or the Preferred Conversion Price. Similarly, our 10% senior convertible notes, or the Notes, have an initial conversion price of \$6.4854, or the Notes Conversion Price. Both the Preferred Conversion Price and the Notes Conversion Price are subject to adjustment upon the occurrence of specified events to no lower than \$1.2978, subject to any stock split, stock dividend, stock combination, recapitalization or other similar transaction involving our common stock at a price below the then-applicable Preferred Conversion Price or Notes Conversion Price, as applicable, each as described in further detail in the Certificate of Designation or the Notes, respectively.

If in the future, while any of our Series B Preferred Stock or Notes are outstanding, we grant, issue or sell any shares of our common stock for a consideration per share of our common stock, the New Issuance Price, less than a price equal to the Preferred Conversion Price or Notes Conversion Price, respectively, as then in effect immediately prior to such granting, issuance or sale, we will be required, subject to certain limitations and adjustments (as provided in the Series B Certificate of Designation or the Note) to reduce the Preferred Conversion Price or the Notes Conversion Price, as applicable, to be equal to the New Issuance Price, which will result in a greater number of shares of our common stock being issuable upon conversion, which in turn will increase the dilutive effect of such conversion on existing holders of our common stock. It is possible that we will not have a sufficient number of shares available to satisfy the conversion of the Series B Preferred Stock and/or the Notes if we enter into a future transaction that reduces the applicable Preferred Conversion Price or Notes Conversion Price. If we do not have a sufficient number of available shares for the conversion of any Series B Preferred Stock or Notes, we may need to seek shareholder approval to increase the number of authorized shares of our common stock, which may not be possible and will be time consuming and expensive. The potential for such additional issuances may depress the price of our common stock regardless of our business performance and may make it difficult for us to raise additional equity capital while any of our Series B Preferred Stock or Notes are outstanding.

The Series B Preferred Stock have a liquidation preference senior to our common stock.

Subject to certain exceptions, in accordance with the Series B Certificate of Designation, shares of our capital stock are junior in rank to the Series B Preferred Stock with respect to the preferences as to dividends, distributions and payments upon our liquidation, dissolution and winding up. The payment of the liquidation preferences could result in common stockholders and warrant holders not receiving any consideration if we were to liquidate, dissolve or wind up, either voluntarily or involuntarily. This liquidation preference may increase over time based on the payment of dividends.

The existence of the liquidation preferences may reduce the value of our common stock, make it harder for us to sell shares of common stock in offerings in the future, or prevent or delay a change of control.

Under the terms of the Notes, we are subject to certain restrictive covenants that may make it difficult to procure additional financing.

On April 2, 2024, we entered into the Purchase Agreement with the buyers named therein. The Purchase Agreement, pursuant to which we issued the Notes, contains the restrictive covenants, subject to certain exceptions. For example, without the consent of the holders holding at least a majority of the certain registrable securities for the period commencing on April 2, 2024 and ending on the date immediately following the 90th trading day after the Applicable Date (as defined in the Purchase Agreement), neither we nor any of our subsidiaries will directly or indirectly issue, offer, sell, grant any option or right to purchase, or otherwise dispose of (or announce any issuance, offer, sale, grant of any option or right to purchase or other disposition of) any equity security or any equity-linked or related security (including, without limitation, any “equity security” (as that term is defined under Rule 405 promulgated under the Securities Act of 1933, as amended), any Convertible Securities (as defined in the Purchase Agreement), any debt, any preferred stock or any purchase rights), or a Subsequent Placement.

Subject to the limitations described in the Purchase Agreement, for so long as the Notes are outstanding, we are prohibited from effecting or entering into an agreement to effect any Subsequent Placement involving a Variable Rate Transaction (as defined in the Purchase Agreement).

Additionally, the Purchase Agreement contains a participation right, which provides that, subject to certain exceptions, at any time on or prior to April 2, 2028, neither we nor our subsidiaries shall, directly or indirectly, effect any Subsequent Placement unless we comply with certain notice procedures as outlined in the Purchase Agreement with respect to each buyer, providing the opportunity for such buyer to participate in such Subsequent Placement on a pro rata basis as described in the Purchase Agreement.

Any of these restrictions on our ability to operate our business in our discretion could adversely affect our business by, among other things, limiting our ability to adapt to changing economic, financial, or industry conditions and to take advantage of corporate opportunities, including opportunities to obtain debt financing, repurchase stock, refinance or pay principal on our outstanding debt, or complete acquisitions for cash or debt. If we require additional funding while these restrictive covenants remain in effect, we may be unable to effect a financing transaction while remaining in compliance with the terms of the Purchase Agreement, or we may be forced to seek a waiver from the buyers party to the Purchase Agreement.

Risks Related to this Offering

Purchasers of common stock in this offering will experience immediate and substantial dilution in the net tangible book value of their investment. You may experience further dilution upon exercise of options.

The public offering price per share of common stock in this offering is substantially higher than the net tangible book value per share of our common stock before giving effect to this offering. Based on a public offering price of \$ _____ per share, if you purchase common stock in this offering, you will incur immediate substantial dilution of approximately \$ _____ per share, representing the difference between the public offering price per share of common stock and our as adjusted net tangible book value as of December 31, 2023. Furthermore, if outstanding options or warrants are exercised, you could experience further dilution. For a further description of the dilution that you will experience immediately after this offering, see the section in this prospectus entitled “*Dilution*.”

A substantial number of shares of common stock may be sold in the market following this offering, which may depress the market price for our common stock.

Sales of a substantial number of shares of our common stock in the public market following this offering could cause the market price of our common stock to decline. A substantial majority of the outstanding shares of our common stock are, and the shares of common stock sold in this offering upon issuance will be, freely tradable without restriction or further registration under the Securities Act.

Upon completion of this offering, based on our shares outstanding as of March 31, 2024, we will have _____ shares of common stock outstanding, which (along with the shares purchased in this offering) may be resold into the public market immediately without restriction, unless owned or purchased by our “affiliates” as that term is defined in Rule 144 under the Securities Act.

As of March 31, 2024, there were approximately _____ shares subject to outstanding options or subject to certain outstanding inducement grants, _____ shares subject to outstanding restricted stock units, and _____ shares reserved for future issuance or otherwise issuable under our equity compensation plans. We have registered or will register the shares of common stock available for issuance under the Company’s 2011 Long-Term Incentive Plan and 2020 Equity Incentive Plan under the Securities Act on Registration Statements on Form S-8. The registered shares can be freely sold in the public market upon issuance, subject to volume limitations applicable to affiliates and the lock-up agreements described above, to the extent applicable.

As of March 31, 2024, we had outstanding warrants exercisable for _____ shares with a weighted-average exercise price of \$ _____ per share. The shares of our common stock underlying such warrants will, upon issuance, be freely tradeable without restriction or further registration under the Securities Act.

We have broad discretion to determine how to use the funds raised in this offering, and may use them in ways that may not enhance our operating results or the price of our common stock.

Our management will have broad discretion over the use of net proceeds from this offering, and we could spend the net proceeds from this offering in ways our stockholders may not agree with or that do not yield a favorable return, if at all. We currently expect to use the net proceeds from this offering to support our continued clinical development of istaroxime in cardiogenic shock, the preclinical development of our aPKCi inhibitor asset platform and for working capital and general corporate purposes, including costs and expenses associated with being a public company. However, our use of these net proceeds may differ substantially from our current plans. If we do not invest or apply the net proceeds of this offering in ways that improve our operating results, we may fail to achieve expected financial results, which could cause our stock price to decline.

There is no public market for the warrants being offered in this offering.

There is no established public trading market for the warrants being offered in this offering, and we do not expect a market to develop. In addition, we do not intend to apply to list the warrants on any national securities exchange or other nationally recognized trading system, including the Nasdaq Capital Market. Without an active market, the liquidity of the warrants will be limited.

Holders of warrants purchased in this offering will have no rights as a common stockholder until such holder exercises its warrants and acquires our common stock, except as set forth in such warrants.

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

The warrants are speculative in nature.

The warrants do not confer any rights 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 for a limited period of time. Specifically, holders of the common warrants may exercise their right to acquire the common stock and pay an exercise price of \$ _____ per share, subject to certain adjustments, commencing immediately until expiration on the fifth anniversary of the date of issuance, after which period any unexercised common warrants will expire and have no further value. Moreover, following this offering, the market value of the warrants, if any, is uncertain and there can be no assurance that the market value of the warrants will equal or exceed their imputed offering price. The warrants will not be listed or quoted for trading on any market or exchange. There can be no assurance that the market price of the common stock will ever equal or exceed the exercise price of the warrants, and consequently, it may not ever be profitable for holders of the warrants to exercise the warrants.

SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus contains forward-looking statements. All statements other than statements of historical facts contained in this prospectus are forward-looking statements. In some cases, you can identify forward-looking statements by terms such as “may,” “will,” “should,” “expect,” “plan,” “anticipate,” “could,” “intend,” “target,” “project,” “contemplate,” “believe,” “estimate,” “predict,” “potential” or “continue” or the negative of these terms or other similar expressions, although not all forward-looking statements contain these words. Forward-looking statements include, but are not limited to, statements concerning:

- our estimates regarding future results of operations, financial position, research and development costs, capital requirements, and our needs for additional financing;
- how long we can continue to fund our operations with our existing cash and cash equivalents;
- changes in market conditions, general economic conditions, and the banking sector, and potential constraints in accessing capital or credit if and when needed with favorable terms, if at all;
- the potential impairment of our intangible assets on our consolidated balance sheet, which could lead to material impairment charges in the future;
- our ability to repay indebtedness;
- potential delays and uncertainties in our anticipated timelines and milestones and additional costs associated with the impact of the residual effects of the COVID-19 pandemic and the evolving events in Israel and Gaza on our clinical trial operations;
- the costs, timing, and results, of our preclinical studies and clinical trials, as well as the number of required trials for regulatory approval and the criteria for success in such trials;
- legal and regulatory developments in the United States, or U.S., and foreign countries, including any actions or advice that may affect the design, initiation, timing, continuation, progress or outcome of clinical trials or result in the need for additional clinical trials;
- the difficulties and expenses associated with obtaining and maintaining regulatory approval of our product candidates, and the indication and labeling under any such approval;
- risks related to manufacturing active pharmaceutical ingredients, drug product, and other materials we need;
- delays, interruptions or failures in the manufacture and supply of our product candidates;
- the plans of our AEROSURF and KL4 licensee, Lee’s Pharmaceutical (HK) Ltd., and its affiliate, Zhaoke Pharmaceutical (Hefei) Co. Ltd., and their ability to successfully source materials, execute necessary clinical and business development activities in a timely manner, if at all, to support development and commercialization of the licensed product candidates;
- the performance of third parties, both foreign and domestic, upon which we depend, including contract research organizations, contract manufacturing organizations, contract laboratories, and independent contractors;
- the size and growth of the potential markets for our product candidates, the regulatory requirements in such markets, the rate and degree of market acceptance of our product candidates, and our ability to serve those markets;
- the success of competing therapies and products that are or may become available;
- our ability to limit our exposure under product liability lawsuits;

- our ability to obtain and maintain intellectual property protection for our product candidates;
- recently enacted and future legislation, including but not limited to, the Inflation Reduction Act of 2022, regarding the healthcare system in the U.S. or the healthcare systems in foreign jurisdictions;
- our ability to recruit or retain key scientific, commercial or management personnel or to retain our executive officers;
- our ability to secure electronically stored work product, including clinical data, analyses, research, communications, and other materials necessary to gain regulatory approval of our product candidates, including those acquired from third parties, and assure the integrity, proper functionality, and security of our internal computer and information systems and prevent or avoid cyber-attacks, malicious intrusion, breakdown, destruction, security incidents, data privacy violations, or other significant disruption;
- economic uncertainty resulting from inflation and the rapid increase in interest rates, including concerns involving liquidity, defaults or other non-performance by financial institutions;
- economic uncertainty resulting from geopolitical instability, including the ongoing military conflict between Russia and Ukraine, the People's Republic of China and the Republic of China (Taiwan), and the evolving events in Israel and Gaza; and
- other risks and uncertainties, including those described or incorporated by reference under the caption "Risk Factors" in this prospectus.

We have based these forward-looking statements largely on our current expectations, estimates, forecasts, and projections about future events and financial trends that we believe may affect our financial condition, results of operations, business strategy, and financial needs. In light of the significant uncertainties in these forward-looking statements, you should not rely upon forward-looking statements as predictions of future events. Although we believe that we have a reasonable basis for each forward-looking statement contained in this prospectus, we cannot guarantee that the future results, levels of activity, performance, or events and circumstances reflected in the forward-looking statements will be achieved or occur at all. You should refer to the section entitled "Risk Factors" in this prospectus and the risk factors set forth in the documents incorporated by reference in this prospectus for a discussion of important factors that may cause our actual results to differ materially from those expressed or implied by our forward-looking statements. Furthermore, if our forward-looking statements prove to be inaccurate, the inaccuracy may be material. Except as required by law, we undertake no obligation to publicly update any forward-looking statements, whether as a result of new information, future events or otherwise.

You should read this prospectus and the documents incorporated by reference in this prospectus completely and with the understanding that our actual future results, performance or achievements may be materially different from what we expect. We qualify all of the forward-looking statements in this prospectus by these cautionary statements.

Trademark Notice

AEROSURF®, **AFFECTAIR®**, **SURFAXIN®**, **SURFAXIN LS™**, **WINDTREE THERAPEUTICS® (logo)**, **WINDTREE THERAPEUTICS™**, and **WINDTREE™** are registered and common law trademarks of Windtree Therapeutics, Inc. (Warrington, PA).

SELECTED FINANCIAL DATA

Reverse Stock Split

On April 19, 2024, we effected a 1-for-18 reverse stock split of our common stock. The number of shares of common stock authorized under our Amended and Restated Certificate of Incorporation is unchanged at 120 million shares. The par value per common share also remained unchanged. The audited consolidated financial statements of Windtree Therapeutics, Inc. included in the Annual Report on Form 10-K for the year ended December 31, 2023 that is incorporated by reference into this prospectus is presented without giving effect to the reverse stock split. Except where the context otherwise requires, share numbers in this prospectus reflect the 1-for-18 reverse stock split of our common stock.

The following selected financial data has been derived from our audited consolidated financial statements included in our Annual Report on Form 10-K filed with the SEC on April 16, 2024, as adjusted to reflect the reverse stock split for the periods presented. Our historical results are not indicative of the results that may be expected in the future.

As Reported (in thousands, except per share data)

	December 31,	
	2023	2022
Net loss	\$ (20,291)	\$ (39,208)
Net loss per common share, basic and diluted	\$ (5.24)	\$ (62.23)
Weighted average number of common shares outstanding, basic and diluted	3,876	630
Common shares outstanding at year end	5,997	772

As Adjusted for 1-for-18 Reverse Stock Split (unaudited, in thousands, except per share data)

	December 31,	
	2023	2022
Net loss	\$ (20,291)	\$ (39,208)
Net loss per common share, basic and diluted	\$ (94.23)	\$ (1,120.23)
Weighted average number of common shares outstanding, basic and diluted	216	35
Common shares outstanding at year end	334	43

USE OF PROCEEDS

We estimate that the net proceeds to us from this offering will be approximately \$ _____ million, or approximately \$ _____ million if the underwriters exercise their option to purchase additional shares of common stock and/or common warrants from us in full, and after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us, excluding the proceeds, if any, from the exercise of the warrants issued pursuant to this offering and assuming no sale of the pre-funded warrants. In addition, if all of the common warrants offered pursuant to this prospectus are exercised in full for cash, we will receive approximately an additional \$ _____ in cash. We cannot predict when or if these common warrants will be exercised. It is possible that these common warrants may expire and may never be exercised.

We intend to use up to \$ _____ million of the net proceeds of this offering to complete a Phase 2 clinical trial for istaroxime in cardiogenic shock and to advance preclinical development of our aPKCi inhibitor asset platform, with the remainder of the net proceeds being used for working capital and other general corporate purposes. We may also use a portion of the net proceeds from this offering to in-license, acquire or invest in complementary businesses, technologies, products or assets. Although we currently have no agreements, commitments or obligations to do so, we evaluate such opportunities and engage in related discussions with third parties from time to time.

Our expected use of the net proceeds from this offering represents our intentions based upon our current plans and business conditions. As of the date of this prospectus, we cannot predict with certainty all of the particular uses for the net proceeds to be received upon the completion of this offering or the amounts that we will actually spend on the uses set forth above. The amounts and timing of our actual expenditures and the extent of our preclinical, clinical and future development activities may vary significantly depending on numerous factors, including the progress of our development efforts, the status of and results from our planned clinical trials, our ability to take advantage of expedited programs or to obtain regulatory approval for product candidates, the timing and costs associated with the manufacture and supply of product candidates for clinical development or commercialization and any unforeseen cash needs. As a result, our management will retain broad discretion over the allocation of the net proceeds from this offering.

Pending the uses described above, we plan to invest the net proceeds from this offering in short-term, interest-bearing obligations, investment-grade instruments or other securities.

DIVIDEND POLICY

We have not paid any cash dividends and we do not anticipate paying any cash dividends in the foreseeable future and we intend to retain all of our earnings, if any, to finance our growth and operations and to fund the expansion of our business. Payment of any dividends, if any, will be made in the discretion of our board of directors, or Board, after taking into account various factors, including our financial condition, operating results, current and anticipated cash needs and plans for expansion.

DILUTION

If you invest in our common stock in this offering, your ownership interest will be diluted to the extent of the difference between the public offering price per share of our common stock and accompanying common warrants in this offering and the as adjusted net tangible book value per share of our common stock after the closing of this offering.

Our historical net tangible book value as of December 31, 2023 was \$ _____ million, or \$ _____ per share of our common stock, based on 5,996,586 shares of common stock outstanding as of December 31, 2023 (giving effect to the one-for-eighteen (1-for-18) reverse stock split). Our historical net tangible book value represents our total tangible assets less total liabilities. Historical net tangible book value per share is our historical net tangible book value divided by the number of shares of our common stock outstanding as of December 31, 2023.

After giving effect to the sale of _____ shares of our common stock and common warrants to purchase up to _____ shares of our common stock in this offering at an assumed public offering price of \$ _____ per share (which was the last reported sale price of our common stock on the Nasdaq Capital Market on _____, 2024) and accompanying common warrant, assuming no sale of any pre-funded warrants, and after deducting underwriting discounts and commissions and estimated offering expenses payable by us, our as adjusted net tangible book value as of December 31, 2023 would have been \$ _____ million, or \$ _____ per share. This represents an immediate increase in as adjusted net tangible book value of \$ _____ per share to our existing stockholders and an immediate dilution of \$ _____ per share to investors purchasing our common stock and common warrants in this offering at the assumed combined public offering price. 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 combined public offering price per share of common stock and accompanying common warrant	\$ _____
Historical net tangible book value per share as of December 31, 2023	\$ _____
Increase in net tangible book value per share as of December 31, 2023 attributable to investors purchasing shares in this offering	_____
As adjusted net tangible book value per share as of December 31, 2023 after giving effect to this offering	_____
Dilution per share to investors participating in this offering	\$ _____

Each \$1.00 increase or decrease in the assumed public offering price of \$ _____ per share, the last reported sale price of our common stock on the Nasdaq Capital Market on _____, 2024, would increase or decrease our as adjusted net tangible book value per share after this offering by \$ _____ per share. For each \$1.00 increase or decrease in the assumed public offering price, the dilution per share to investors participating in this offering would increase or decrease by \$ _____ per share, assuming that the number of shares of common stock offered by us, as set forth on the cover page of this prospectus, remains the same, and after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us. Similarly, an increase of _____ shares of common stock offered by us would increase the as adjusted net tangible book value after this offering by \$ _____ per share and decrease the dilution per share to investors participating in this offering by \$ _____ per share, and a decrease of _____ shares of common stock offered by us would decrease the as adjusted net tangible book value by \$ _____ per share and increase the dilution per share to investors in this offering by \$ _____ per share, assuming that the assumed public offering price remains the same, and after deducting estimated underwriting discounts and commissions.

If the underwriters exercise in full their option to purchase additional shares and/or common warrants, our as adjusted net tangible book value per share after this offering would be \$ _____ per share, representing an immediate increase in as adjusted net tangible book value per share of \$ _____ to existing stockholders and immediate dilution of \$ _____ in as adjusted net tangible book value per share to investors purchasing common stock in this offering.

The foregoing discussion and tables above are based on _____ shares of common stock outstanding as of March 31, 2024, assume no exercise of any warrants and no exercise by the underwriters of their option to purchase additional shares of our common stock and/or common warrants, and excludes:

- _____ shares of our common stock issuable upon the exercise of outstanding warrants as of March 31, 2024, with a weighted-average price of \$ _____ per share;
- _____ shares of our common stock issuable upon the exercise of outstanding stock options as of March 31, 2024, with a weighted-average exercise price of \$ _____ per share;
- _____ shares of our common stock issuable upon the exercise of outstanding restricted stock units as of March 31, 2024, with a weighted-average grant date fair value of \$ _____ per share; and
- _____ shares of our common stock reserved for future issuance under our 2020 Plan, as amended, plus any future increases in the number of shares of common stock reserved for issuance.

To the extent that any outstanding warrants or options are exercised, new options or other equity awards are issued under our equity incentive plans, or we issue additional shares in the future, there will be further dilution to new investors participating in this offering. 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 equity-based securities, the issuance of these securities could result in further dilution to our stockholders.

DESCRIPTION OF CAPITAL STOCK

The following description of our capital stock is not complete and may not contain all the information you should consider before investing in our capital stock. This description is summarized from, and qualified in its entirety by reference to our Amended and Restated Certificate of Incorporation, which has been publicly filed with the SEC. See “Where You Can Find Additional Information and Incorporation of Certain Information by Reference.”

Capital Stock

Our authorized capital stock consists of 120,000,000 shares of common stock, par value \$0.001 per share and 5,000,000 shares of preferred stock, par value \$0.001 per share.

Common Stock

Voting Rights

Each holder of 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 in the election of directors. The affirmative vote of the voting power of the outstanding shares of capital stock entitled to vote, voting as a single class, will be required to amend certain provisions of our Amended and Restated Certificate of Incorporation, including the provisions relating to amending our By-Laws, procedures for our stockholder meetings, director liability, and exclusive forum for proceedings.

Dividends

Subject to preferences that may be applicable to any then outstanding preferred stock, holders of our common stock are entitled to receive dividends, if any, as may be declared from time to time by our Board 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, subject to 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 our common stock. In the event of a liquidation, dissolution or winding up of us, holders of our common stock will be entitled to share ratably in all assets remaining after payment of all debts and other liabilities and any liquidation preference of any outstanding preferred stock.

Number of Holders

There are approximately holders of our common stock as of , 2024.

Reverse Split

On April 28, 2020, we filed an amendment to our Charter in order to effect a 1-for-3 reverse stock split of our common stock effective for trading purposes on May 29, 2020. The number of authorized stock remained unchanged at 120,000,000 shares.

On February 22, 2023, we filed an amendment to our Charter in order to effect a 1-for-50 reverse stock split of our common stock effective for trading purposes on February 24, 2023. The number of authorized stock remained unchanged at 120,000,000 shares.

On April 19, 2024, we filed an amendment to our Charter in order to effect a 1-for-18 reverse stock split of our common stock effective for trading purposes on April 22, 2024. The number of authorized stock remained unchanged at 120,000,000 shares.

Preferred Stock

Our Board currently has the authority, without further action by our stockholders, to issue up to 5,000,000 shares of preferred stock in one or more series and to fix the rights, preferences, privileges and restrictions thereof. These rights, preferences and privileges could include dividend rights, conversion rights, voting rights, terms of redemption, liquidation preferences, sinking fund terms and the number of shares constituting, or the designation of, such series, any or all of which may be greater than the rights of common stock. The issuance of preferred stock by us could adversely affect the voting power of holders of our common stock and the likelihood that such holders will receive dividend payments and payments upon a liquidation of us. In addition, the issuance of preferred stock could have the effect of delaying, deferring or preventing a change in control of us or other corporate action.

Of the 5,000,000 authorized shares of preferred stock, 40,000 shares are designated as Series A Preferred Stock and 5,500 shares are designated as Series B Convertible Preferred Stock. As of April 15, 2024, there are no shares of Series A Preferred Stock outstanding and 5,500 shares of Series B Convertible Preferred Stock outstanding. We have no present plans to issue any additional shares of preferred stock.

Anti-takeover provisions

Amended and Restated Certificate of Incorporation and By-Laws

Among other things, our Amended and Restated Certificate of Incorporation and By-Laws:

- permit our Board to issue up to 5,000,000 shares of preferred stock, with any rights, preferences and privileges as they may designate;
- provide that the authorized number of directors may be changed only by resolution of our Board;
- provide that, subject to the rights of any series of preferred stock to elect directors, directors may be removed for cause or without cause, which removal may be effected, by the affirmative vote of a majority of the votes of the issued and outstanding shares of stock entitled to vote for the election of the stockholders called and held for that purpose, or by a majority vote of the Board at a meeting called for such purpose, and the vacancy in the Board caused by any such removal may be filled by such stockholders or directors, as the case may be, at such meeting, and if the stockholders shall fail to fill such vacancy, such vacancy shall be filled in the manner as provided by the By-Laws;
- provide that all vacancies, including newly created directorships, may be filled by the decision of majority of the directors then in office, including those who have so resigned, and shall have power to fill such vacancy or vacancies, the vote thereon to take effect when such resignation or resignations shall become effective, and each director so chosen shall hold office as provided in this Section for the filling of other vacancies;
- provides that stockholders may act via a consent of stockholders in lieu of a meeting without prior notice and without a vote, if a consent or consents in writing, set forth the action so taken, and is signed by the holders of outstanding stock having not less than the minimum number of votes that would be necessary to authorize or take such action at a meeting at which all shares entitled to vote thereon were present and voted and shall be delivered to the Company by delivery to its registered office in this State, its principal place of business, or an officer or agent of the Company having custody of the book in which proceedings of meetings of stockholders are recorded;
- provide that stockholders seeking to present proposals before a meeting of stockholders or to nominate candidates for election as directors at a meeting of stockholders must provide advance notice in writing, and also specify requirements as to the form and content of a stockholder's notice;

- provide that special meetings of our stockholders may be called only by the Board, the Chairman of the Board, or the Chief Executive Officer; and
- do not provide for cumulative voting rights, therefore allowing the holders of a majority of the shares of common stock entitled to vote in any election of directors to elect all of the directors standing for election, if they should so choose.

The amendment of any of these provisions would require the affirmative vote of the majority of voting power of the outstanding shares of capital stock entitled to vote.

The combination of these provisions makes it more difficult for our stockholders to replace our Board as well as for another party to obtain control of us by replacing our Board. Because our Board 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 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 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.

Section 203 of the Delaware General Corporation Law

We are subject to Section 203 of the Delaware General Corporation Law, or DGCL, 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 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 (i) by persons who are directors and also officers and (ii) 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 and authorized at an annual or special meeting of the stockholders, and not by written consent, by the affirmative vote of at least 66 $\frac{2}{3}$ % 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:
- any merger or consolidation involving 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;

- subject to certain exceptions, any transaction that results in the issuance or transfer by the corporation of any stock of the corporation to the interested stockholder;
- any transaction involving 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; and
- 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.

The statute could prohibit or delay mergers or other takeover or change in control attempts and, accordingly, may discourage attempts to acquire us even though such a transaction may offer our stockholders the opportunity to sell their stock at a price above the prevailing market price.

A Delaware corporation may “opt out” of these provisions with an express provision in its certificate of incorporation. We have not opted out of these provisions, which may as a result, discourage or prevent mergers or other takeover or change of control attempts of us.

Choice of Forum

Our Amended and Restated Certificate of Incorporation provides that the Court of Chancery of the State of Delaware shall be the sole and exclusive forum for the following claims or causes of action brought under Delaware statutory or common law: (1) any derivative claim or action brought on our behalf; (2) any claim or cause of action asserting a breach of fiduciary duty by any of our directors or officers; (3) any claim or cause of action asserting a claim against us arising out of, or pursuant to, the DGCL, our Amended and Restated Certificate of Incorporation or our By-Laws; or (4) any action asserting a claim against the Company governed by the internal affairs doctrine.

Limitations of Liability and Indemnification

Our Amended and Restated Certificate of Incorporation and our By-Laws limit our directors’ liability and may indemnify our directors and officers to the fullest extent permitted under the DGCL. The DGCL provides that directors of a corporation will not be personally liable for monetary damages for breach of their fiduciary duties as directors, except for liability for:

- any breach of the director’s duty of loyalty to us or our stockholders;
- any act or omission not in good faith or that involves intentional misconduct or a knowing violation of law;
- any unlawful payment of dividends or unlawful stock repurchases or redemptions as provided in Section 174 of the DGCL; or
- any transaction from which the director derived an improper benefit.

The DGCL and our By-Laws provide that we will, in certain situations, indemnify our directors and officers, to the fullest extent permitted by law.

We have entered into indemnification agreements with our directors and officers. These indemnification agreements may require us, among other things, to indemnify our directors and officers for some expenses, including attorneys’ fees, judgments, penalties, fines and settlement amounts incurred by a director or officer in any action or proceeding arising out of his or her service as one of our directors or officers, or any of our subsidiaries or any other company or enterprise to which the person provides services at our request. Subject to certain limitations, our indemnification agreements also require us to advance expenses incurred by our directors and officers for the defense of any action for which indemnification is required or permitted.

We maintain a directors' and officers' insurance policy pursuant to which our directors and officers are insured against liability for actions taken in their capacities as directors and officers. We believe that these provisions in our Amended and Restated Certificate of Incorporation, our By-Laws and these indemnification agreements are necessary to attract and retain qualified persons as directors and officers.

The limitation of liability and indemnification provisions in our Amended and Restated Certificate of Incorporation and By-Laws may discourage stockholders from bringing a lawsuit against our directors and officers for breach of their fiduciary duty. They may also reduce the likelihood of derivative litigation against our directors and officers, even though an action, if successful, might benefit us and our stockholders. Further, a stockholder's investment may be adversely affected to the extent that we pay the costs of settlement and damage awards against directors and officers as required by these indemnification provisions.

At present, there is no material pending litigation or proceeding involving any of our directors, officers or employees for which indemnification is sought and we are not aware of any threatened material litigation that may result in claims for indemnification.

Insofar as indemnification for liabilities arising under the Securities Act of 1933, as amended, or the Securities Act, may be permitted to directors, officers or control persons, in the opinion of the SEC, such indemnification is against public policy, as expressed in the Securities Act, and is therefore unenforceable.

Listing

Our common stock is listed on the Nasdaq Capital Market under the trading symbol "WINT".

Transfer Agent and Registrar

The transfer agent and registrar for our common stock is Continental Stock Transfer & Trust Company.

DESCRIPTION OF THE SECURITIES WE ARE OFFERING

Common Stock to be Issued as Part of this Offering

The material terms and provisions of our common stock and each other class of our securities which qualifies or limits our common stock are described above under the sections “*Description of Capital Stock—Common Stock*,” and “*Description of Capital Stock—Preferred Stock*” of this prospectus.

Warrants to be Issued as Part of this Offering

Common warrants

The common warrants will be issued in a form filed as an exhibit to the registration statement of which this prospectus is a part. You should review a copy of the form of common warrant for a complete description of the terms and conditions applicable to the common warrants.

Pursuant to a warrant agency agreement between us and Continental Stock Transfer and Trust Company, as warrant agent, the common 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, or DTC, and registered in the name of Cede & Co., a nominee of DTC, or as otherwise directed by DTC. The following is a brief summary of the common warrants and is still subject in all respect to the provisions contained in the form of common warrant.

Duration and Exercise Price

Each whole common warrant will have an exercise price of \$ _____ per share, will be immediately exercisable upon issuance and will expire on the fifth anniversary of the date of issuance. The exercise price and number of shares of common stock issuable upon exercise is subject to appropriate adjustment in the event of stock dividends, stock splits, reorganizations or similar events affecting our common stock and the exercise price.

The common warrants will be issued separately from the common stock and pre-funded warrants included in this offering. Each share of our common stock or pre-funded warrant purchased in this offering will include one common warrant to purchase one share of our common stock.

Exercisability

The common warrants will be exercisable, at the option of each 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 our common stock purchased upon such exercise (except in the case of a cashless exercise as discussed below in “—*Certain Adjustments*”). A holder may not exercise any portion of the common warrant to the extent that the holder would beneficially own more than 4.99% (or, at the election of the purchaser prior to the date of issuance, 9.99%) of the outstanding common stock after exercise, except that upon at least 61 days’ prior notice from the holder to us, the holder may increase the amount of ownership of outstanding stock after exercising the holder’s common warrants up to 9.99% of the number of shares of our common stock outstanding immediately after giving effect to the exercise, as such percentage ownership is determined in accordance with the terms of the common warrants.

Certain Adjustments

The exercise price and the number of shares issuable upon exercise of the common warrants is subject to appropriate adjustment in the event of stock splits, stock dividends, recapitalizations, reorganizations, schemes, arrangements or similar events affecting our common stock. The common warrant holders must pay the exercise price in cash or wire transfer of immediately available funds upon exercise of the common warrants, unless such holders are utilizing the cashless exercise provision of the common warrants, which is only available in certain circumstances such as if the underlying shares are not registered with the SEC pursuant to an effective registration statement. We intend to use commercially reasonable best efforts to have the registration statement of which this prospectus forms a part, effective when the common warrants are exercised.

Fundamental Transactions

In the event we consummate a merger or consolidation with or into another person or other reorganization event in which our common stock is converted or exchanged for securities, cash or other property, or we sell, lease, license, assign, transfer, convey or otherwise dispose of all or substantially all of our assets or we or another person acquire 50% or more of our outstanding shares of common stock, then following such event, the holders of the common warrants will be entitled to receive upon exercise of the common warrants the same kind and amount of securities, cash or property which the holders would have received had they exercised the common warrants immediately prior to such fundamental transaction. Any successor to us or surviving entity shall assume the obligations under the common warrants. Additionally, as more fully described in the common warrant, in the event of certain fundamental transactions, the holders of the common warrants will be entitled to receive consideration in an amount equal to the Black Scholes value of the common warrants on the date of consummation of such transaction.

Transferability

Subject to applicable laws and the restriction on transfer set forth in the common warrant, the common warrant may be transferred at the option of the holder upon surrender of the common warrant to us together with the appropriate instruments of transfer.

Exchange Listing

There is no established trading market for the common warrants. In addition, we do not intend to apply for the listing of the common warrants on any national securities exchange. Without an active trading market, the liquidity of the common warrants will be limited.

Right as a Stockholder

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

Waivers and Adjustments

Subject to certain exceptions, any terms of the common warrants may be amended or waived with our written consent and the written consent of the holder.

Pre-Funded warrants

The pre-funded warrants will be issued in a form filed as an exhibit to the registration statement of which this prospectus is a part. You should review a copy of the form of pre-funded warrant for a complete description of the terms and conditions applicable to the pre-funded warrants.

Duration and Exercise Price

The pre-funded warrants offered hereby will have an exercise price of \$0.001 per share. The pre-funded warrants will be immediately exercisable upon issuance and may be exercised at any time until the pre-funded warrants are exercised in full. The exercise prices and numbers 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 common stock. The pre-funded warrants will be issued in certificated form only.

Exercisability

The pre-funded warrants will be exercisable, at the option of each 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 our common stock purchased upon such exercise. A holder (together with its affiliates) may not exercise any portion of such holder's pre-funded warrants to the extent that the holder would own more than 4.99% (or 9.99%, at the holder's election) of our outstanding common stock immediately after exercise, except that upon notice from the holder to us, the holder may decrease or increase the limitation of ownership of outstanding stock after exercising the holder's pre-funded warrants up to 9.99% of the number of shares of our common stock outstanding immediately after giving effect to the exercise, as such percentage ownership is determined in accordance with the terms of the pre-funded warrants, provided that any increase in such limitation shall not be effective until 61 days following notice to us.

Fundamental Transactions

In the event we consummate a merger or consolidation with or into another person or other reorganization event in which our common stock is converted or exchanged for securities, cash or other property, or we sell, lease, license, assign, transfer, convey or otherwise dispose of all or substantially all of our assets or we or another person acquire 50% or more of our outstanding shares of common stock, then following such event, the holders of the pre-funded warrants will be entitled to receive upon exercise of the pre-funded warrants the same kind and amount of securities, cash or property which the holders would have received had they exercised the pre-funded warrants immediately prior to such fundamental transaction. Any successor to us or surviving entity shall assume the obligations under the pre-funded warrants.

Transferability

Subject to applicable laws and the restriction on transfer set forth in the pre-funded warrant, the pre-funded warrant may be transferred at the option of the holder upon surrender of the pre-funded warrant to us together with the appropriate instruments of transfer.

Exchange Listing

There is no established trading market for the pre-funded warrants. In addition, we do not intend to apply for the listing of the pre-funded warrants on any national securities exchange. Without an active trading market, the liquidity of the pre-funded warrants will be limited.

Right as a Stockholder

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

Waivers and Adjustments

Subject to certain exceptions, any terms of the pre-funded warrants may be amended or waived with our written consent and the written consent of the holder.

UNDERWRITING

We are offering the securities described in this prospectus through the underwriters named below. We have entered into an underwriting agreement dated _____, 2024 with _____, as the representative of the underwriters in this offering. Subject to the terms and conditions of the underwriting agreement, the underwriters have agreed to purchase the number of our securities set forth opposite its name below.

Underwriters	<u>Number of Shares</u>	<u>Number of Pre-Funded Warrants</u>	<u>Number of Common Warrants</u>
Total			

A copy of the underwriting agreement will be 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 shares of common stock, pre-funded warrants, if any, and common warrants 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 of common stock (or per pre-funded warrant) and \$ _____ per common warrant to purchase shares of common stock.

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 securities 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.

	<u>Per Share and Accompanying Common Warrant ⁽¹⁾</u>	<u>Per Pre- Funded Warrant and Accompanying Common Warrant ⁽¹⁾</u>	<u>Total Without Over- Allotment</u>	<u>Total With Full Over- Allotment</u>
Public offering price	\$ _____	\$ _____	\$ _____	\$ _____
Underwriting discounts and commissions ⁽²⁾⁽³⁾	\$ _____	\$ _____	\$ _____	\$ _____
Proceeds to us, before expenses	\$ _____	\$ _____	\$ _____	\$ _____

(1) The public offering price and underwriting discount corresponds, in respect of the securities of (i) a public offering price per share of common stock (or pre-funded warrant) of \$ _____ (\$ _____ net of the underwriting discount) and (ii) a public offering price per common warrant of \$ _____ (\$ _____ net of the underwriting discount).

- (2) We have also agreed to pay the representative a management fee equal to 1.0% of the aggregate gross proceeds received from the sale of the securities in the transaction and reimburse the accountable expenses of the representative, including a pre-closing expense allowance of up to a maximum of \$15,000 and an additional closing expense allowance up to a maximum of \$95,000.
- (3) We have granted a _____ -day option to the underwriters to purchase up to _____ additional shares of common stock and/or additional common warrants exercisable for up to an additional _____ shares of common stock at the assumed public offering price per share of common stock and the assumed public offering price per common 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 \$ _____ million, which amount includes (i) the underwriting discount of \$ _____, (ii) the management fee of \$ _____, (iii) reimbursement of the accountable expenses of the underwriters, including the legal fees of the representative, in an amount not to exceed \$ _____ 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 securities.

The securities we are offering are being offered by the underwriters subject to certain conditions specified in the underwriting agreement.

Over-allotment Option

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

Right of First Refusal

We have granted to _____ the right of first refusal for a period of twelve 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, subject to certain conditions.

Tail Financing Payments

We have also agreed to pay the representative a tail fee equal to 8% of the total gross proceeds received by us from any investor who was contacted by the representative during the term of its engagement, if such investor provides us with capital in any public or private offering or other financing or capital raising transaction for a period of twelve months after expiration or termination of the engagement with the representative; provided however, we shall not be required to pay any such tail fee in respect of proceeds received by us from certain excluded investors agreed upon between us and the representative.

Listing

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

The last reported sale price of our shares of common stock on _____, 2024 was \$ _____ per share. The final public offering price 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, and we do not expect such a market to develop. In addition, we do not intend to apply for a listing of the warrants on any national securities exchange or other nationally recognized trading system.

Lock-up Agreements

Each of our officers, directors and each of their respective affiliates and associated partners, and certain affiliated stockholders have agreed with the underwriters to be subject to a lock-up period of _____ 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 from the date of this prospectus for a period of _____ days following the date of this prospectus, subject to certain exceptions. _____ may, in its sole discretion and without notice, waive the terms of any of these lock-up agreements.

Transfer Agent and Registrar

The transfer agent and registrar for our common stock is Continental Stock Transfer & Trust Company.

Determination of Offering Price

Our common stock is currently traded on The Nasdaq Capital Market under the symbol “WINT.” On _____, 2024, the closing price of our common stock was \$ _____ per share. We do not intend to apply for listing of the warrants on any securities exchange or other trading system.

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 public offering price:

- our history and our prospects;
- the industry in which we operate;
- our past and present operating results;
- the previous experience of our executive officers; and
- the general condition of the securities markets at the 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 or warrants 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 and warrants sold in this offering can be resold at or above the public offering price.

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.

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. Except as disclosed in this prospectus, we have no present arrangements with the placement agent for any services.

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.

Electronic Distribution

A prospectus in electronic format may be made available on the websites maintained by the underwriters, if any, participating in this offering and the underwriters may distribute prospectuses electronically. Other than the prospectus in electronic format, the information on these websites is not part of this prospectus or the registration statement of which this prospectus forms a part, has not been approved or endorsed by us or the underwriters, and should not be relied upon by investors.

LEGAL MATTERS

The validity of the issuance of our common stock offered in this prospectus will be passed upon for us by Goodwin Procter LLP, Philadelphia, Pennsylvania. Certain legal matters in connection with this offering will be passed upon for the underwriters by .

EXPERTS

The consolidated balance sheets of Windtree Therapeutics, Inc. and Subsidiaries as of December 31, 2023 and 2022, and the related consolidated statements of operations, changes in mezzanine equity and stockholders' equity, and cash flows for each of the years then ended have been audited by EisnerAmper LLP, independent registered public accounting firm, as stated in their report which is incorporated herein by reference, which report includes an explanatory paragraph about the existence of substantial doubt concerning our ability to continue as a going concern. Such financial statements have been incorporated herein by reference in reliance on the report of such firm given upon their authority as experts in accounting and auditing.

WHERE YOU CAN FIND ADDITIONAL INFORMATION

This prospectus forms part of a registration statement on Form S-1 that we filed with the SEC. This prospectus does not contain all of the information set forth in the registration statement and the exhibits to the registration statement or the documents incorporated by reference herein and therein. For further information with respect to us and the securities that we are offering under this prospectus, we refer you to the registration statement and the exhibits and schedules filed as a part of the registration statement and the documents incorporated by reference herein and therein. You should rely only on the information contained in this prospectus or incorporated by reference herein or therein. We have not authorized anyone else to provide you with different information. We are not making an offer of these securities in any state where the offer is not permitted. You should not assume that the information in this prospectus is accurate as of any date other than the date on the front page of this prospectus, regardless of the time of delivery of this prospectus or any sale of the securities offered hereby. We file annual, quarterly and current reports, proxy statements and other information with the SEC. The SEC maintains a website that contains reports, proxy statements and other information regarding issuers that file electronically with the SEC, including Windtree. The address of the SEC website is www.sec.gov.

We also maintain a website at <https://ir.windtreetx.com/filings/sec-filings>, at which you may access these materials free of charge as soon as reasonably practicable after they are electronically filed with, or furnished to, the SEC. Information contained on or accessible through our website is not a part of this prospectus, and the inclusion of our website address in this prospectus is an inactive textual reference only.

INCORPORATION OF CERTAIN INFORMATION BY REFERENCE

The SEC allows us to “incorporate by reference” information from other documents that we file with it, which means that we can disclose important information to you by referring you to those documents. The information incorporated by reference is considered to be part of this prospectus. Information in this prospectus supersedes information incorporated by reference that we filed with the SEC prior to the date of this prospectus. We incorporate by reference into this prospectus and the registration statement of which this prospectus is a part the information or documents listed below that we filed with the SEC:

- our Annual Report on Form 10-K for the year ended December 31, 2023, filed with the SEC on [April 16, 2024](#);
- our Current Reports on Form 8-K, filed with the SEC on [January 17, 2024](#), [January 22, 2024](#), [January 25, 2024](#), [January 31, 2024](#), [February 16, 2024](#), [April 8, 2024](#), [April 10, 2024](#), [April 19, 2024](#) and [April 23, 2024](#); and
- the description of our common stock contained in [Exhibit 4.18](#) our 2023 Annual Report on Form 10-K, including any amendments or reports filed for the purposes of updating this description.

Notwithstanding the statements in the preceding paragraphs, no document, report or exhibit (or portion of any of the foregoing) or any other information that we have “furnished” to the SEC pursuant to the Exchange Act shall be incorporated by reference into this prospectus.

We also incorporate by reference into this prospectus all documents (other than current reports furnished under Item 2.02 or Item 7.01 of Form 8-K and exhibits filed on such form that are related to such items) that are filed by us with the SEC pursuant to Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act after the date of this prospectus but prior to the termination of the offering. These documents include periodic reports, such as Annual Reports on Form 10-K, Quarterly Reports on Form 10-Q and Current Reports on Form 8-K, as well as proxy statements on Schedule 14A.

We will provide to each person, including any beneficial owner, to whom a prospectus is delivered, without charge upon written or oral request, a copy of any or all of the documents that are incorporated by reference into this prospectus but not delivered with the prospectus, including exhibits that are specifically incorporated by reference into such documents. You should direct any requests for documents to Windtree Therapeutics, Inc., 2600 Kelly Road, Suite 100., Warrington, Pennsylvania 18976, Attn: Corporate Secretary.

You also may access these filings on our website at <https://ir.windtreetx.com/filings/sec-filings>. We do not incorporate the information on our website into this prospectus or any supplement to this prospectus and you should not consider any information on, or that can be accessed through, our website as part of this prospectus or any supplement to this prospectus (other than those filings with the SEC that we specifically incorporate by reference into this prospectus or any supplement to this prospectus). You may also access these filings at the SEC’s website at www.sec.gov.

Any statement contained in a document incorporated or deemed to be incorporated by reference in this prospectus will be deemed modified, superseded or replaced for purposes of this prospectus to the extent that a statement contained in this prospectus modifies, supersedes or replaces such statement.



**Shares of Common Stock and Accompanying
Common Warrants to Purchase up to Shares of Common Stock
or
Pre-Funded Warrants to Purchase up to Shares of Common Stock and
Accompanying Common Warrants to Purchase up to Shares of Common Stock
and
Up to Shares of Common Stock Issuable Upon Exercise of the Pre-Funded Warrants
and Common Warrants**

Preliminary Prospectus

, 2024

PART II
INFORMATION NOT REQUIRED IN PROSPECTUS

Item 13. Other Expenses of Issuance and Distribution.

The following table sets forth the fees and expenses in connection with the issuance and distribution of the securities being registered (excluding the underwriting discount and management fee). Except for the SEC registration fee and the FINRA filing fee, all amounts are estimates.

Item	Amount
SEC registration fee	\$ 1,180.80
FINRA filing fee	*
Legal fees and expenses	*
Accounting fees and expenses	*
Miscellaneous expenses	*
Total	\$ <u> </u> *

* To be completed by amendment

Item 14. Indemnification of Directors and Officers.

As permitted by Section 102 of the DGCL, we have adopted provisions in our Amended and Restated Certificate of Incorporation and By-Laws that limit or eliminate the personal liability of our directors for a breach of their fiduciary duty of care as a director. The duty of care generally requires that, when acting on behalf of the corporation, directors exercise an informed business judgment based on all material information reasonably available to them. Consequently, a director will not be personally liable to us or our stockholders for monetary damages for breach of fiduciary duty as a director, except for liability for:

- any breach of the director's duty of loyalty to us or our stockholders;
- any act or omission not in good faith or that involves intentional misconduct or a knowing violation of law;
- any act related to unlawful stock repurchases, redemptions or other distributions or payment of dividends; or
- any transaction from which the director derived an improper personal benefit.

These limitations of liability do not affect the availability of equitable remedies such as injunctive relief or rescission. Our By-Laws also authorizes us to indemnify any and all persons whom it shall have power to indemnify to the fullest extent permitted under Delaware law.

As permitted by Section 145 of the DGCL, our By-Laws provide that:

- we may indemnify any and all persons whom it shall have power to indemnify to the fullest extent permitted by the DGCL, subject to limited exceptions;
- the rights provided in our By-Laws are not exclusive.

Our Amended and Restated Certificate of Incorporation and our By-Laws provide for the indemnification provisions described above and elsewhere herein. We have entered or will enter into, and intend to continue to enter into, separate indemnification agreements with our directors and officers that may be broader than the specific indemnification provisions contained in the DGCL. These indemnification agreements generally require us, among other things, to indemnify our officers and directors against liabilities that may arise by reason of their status or service as directors or officers, other than liabilities arising from willful misconduct. These indemnification agreements also generally require us to advance any expenses incurred by the directors or officers as a result of any proceeding against them as to which they could be indemnified. These indemnification provisions and the indemnification agreements may be sufficiently broad to permit indemnification of our officers and directors for liabilities, including reimbursement of expenses incurred, arising under the Securities Act.

We have purchased and currently intend to maintain insurance on behalf of each and every person who is or was a director or officer of the Company against any loss arising from any claim asserted against him or her and incurred by him or her in any such capacity, subject to certain exclusions.

Item 15. Recent Sales of Unregistered Securities.

On April 2, 2024, we issued 5,500 shares, or the Preferred Shares, of our Series B Convertible Preferred Stock, par value \$0.001 per share, or the Series B Preferred Stock, to certain creditors of Varian Biopharmaceuticals, Inc. pursuant to an Asset Purchase Agreement that we entered into with Varian Biopharmaceuticals, Inc. We filed a Certificate of Designation with the Secretary of State of the State of Delaware on April 2, 2024, which became effective on April 3, 2024, authorizing the Preferred Shares with an initial conversion price of \$6.4854, or the Preferred Conversion Price, which is subject to adjustment as provided in the Certificate of Designation to no lower than \$1.2978. The Preferred Shares have a stated value of \$1,000 per share, or the Stated Value, which equal to an aggregate Stated Value of \$5,500,000 as of April 2, 2024. Each share of Series B Preferred Stock is initially convertible into 155 shares of our common stock, subject to adjustment as provided in the Certificate of Designation. No fractional shares will be issued upon conversion; rather any fractional share will be rounded up to the nearest whole share.

On April 2, 2024, we agreed to sell senior convertible notes in an aggregate principal amount of \$1.5 million, or the Notes, for \$1.5 million of gross proceeds, or the Notes Offering, pursuant to a Securities Purchase Agreement that we entered into with the buyers named therein. The Notes have an initial conversion price of \$6.4854, or the Notes Conversion Price, which is subject to adjustment upon the occurrence of specified events to no lower than \$1.2978, subject to any stock split, stock dividend, stock combination, recapitalization or other similar transaction involving our common stock. We intend to use the net proceeds from the Notes Offering for general corporate purposes.

The issuances of these securities were exempt from registration under Section 4(a)(2) of the Securities Act or Regulation D promulgated thereunder, in that the transactions were by an issuer not involving any public offering.

Item 16. Exhibits and financial statement schedules.

(a) Exhibits.

The exhibits listed below are filed as part of this registration statement.

Exhibit No.	Description
1.1**	Form of Underwriting Agreement.
2.1+	Form of Asset Purchase Agreement by and between Windtree Therapeutics, Inc. and Varian Biopharmaceuticals, Inc., dated April 2, 2024 (incorporated by reference to Exhibit 2.1 to Windtree's Current Report on Form 8-K, as filed with the SEC on April 8, 2024).
3.1*	Amended and Restated Certificate of Incorporation.
3.2	Amended and Restated By-Laws (incorporated by reference to Exhibit 3.1 to Windtree's Quarterly Report on Form 10-Q, as filed with the SEC on August 11, 2022).
4.1	Form of Warrant dated October 10, 2014 (incorporated by reference to Exhibit 4.11 to Windtree's Quarterly Report on Form 10-Q, as filed with the SEC on November 7, 2014).
4.2	Form of Series A Warrant dated July 22, 2015 (incorporated by reference to Exhibit 4.1 to Windtree's Current Report on Form 8-K, as filed with the SEC on July 17, 2015).

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- 4.3 [Form of Series B Warrant dated July 22, 2015 \(incorporated by reference to Exhibit 4.3 to Windtree’s Current Report on Form 8-K, as filed with the SEC on July 17, 2015\).](#)
- 4.4 [Form of Series A-1 Warrant dated February 13, 2017 \(incorporated by reference to Exhibit 4.1 to Windtree’s Current Report on Form 8-K, as filed with the SEC on February 15, 2017\).](#)
- 4.5 [Form of Series C Warrant dated April 4, 2018 \(incorporated by reference to Exhibit 4.1 to Windtree’s Current Report on Form 8-K, as filed with the SEC on April 4, 2018\).](#)
- 4.6 [Form of Series D Warrant dated July 2, 2018 \(incorporated by reference to Exhibit 4.1 to Windtree’s Current Report on Form 8-K, as filed with the SEC on July 6, 2018\).](#)
- 4.7 [Form of Series E Warrant dated December 11, 2018 \(incorporated by reference to Exhibit 4.7 to Windtree’s Annual Report on Form 10-K, as filed with the SEC on April 16, 2019\).](#)
- 4.8 [Form of Series F Warrant dated December 24, 2018 \(incorporated by reference to Exhibit 4.2 to Windtree’s Current Report on Form 8-K, as filed with the SEC on December 21, 2018\).](#)
- 4.9 [Form of Series G Warrant dated December 24, 2018 \(incorporated by reference to Exhibit 4.3 to Windtree’s Current Report on Form 8-K, as filed with the SEC on December 21, 2018\).](#)
- 4.10 [Form of Series H Warrant dated February 14, 2019 \(incorporated by reference to Exhibit 4.1 to Windtree’s Current Report on Form 8-K, as filed with the SEC on December 21, 2018\).](#)
- 4.11 [Form of Series I Warrant dated December 6, 2019 \(incorporated by reference to Exhibit 4.1 to Windtree’s Current Report on Form 8-K, as filed with the SEC on December 9, 2019\).](#)
- 4.12 [Form of Series F Warrant Amendment No. 1 dated April 24, 2020 \(incorporated by reference to Exhibit 4.1 to Windtree’s Current Report on Form 8-K, as filed with the SEC on April 29, 2020\).](#)
- 4.13 [Form of Series I Warrant Amendment dated May 6, 2020, to the Series I Warrant dated December 6, 2019 \(incorporated by reference to Exhibit 4.1 to Windtree’s Current Report on Form 8-K, as filed with the SEC on May 7, 2020\).](#)
- 4.14 [Form of Warrant issued in the Company’s May 2020 underwritten public offering of securities \(incorporated by reference to Exhibit 4.1 to Windtree’s Current Report on Form 8-K, as filed with the SEC on May 22, 2020\).](#)
- 4.15 [Form of Warrant issued in the Company’s March 2021 underwritten public offering of securities \(incorporated by reference to Exhibit 4.1 to Windtree’s Current Report on Form 8-K, as filed with the SEC on March 24, 2021\).](#)
- 4.16 [Form of Common Stock Purchase Warrant dated January 24, 2023 \(incorporated by reference to Exhibit 4.1 to Windtree’s Current Report on Form 8-K, as filed with the SEC on January 26, 2023\).](#)
- 4.17 [Form of Common Stock Purchase Warrant dated February 21, 2023 \(incorporated by reference to Exhibit 4.1 to Windtree’s Current Report on Form 8-K, as filed with the SEC on February 22, 2023\).](#)
- 4.18 [Description of Securities \(incorporated by reference to Exhibit 4.18 to Windtree’s Annual Report on Form 10-K, as filed with the SEC on April 16, 2024\).](#)
- 4.19 [Form of Common Warrant \(incorporated by reference to Exhibit 4.19 to Windtree’s Registration Statement on Form S-1/A \(File No. 333-269775\), as filed with the SEC on April 7, 2023\).](#)
- 4.20 [Form of Pre-Funded Warrant \(incorporated by reference to Exhibit 4.20 to Windtree’s Registration Statement on Form S-1/A \(File No. 333-269775\), as filed with the SEC on April 7, 2023\).](#)

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- 4.21 [Form of Warrant Agency Agreement \(incorporated by reference to Exhibit 4.21 to Windtree’s Registration Statement on Form S-1/A \(File No. 333-269775\), as filed with the SEC on April 7, 2023\).](#)
- 4.22 [Warrant Agency Agreement \(including form of global Common Warrant\), dated April 24, 2023, by and between Windtree and Continental Stock Transfer & Trust Company \(incorporated by reference to Exhibit 4.1 to Windtree’s Current Report on Form 8-K, as filed with the SEC on April 24, 2023\).](#)
- 4.23 [Form of 10% Convertible Note \(incorporated by reference to Exhibit 4.1 to Windtree’s Current Report on Form 8-K, as filed with the SEC on April 8, 2024\).](#)
- 4.24** Form of Common Warrant.
- 4.25** Form of Pre-Funded Warrant.
- 4.26** Form of Warrant Agency Agreement.
- 5.1** Opinion of Goodwin Procter LLP.
- 10.1† Sublicense Agreement dated October 28, 1996 between Johnson & Johnson, Ortho Pharmaceutical Corporation and Acute Therapeutics, Inc. (incorporated by reference to Exhibit 10.6 to Windtree’s Registration Statement on Form SB-2/A, as filed with the SEC on April 18, 1997 (Commission File Number 333-19375)).
- 10.2† [Amended and Restated License Agreement dated March 28, 2008, between Windtree and Philip Morris USA Inc. \(incorporated by reference to Exhibit 10.4 to Windtree’s Quarterly Report on Form 10-Q for the quarter ended March 31, 2008, as filed with the SEC on May 9, 2008\).](#)
- 10.3†† [Amendment No. 1, effective as of January 17, 2024, to the Amended and Restated License Agreement, between Windtree and Philip Morris USA Inc. dated March 28, 2008 \(incorporated by reference to Exhibit 10.3 to Windtree’s Annual Report on Form 10-K, as filed with the SEC on April 16, 2024\).](#)
- 10.4† [License Agreement dated March 28, 2008, between Windtree and Philip Morris Products S.A. \(incorporated by reference to Exhibit 10.5 to Windtree’s Quarterly Report on Form 10-Q for the quarter ended March 31, 2008, as filed with the SEC on May 9, 2008\).](#)
- 10.5†† [Amendment No. 1, effective as of January 17, 2024, to the License Agreement, between Windtree and Philip Morris Products S.A. dated March 28, 2008 \(incorporated by reference to Exhibit 10.5 to Windtree’s Annual Report on Form 10-K, as filed with the SEC on April 16, 2024\).](#)
- 10.6†† [Amended and Restated Sublicense and Collaboration Agreement dated December 3, 2004, by and between Discovery Laboratories, Inc. \(predecessor-in-interest to Windtree\) and Laboratorios del Dr. Esteve, S.A. \(incorporated by reference to Exhibit 10.3 to Windtree’s Quarterly Report on Form 10-Q for the quarter ended September 30, 2020, as filed with the SEC on November 16, 2020\).](#)
- 10.7†† [Amended and Restated Supply Agreement dated December 3, 2004, by and between Discovery Laboratories, Inc. \(predecessor-in-interest to Windtree\) and Laboratorios del Dr. Esteve, S.A. \(incorporated by reference to Exhibit 10.2 to Windtree’s Quarterly Report on Form 10-Q for the quarter ended September 30, 2020, as filed with the SEC on November 16, 2020\).](#)
- 10.8† [License, Development and Commercialization Agreement dated June 12, 2017, between Windtree and Lee’s Pharmaceutical \(HK\) Ltd. \(incorporated by reference to Exhibit 10.1 to Windtree’s Quarterly Report on Form 10-Q for the quarter ended June 30, 2017, as filed with the SEC on August 21, 2017\).](#)
- 10.9† [Amendment No. 1 dated August 14, 2017 to the License Development and Commercialization Agreement between Windtree and Lee’s Pharmaceutical \(HK\) Ltd. dated June 12, 2017 \(incorporated by reference to Exhibit 10.1 to Windtree’s Quarterly Report on Form 10-Q for the quarter ended September 30, 2017, as filed with the SEC on November 14, 2017\).](#)

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- 10.10 [Amended and Restated License, Development and Commercialization Agreement, by and among Lee's Pharmaceutical \(HK\) Ltd., Zhaoke Pharmaceutical \(Hefei\) Co. Ltd., and Windtree Therapeutics, Inc., effective as of August 9, 2022 \(incorporated by reference to Exhibit 10.1 to Windtree's Quarterly Report on Form 10-Q for the quarter ended September 30, 2022, as filed with the SEC on November 14, 2022\).](#)
- 10.11# [Windtree's 2011 Long-Term Incentive Plan, as amended \(incorporated by reference to Exhibit 10.1 to Windtree's Current Report on Form 8-K, as filed with the SEC on December 31, 2018\).](#)
- 10.12# [Windtree's 2020 Equity Incentive Plan \(incorporated by reference to Exhibit 10.1 to Windtree's Current Report on Form 8-K, as filed with the SEC on December 31, 2020\).](#)
- 10.13# [Amended and Restated Windtree Therapeutics, Inc. 2020 Equity Incentive Plan \(incorporated by reference to Exhibit 10.1 to Windtree's Current Report on Form 8-K, as filed with the SEC on August 16, 2023\).](#)
- 10.14# [Form of Restricted Stock Unit Grant for Employees under Windtree's 2020 Equity Incentive Plan \(incorporated by reference to Exhibit 4.5 to Windtree's Registration Statement on Form S-8, as filed with the SEC on February 12, 2021\).](#)
- 10.15# [Form of Stock Option Grant for Employees under Windtree's 2020 Equity Incentive Plan \(incorporated by reference to Exhibit 4.6 to Windtree's Registration Statement on Form S-8, as filed with the SEC on February 12, 2021\).](#)
- 10.16# [Form of Inducement Award Agreement \(incorporated by reference to Exhibit 4.4 to Windtree's Registration Statement on Form S-8 \(File No. 333-253067\), as filed with the SEC on February 12, 2021\).](#)
- 10.17# [Form of Employee Option Agreement under Windtree's 2011 Long-Term Incentive Plan \(incorporated by reference to Exhibit 10.2 to Windtree's Quarterly Report on Form 10-Q for the quarter ended March 31, 2012, as filed with the SEC on May 15, 2012\).](#)
- 10.18# [Form of Non-Employee Director Option Agreement under Windtree's 2011 Long-Term Incentive Plan \(incorporated by reference to Exhibit 10.10 to Windtree's Form 10-K, as filed with the SEC on April 3, 2020\).](#)
- 10.19# [Form of Restricted Stock Unit Award Agreement for Non-Employee Directors under Windtree's 2011 Long-Term Incentive Plan \(incorporated by reference to Exhibit 10.11 to Windtree's Annual Report on Form 10-K for the year ended December 31, 2014, as filed with the SEC on March 16, 2015\).](#)
- 10.20# [Form of Restricted Stock Unit Award Agreement for Employees under Windtree's 2011 Long-Term Incentive Plan \(incorporated by reference to Exhibit 10.14 to Windtree's Annual Report on Form 10-K for the year ended December 31, 2017, as filed with the SEC on April 17, 2018\).](#)
- 10.21# [Employment Agreement dated February 1, 2016, between Windtree and Craig Fraser \(incorporated by reference to Exhibit 10.1 to Windtree's Current Report on Form 8-K, as filed with the SEC on February 3, 2016\).](#)
- 10.22# [Inducement Stock Option Award Agreement dated February 1, 2016, between Windtree and Craig Fraser \(incorporated by reference to Exhibit 10.3 to Windtree's Current Report on Form 8-K, as filed with the SEC on February 3, 2016\).](#)

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- 10.23# [Amendment dated March 13, 2018, to Employment Agreement dated February 1, 2016, between Windtree and Craig Fraser \(incorporated by reference to Exhibit 10.1 to Windtree's Current Report on Form 8-K, as filed with the SEC on March 16, 2018\).](#)
- 10.24# [Employment Agreement dated December 19, 2014, between Windtree and Steven G. Simonson, M.D. \(incorporated by reference to Exhibit 10.4 to Windtree's Quarterly Report on Form 10-Q, as filed with the SEC on May 11, 2015\).](#)
- 10.25# [Amendment dated December 29, 2014 to Employment Agreement dated December 19, 2014, effective as of April 1, 2015, between Windtree and Steven G. Simonson, M.D. \(incorporated by reference to Exhibit 10.5 to Windtree's Quarterly Report on Form 10-Q, as filed with the SEC on May 11, 2015\).](#)
- 10.26# [Amendment dated March 13, 2018, to Employment Agreement dated December 19, 2014 between Windtree and Steven G. Simonson, M.D. \(incorporated by reference to Exhibit 10.3 to Windtree's Current Report on Form 8-K, as filed with the SEC on March 16, 2018\).](#)
- 10.27# [At The Market Offering Agreement, dated as of November 9, 2023, by and between Windtree Therapeutics, Inc. and Ladenburg Thalmann & Co. Inc. \(incorporated by reference to Exhibit 1.1 to Windtree's Current Report on Form 8-K, as filed with the SEC on November 9, 2023\).](#)
- 10.28# [Form of Indemnification Agreement between Windtree and certain named executive officers and directors \(incorporated by reference to Exhibit 10.4 to Windtree's Current Report on Form 8-K, as filed with the SEC on February 3, 2016\).](#)
- 10.29# [Form of Indemnification Agreement between Windtree and certain named directors \(incorporated by reference to Exhibit 10.23 to Windtree's Annual Report on Form 10-K, as filed with the SEC on April 16, 2019\).](#)
- 10.30 [Lease Agreement dated May 26, 2004, and First Amendment to Lease Agreement, dated April 2, 2007, between TR Stone Manor Corp. and Windtree \(incorporated by reference to Exhibits 10.1 and 10.2 to Windtree's Current Report on Form 8-K, as filed with the SEC on April 6, 2007\).](#)
- 10.31 [Second Amendment to Lease Agreement dated January 3, 2013 between TR Stone Manor Corp. and Windtree \(incorporated by reference to Exhibit 10.1 to Windtree's Current Report on Form 8-K, as filed with the SEC on January 8, 2013\).](#)
- 10.32 [Third Amendment to Lease Agreement dated November 24, 2014 between TR Stone Manor Corp. and Windtree \(incorporated by reference to Exhibit 10.29 to Windtree's Annual Report on Form 10-K, as filed with the SEC on March 31, 2023\).](#)
- 10.33 [Fourth Amendment to Lease Agreement dated April 29, 2016, between PH Stone Manor LP and Windtree \(incorporated by reference to Exhibit 10.1 to Windtree's Current Report on Form 8-K, as filed with the SEC on May 31, 2016\).](#)
- 10.34 [Fifth Amendment to Lease Agreement dated February 23, 2018, between PH Stone Manor LP and Windtree \(incorporated by reference to Exhibit 10.1 to Windtree's Current Report on Form 8-K, as filed with the SEC on March 1, 2018\).](#)
- 10.35† [Supply Agreement dated December 22, 2010 between Corden Pharma \(formerly Genzyme Pharmaceuticals LLC, now known as Corden Pharma\) and Windtree \(incorporated by reference to Exhibit 10.1 to Windtree's Current Report on Form 8-K, as filed with the SEC on December 29, 2010\).](#)
- 10.36 [Exchange and Termination Agreement dated October 27, 2017, between Windtree and Deerfield \(incorporated by reference to Exhibit 10.2 to Windtree's Current Report on Form 8-K, as filed with the SEC on November 1, 2017\).](#)

- 10.37 [Registration Rights Agreement dated October 27, 2017, between Windtree and LPH Investments Limited \(incorporated by reference to Exhibit 99.1 to Windtree's Current Report on Form 8-K, as filed with the SEC on November 1, 2017\).](#)
- 10.38 [Registration Rights Agreement dated March 30, 2018, between Windtree and LPH II Investments Limited \(incorporated by reference to Exhibit 10.2 to Windtree's Current Report on Form 8-K, as filed with the SEC on April 4, 2018\).](#)
- 10.39†† [Collaboration Agreement dated as of October 14, 2014, by and between Battelle Memorial Institute and Discovery Laboratories, Inc. \(predecessor-in-interest to Windtree\) \(incorporated by reference to Exhibit 10.1 to Windtree's Quarterly Report on Form 10-Q for the quarter ended September 30, 2020, as filed with the SEC on November 16, 2020\).](#)
- 10.40 [Payment Restructuring Agreement effective December 7, 2018, between Windtree and Battelle Memorial Institute \(incorporated by reference to Exhibit 10.1 to Windtree's Current Report on Form 8-K, as filed with the SEC on December 7, 2018\).](#)
- 10.41 [Amendment No. 1 dated March 30, 2020 to Payment Restructuring Agreement, effective December 7, 2018, between Windtree and Lee's Pharmaceutical \(HK\) LTD \(incorporated by reference to Exhibit 10.48 to Windtree's Registration Statement on Form S-1/A \(File No. 333-236085\), as filed with the SEC on May 6, 2020\).](#)
- 10.42 [Loan Agreement dated October 25, 2018, between CVie Therapeutics, Lee's Pharmaceutical Holdings Limited, and O-Bank Co., Ltd. \(incorporated by reference to Exhibit 10.34 to Windtree's Annual Report on Form 10-K, as filed with the SEC on April 16, 2019\).](#)
- 10.43 [Shareholder Loan Agreement dated April 24, 2018, between Lee's Pharmaceutical International Limited and CVie Therapeutics \(incorporated by reference to Exhibit 10.35 to Windtree's Annual Report on Form 10-K, as filed with the SEC on April 16, 2019\).](#)
- 10.44 [Shareholder Loan Agreement dated September 20, 2018, between Lee's Pharmaceutical International Limited and CVie Therapeutics \(incorporated by reference to Exhibit 10.36 to Windtree's Annual Report on Form 10-K, as filed with the SEC on April 16, 2019\).](#)
- 10.45 [Shareholder Loan Agreement dated October 26, 2018, between Lee's Pharmaceutical International Limited and CVie Therapeutics \(incorporated by reference to Exhibit 10.37 to Windtree's Annual Report on Form 10-K, as filed with the SEC on April 16, 2019\).](#)
- 10.46 [Shareholder Loan Agreement dated November 16, 2018, between Lee's Pharmaceutical International Limited and CVie Therapeutics \(incorporated by reference to Exhibit 10.38 to Windtree's Annual Report on Form 10-K, as filed with the SEC on April 16, 2019\).](#)
- 10.47 [Merger Agreement dated December 21, 2018, between Windtree, WT Acquisition Corp., and CVie Investments Limited \(incorporated by reference to Exhibit 10.1 to Windtree's Current Report on Form 8-K, as filed with the SEC on December 21, 2018\).](#)
- 10.48 [Indemnification Letter Agreement dated December 21, 2018, between Windtree and Lee's Pharmaceutical Holdings Limited \(incorporated by reference to Exhibit 10.2 to Windtree's Current Report on Form 8-K, as filed with the SEC on December 21, 2018\).](#)
- 10.49 [Securities Purchase Agreement dated December 21, 2018 between Windtree and certain purchasers party thereto \(incorporated by reference to Exhibit 10.3 to Windtree's Current Report on Form 8-K, as filed with the SEC on December 21, 2018\).](#)
- 10.50 [Registration Rights Agreement dated December 21, 2018 between Windtree and certain purchasers party thereto \(incorporated by reference to Exhibit 10.4 to Windtree's Current Report on Form 8-K, as filed with the SEC on December 21, 2018\).](#)

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- 10.51 [Loan Agreement dated October 24, 2019 between Windtree and LPH II Investments Ltd. \(incorporated by reference to Exhibit 10.1 to Windtree's Current Report on Form 8-K, as filed with the SEC on October 28, 2019\).](#)
- 10.52 [Form of Securities Purchase Agreement dated December 6, 2019 by and among Windtree and the purchasers party thereto \(incorporated by reference to Exhibit 10.1 to Windtree's Current Report on Form 8-K, as filed with the SEC on December 9, 2019\).](#)
- 10.53 [Form of Registration Rights Agreement dated December 6, 2019 by and among Windtree and the purchasers party thereto \(incorporated by reference to Exhibit 10.2 to Windtree's Current Report on Form 8-K, as filed with the SEC on December 9, 2019\).](#)
- 10.54# [Employment Agreement dated March 1, 2020, between Windtree and Eric Curtis \(incorporated by reference to Exhibit 10.46 to Windtree's Form 10-K, as filed with the SEC on April 3, 2020\).](#)
- 10.55 [Amendment to No. 1 dated February 20, 2020 to the Securities Purchase Agreement dated December 6, 2019 by and among Windtree and the purchasers party thereto \(incorporated by reference to Exhibit 10.47 to Windtree's Form 10-K, as filed with the SEC on April 3, 2020\).](#)
- 10.56 [Project Financing Agreement, dated August 12, 2020, by and between Windtree and Lee's Pharmaceutical \(HK\) Ltd. \(incorporated by reference to Exhibit 10.4 to Windtree's Quarterly Report on Form 10-Q, as filed with the SEC on November 16, 2020\).](#)
- 10.57# [Employment Agreement by and between Windtree and John Hamill, dated as of July 20, 2020 \(incorporated by reference to Exhibit 10.1 to Windtree's Current Report on Form 8-K, as filed with the SEC on July 23, 2020\).](#)
- 10.58# [Employment Agreement by and between Windtree and Diane Carman, dated as of July 1, 2021 \(incorporated by reference to Exhibit 10.54 to Windtree's Annual Report on Form 10-K, as filed with the SEC on March 31, 2022\).](#)
- 10.59 [Form of Inducement Letter dated January 20, 2023 \(incorporated by reference to Exhibit 10.1 to Windtree's Current Report on Form 8-K, as filed with the SEC on January 26, 2023\).](#)
- 10.60 [Form of Inducement Letter dated February 21, 2023 \(incorporated by reference to Exhibit 10.1 to Windtree's Current Report on Form 8-K, as filed with the SEC on February 22, 2023\).](#)
- 10.61†† [License, Development and Commercialization Agreement, by and between the Company and Lee's Pharmaceutical \(HK\) Ltd., dated January 12, 2024 \(incorporated by reference to Exhibit 10.61 to Windtree's Annual Report on Form 10-K, as filed with the SEC on April 16, 2024\).](#)
- 10.62†† [Exchange and Termination Agreement, by and between the Company and affiliates of Deerfield Management Company, L.P., effective upon January 24, 2024 \(incorporated by reference to Exhibit 10.1 to Windtree's Current Report on Form 8-K, as filed with the SEC on January 25, 2024\).](#)
- 10.63 [Registration Rights Agreement, by and between the Company and affiliates of Deerfield Management Company, L.P., effective upon January 24, 2024 \(incorporated by reference to Exhibit 10.2 to Windtree's Current Report on Form 8-K, as filed with the SEC on January 25, 2024\).](#)
- 10.64+ [Form of Securities Purchase Agreement by and between Windtree Therapeutics, Inc. and the Buyers named therein, dated April 2, 2024 \(incorporated by reference to Exhibit 10.1 to Windtree's Current Report on Form 8-K, as filed with the SEC on April 8, 2024\).](#)
- 10.65+ [Form of Registration Rights Agreement, by and between Windtree Therapeutics, Inc. and the Buyers named therein, dated April 2, 2024 \(incorporated by reference to Exhibit 10.2 to Windtree's Current Report on Form 8-K, as filed with the SEC on April 8, 2024\).](#)

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21.1	Subsidiaries of Windtree (incorporated by reference to Exhibit 21.1 to Windtree's Annual Report on Form 10-K, as filed with the SEC on April 16, 2019).
23.1*	Consent of EisnerAmper LLP, independent registered public accounting firm.
23.2**	Consent of Goodwin Procter LLP (included in Exhibit 5.1).
24.1	Power of Attorney (included on the signature page to this registration statement).
104	Cover Page Interactive Data File (formatted as Inline XBRL).
107*	Filing Fee Table.

* Filed herewith.

** To be filed by amendment.

Compensation Related Contract.

† Confidential treatment received for certain portions of this exhibit.

†† Certain confidential portions have been omitted from this exhibit pursuant to Item 601(b)(10)(iv) of Regulation S-K.

+ 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.

(b)

Financial Statement Schedules.

Schedules not listed above have been omitted because the information required to be set forth therein is not applicable or is shown in the financial statements or notes thereto.

Item 17. Undertakings.

The undersigned registrant hereby undertakes:

(a)(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 the 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% 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 (1)(i), (1)(ii) and (1)(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, or is contained in a form of prospectus filed pursuant to Rule 424(b) that is part of the registration statement.

- (2) That, for the purposes 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 the 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 of the registrant under the Securities Act to any purchaser in the initial distribution of the securities, the undersigned registrant undertakes that in a primary offering of securities of the undersigned registrant pursuant to this registration statement, regardless of the underwriting method used to sell the securities to the purchaser, if the securities are offered or sold to such purchaser by means of any of the following communications, the undersigned registrant will be a seller to the purchaser and will be considered to offer or sell such securities to such purchaser:
 - (i) Any preliminary prospectus or prospectus of the undersigned registrant relating to the offering required to be filed pursuant to Rule 424;
 - (ii) Any free writing prospectus relating to the offering prepared by or on behalf of the undersigned registrant or used or referred to by the undersigned registrant;
 - (iii) The portion of any other free writing prospectus relating to the offering containing material information about the undersigned registrant or its securities provided by or on behalf of the undersigned registrant; and
 - (iv) Any other communication that is an offer in the offering made by the undersigned registrant to the purchaser.
- (5) That, for purposes of determining any liability under the Securities Act:
 - (i) the information omitted from the form of prospectus filed as part of the registration statement in reliance upon Rule 430A and contained in the form of prospectus filed by the Registrant pursuant to Rule 424(b)(1) or (4) or 497(h) under the Securities Act shall be deemed to be part of the registration statement as of the time it was declared effective; and
 - (ii) each post-effective amendment that contains a form of prospectus shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.
- (b) The undersigned 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.
- (h) 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 SEC 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.

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, the registrant has duly caused this registration statement to be signed on its behalf by the undersigned, thereunto duly authorized in the Township of Warrington, Commonwealth of Pennsylvania, on May 9, 2024.

WINDTREE THERAPEUTICS, INC.

By: /s/ Craig E. Fraser

Name: *Craig E. Fraser*

Title: *President and Chief Executive Officer (Principal Executive Officer)*

POWER OF ATTORNEY

KNOW ALL BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints Craig E. Fraser as his or her true and lawful attorney-in-fact and agent, with the full power of substitution, for him or her and in his or her name, place or stead, in any and all capacities, to sign any and all amendments to this registration statement (including post-effective amendments), and to sign any registration statement for the same offering covered by this registration statement that is to be effective upon filing pursuant to Rule 462(b) promulgated under the Securities Act, and all post-effective amendments thereto, and to file the same, with exhibits thereto and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorney-in-fact and agent full power and authority to do and perform each and every act and thing requisite and necessary to be done in and about the premises, as fully to all intents and purposes as he or she might or could do in person, hereby ratifying and confirming all that said attorney-in-fact and agent, or his or her substitute or substitutes, may lawfully do or cause to be done by virtue hereof.

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	Date
<u>/s/ Craig E. Fraser</u> Craig E. Fraser	Director, President, and Chief Executive Officer <i>(Principal Executive Officer and Principal Financial Officer)</i>	May 9, 2024
<u>/s/ Daniel E. Geffken</u> Daniel E. Geffken	Director	May 9, 2024
<u>/s/ Robert A. Scott, M.D.</u> Robert A. Scott, M.D.	Director	May 9, 2024
<u>/s/ Mark Strobeck, Ph.D.</u> Mark Strobeck, Ph.D.	Director	May 9, 2024
<u>/s/ Leslie J. Williams</u> Leslie J. Williams	Director	May 9, 2024

**AMENDED AND RESTATED CERTIFICATE OF INCORPORATION
OF
WINDTREE THERAPEUTICS, INC.**

(Pursuant to Sections 228, 242, and 245 of the
General Corporation Law of the State of Delaware)

A. The Corporation was originally incorporated on November 6, 1992, under the name “Ansan, Inc.” The Corporation changed its name on November 25, 1997, to Discovery Laboratories, Inc. The Corporation changed its name again on April 15, 2016, to Windtree Therapeutics, Inc.

B. This Amended and Restated Certificate of Incorporation was duly adopted in accordance with Sections 242 and 245 of the General Corporation Law of the State of Delaware (“Delaware Corporation Law”) and restates, integrates, and further amends the provisions of the Corporation’s Amended and Restated Certificate of Incorporation, as amended.

C. The text of the Amended and Restated Certificate of Incorporation, as amended, of the Corporation is hereby amended and restated in its entirety to read as follows:

ARTICLE ONE

The name of the corporation (hereinafter called the “Corporation”) is Windtree Therapeutics, Inc.

ARTICLE TWO

The address, including street, number, city, and county, of the registered office of the Corporation in the State of Delaware is 251 Little Falls Drive, Wilmington, DE 19808, County of New Castle; and the name of the registered agent of the Corporation in the State of Delaware at such address is Corporation Service Company.

ARTICLE THREE

The purpose of the Corporation is to engage in any lawful act or activity for which corporations may be organized under the General Corporation Law of the State of Delaware.

ARTICLE FOUR

The total number of shares of all classes of stock which the Corporation shall have the authority to issue is 125,000,000 consisting of 120,000,000 shares of common stock, par value \$0.001 per share (the “Common Stock”), and 5,000,000 shares of preferred stock, par value \$0.001 per share (the “Preferred Stock”).

The Board of Directors may divide the Preferred Stock into any number of series, fix the designation and number of shares of each such series, and determine or change the designation, relative rights, preferences, and limitations of any series of Preferred Stock. The Board of Directors (within the limits and restrictions of any resolutions adopted by it originally fixing the number of any shares of any series of Preferred Stock) may increase or decrease the number of shares initially fixed for any series, but no such decrease shall reduce the number below the number of shares then outstanding and shares duly reserved for issuance.

ARTICLE FIVE

In furtherance and not in limitation of the powers conferred by statute, the Board of Directors shall have the power, both before and after receipt of any payment for any of the Corporation’s capital stock, to adopt, amend, repeal or otherwise alter the Bylaws of the Corporation without any action on the part of the stockholders; provided, however, that the grant of such power to the Board of Directors shall not divest the stockholders of nor limit their power to adopt, amend, repeal, or otherwise alter the Bylaws.

ARTICLE SIX

Elections of directors need not be by written ballot unless the Bylaws of the Corporation shall so provide.

ARTICLE SEVEN

The Corporation reserves the rights to adopt, repeal, rescind or amend in any respect any provisions contained in this Certificate of Incorporation in the manner now or hereafter prescribed by applicable law, and all rights conferred on stockholders herein are granted subject to this reservation.

ARTICLE EIGHT

A director of the Corporation shall, to the fullest extent permitted by the General Corporation Law of the State of Delaware as it now exists or as it may hereafter be amended, not be liable to the Corporation or its stockholders for monetary damages for breach of fiduciary duty as a director. Neither any amendment nor repeal of this Article EIGHT, nor the adoption of any provision of this Amended and Restated Certificate of Incorporation inconsistent with this Article EIGHT, shall eliminate or reduce the effect of this Article EIGHT in respect of any matter occurring or any cause of action, suit or claim that, but for this Article EIGHT, would accrue or arise prior to such amendment, repeal or adoption of an inconsistent provision.

ARTICLE NINE

The Court of Chancery of the State of Delaware shall be the sole and exclusive forum for (i) any derivative action or proceeding brought on behalf of the Corporation, (ii) any action asserting a claim of breach of a fiduciary duty owed by any director or officer of the Corporation to the Corporation or the Corporation's stockholders, (iii) any action asserting a claim against the Corporation arising pursuant to any provision of the Delaware Corporation Law or the Corporation's Certificate of Incorporation or Bylaws, or (iv) any action asserting a claim against the Corporation governed by the internal affairs doctrine."

IN WITNESS WHEREOF, Windtree Therapeutics, Inc. has caused this Amended and Restated Certificate of Incorporation to be signed by its duly authorized officer this 15th day of February, 2018.

Windtree Therapeutics, Inc.

By: /s/Craig E. Fraser
Craig E. Fraser
President and Chief Executive Officer

**CERTIFICATE OF AMENDMENT TO
THE AMENDED AND RESTATED
CERTIFICATE OF INCORPORATION
OF
WINDTREE THERAPEUTICS, INC.**

(Pursuant to Sections 228 and 242 of the
General Corporation Law of the State of Delaware)

The Corporation was originally incorporated on November 6, 1992, under the name “Ansan, Inc.” The Corporation changed its name on November 25, 1997, to Discovery Laboratories, Inc. The Corporation changed its name again on April 15, 2016, to Windtree Therapeutics, Inc.

This Certificate of Amendment to the Amended and Restated Certificate of Incorporation was duly adopted in accordance with Sections 228 and 242 of the General Corporation Law of the State of Delaware (“**Delaware Corporation Law**”) and the amendments set forth below shall become effective upon the filing and effectiveness pursuant to the Delaware Corporation Law of this of Certificate of Amendment to the Amended and Restated Certificate of Incorporation of the Corporation:

1. Article Four of the Amended and Restated Certificate of Incorporation, of the Corporation is hereby amended by adding the following paragraph at the end thereof:

“Upon the filing and effectiveness (the “**Effective Time**”) pursuant to the Delaware Corporation Law of this Certificate of Amendment to the Amended and Restated Certificate of Incorporation of the Corporation, as amended, each three (3) share(s) of the Corporation’s common stock (“**Share**”), par value \$0.001 per share (the “**Common Stock**”), issued and outstanding immediately prior to the Effective Time shall automatically be combined into one (1) validly issued, fully paid and non-assessable share of Common Stock without any further action by the Corporation or the holder thereof, subject to the treatment of fractional share interests as described below (the “**Reverse Stock Split**”). No fractional shares will be issued as a result of the Reverse Stock Split. Instead, stockholders who otherwise would be entitled to receive a fractional shares of Common Stock as a consequence of the Reverse Stock Split will be entitled to receive cash in an amount equal to the product obtained by multiplying (i) the closing price of our Common Stock on the business day immediately preceding the effective date of the Reverse Stock Split as reported on the OTCQB® by (ii) the number of shares of our Common Stock held by the Stockholder that would otherwise have been exchanged for the fractional share interest. Each certificate that immediately prior to the Effective Time represented shares of Common Stock (“**Old Certificates**”), shall thereafter represent that number of shares of Common Stock into which the shares of Common Stock represented by the Old Certificate shall have been combined, subject to the elimination of fractional share interests as described above.”

2. This Certificate of Amendment shall become effective on April 29, 2020 at 12:01 a.m. Eastern Time.

3. Except as set forth in this Certificate of Amendment, the Amended and Restated Certificate of Incorporation, as amended, remains in full force and effect.

IN WITNESS WHEREOF, Windtree Therapeutics, Inc, has caused this Certificate of Amendment to be signed by its duly authorized officer this 28th day of April, 2020.

Windtree Therapeutics, Inc,

By: /s/ Craig E. Fraser

Craig E. Fraser

President and Chief Executive Officer

[Signature Page to Certificate of Amendment]

WINDTREE THERAPEUTICS, INC.
CERTIFICATE OF DESIGNATION
OF
SERIES A PREFERRED STOCK

Pursuant to Section 151 of the
General Corporation Law of the State of Delaware

THE UNDERSIGNED DOES HEREBY CERTIFY, on behalf of Windtree Therapeutics, Inc., a Delaware corporation (the “**Corporation**”), that the following resolution was duly adopted by the board of directors of the Corporation (the “**Board of Directors**”), in accordance with the provisions of Section 151 of the General Corporation Law of the State of Delaware (the “**DGCL**”), at a meeting duly called and held on November 17, 2022, which resolution provides for the creation of a series of the Corporation’s Preferred Stock, par value \$0.001 per share, which is designated as “Series A Preferred Stock,” with the rights, powers and preferences, and the qualifications, limitations and restrictions thereof, set forth therein.

WHEREAS, the Amended and Restated Certificate of Incorporation of the Corporation (as amended, the “**Certificate of Incorporation**”), provides for a class of capital stock of the Corporation known as preferred stock, consisting of 5,000,000 shares, par value \$0.001 per share (the “**Preferred Stock**”), issuable from time to time in one or more series, and further provides that the Board of Directors is expressly authorized, subject to limitations prescribed by law, to provide for the issuance of the shares of Preferred Stock in one or more series, and by filing a certificate of designation pursuant to the DGCL, to establish from time to time the number of shares to be included in each such series, and to fix the designation, powers (including voting powers), preferences and rights of each such series and the qualifications, limitations or restrictions thereof.

NOW, THEREFORE, BE IT RESOLVED, that, pursuant to authority conferred upon the Board of Directors by the Certificate of Incorporation, (i) a series of Preferred Stock be, and hereby is, authorized by the Board of Directors, (ii) the Board of Directors hereby authorizes the issuance of 40,000 shares of Series A Preferred Stock and (iii) the Board of Directors hereby fixes the designations, powers, preferences and rights, and the qualifications, limitations or restrictions thereof, of such shares of Preferred Stock, in addition to any provisions set forth in the Certificate of Incorporation that are applicable to all series of the Preferred Stock, as follows:

TERMS OF PREFERRED STOCK

1. Designation, Amount and Par Value. The series of Preferred Stock created hereby shall be designated as the Series A Preferred Stock (the “**Series A Preferred Stock**”), and the number of shares so designated shall be 40,000. Each share of Series A Preferred Stock shall have a par value of \$0.001 per share.
 2. Dividends. The holders of Series A Preferred Stock, as such, shall not be entitled to receive dividends of any kind.
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3. Voting Rights. Except as otherwise provided by the Certificate of Incorporation or required by law, the holders of shares of Series A Preferred Stock shall have the following voting rights:
- 3.1 Except as otherwise provided herein, each outstanding share of Series A Preferred Stock shall have 1,000,000 votes per share (and, for the avoidance of doubt, each fraction of a share of Series A Preferred Stock shall have a ratable number of votes). The outstanding shares of Series A Preferred Stock shall vote together with the outstanding shares of common stock, par value \$0.001 per share (the “**Common Stock**”), of the Corporation as a single class exclusively with respect to the Reverse Stock Split and the Adjournment Proposal (as such terms are defined below) and shall not be entitled to vote on any other matter except to the extent required under the DGCL. Notwithstanding the foregoing, and for the avoidance of doubt, each share of Series A Preferred Stock (or fraction thereof) redeemed pursuant to the Initial Redemption (as defined below) shall have no voting power with respect to, and the holder of each share of Series A Preferred Stock (or fraction thereof) redeemed pursuant to the Initial Redemption shall have no voting power with respect to any such share of Series A Preferred Stock (or fraction thereof) on, the Reverse Stock Split, the Adjournment Proposal or any other matter brought before any meeting of stockholders held to vote on the Reverse Stock Split. As used herein, (1) the term “**Reverse Stock Split**” means any proposal to adopt an amendment to the Certificate of Incorporation to reclassify the outstanding shares of Common Stock into a smaller number of shares of Common Stock at a ratio specified in or determined in accordance with the terms of such amendment and (2) “**Adjournment Proposal**” means any proposal to adjourn any meeting of stockholders called for the purpose of voting on the Reverse Stock Split.
- 3.2 Unless otherwise provided on any applicable proxy or ballot with respect to the voting on the Reverse Stock Split or the Adjournment Proposal, the vote of each share of Series A Preferred Stock (or fraction thereof) entitled to vote on the Reverse Stock Split, the Adjournment Proposal or any other matter brought before any meeting of stockholders held to vote on the Reverse Stock Split and the Adjournment Proposal shall be cast in the same manner as the vote, if any, of the share of Common Stock (or fraction thereof) in respect of which such share of Series A Preferred Stock (or fraction thereof) was issued as a dividend is cast on the Reverse Stock Split, the Adjournment Proposal or such other matter, as applicable, and the proxy or ballot with respect to shares of Common Stock held by any holder on whose behalf such proxy or ballot is submitted will be deemed to include all shares of Series A Preferred Stock (or fraction thereof) held by such holder. Holders of Series A Preferred Stock will not receive a separate ballot or proxy to cast votes with respect to the Series A Preferred Stock on the Reverse Stock Split, the Adjournment Proposal or any other matter brought before any meeting of stockholders held to vote on the Reverse Stock Split.
4. Rank; Liquidation.
- 4.1 The Series A Preferred Stock shall rank senior to the Common Stock as to any distribution of assets upon a liquidation, dissolution or winding up of the Corporation, whether voluntarily or involuntarily (a “**Dissolution**”). For the avoidance of any doubt, but without limiting the foregoing, neither the merger or consolidation of the Corporation with or into any other entity, nor the sale, lease, exchange, or other disposition of all or substantially all of the Corporation’s assets shall, in and of itself, be deemed to constitute a Dissolution.
- 4.2 Upon any Dissolution, each holder of outstanding shares of Series A Preferred Stock shall be entitled to be paid out of the assets of the Corporation available for distribution to stockholders, prior and in preference to any distribution to the holders of Common Stock, an amount in cash equal to \$0.001 per outstanding share of Series A Preferred Stock.
5. Redemption.
- 5.1 All shares of Series A Preferred Stock that are not present in person or by proxy at any meeting of stockholders held to vote on the Reverse Stock Split and the Adjournment Proposal as of immediately prior to the opening of the polls at such meeting (the “**Initial Redemption Time**”) shall automatically be redeemed by the Corporation at the Initial Redemption Time without further action on the part of the Corporation or the holder thereof (the “**Initial Redemption**”).
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- 5.2 Any outstanding shares of Series A Preferred Stock that have not been redeemed pursuant to an Initial Redemption shall be redeemed in whole, but not in part, (i) if such redemption is ordered by the Board of Directors in its sole discretion, automatically and effective on such time and date specified by the Board of Directors in its sole discretion or (ii) automatically upon the approval by the Corporation's stockholders of the Reverse Stock Split at any meeting of stockholders held for the purpose of voting on the Reverse Stock Split (any such redemption pursuant to this Section 5.2, the "**Subsequent Redemption**" and, together with the Initial Redemption, the "**Redemptions**"). As used herein, the "**Subsequent Redemption Time**" shall mean the effective time of the Subsequent Redemption, and the "**Redemption Time**" shall mean (i) with respect to the Initial Redemption, the Initial Redemption Time and (ii) with respect to the Subsequent Redemption, the Subsequent Redemption Time.
- 5.3 Each share of Series A Preferred Stock redeemed in any Redemption pursuant to this Section 5 shall be redeemed in consideration for the right to receive an amount equal to \$0.01 in cash for each ten whole shares of Series A Preferred Stock that are "beneficially owned" by the "beneficial owner" (as such terms are defined below) thereof as of immediately prior to the applicable Redemption Time and redeemed pursuant to such Redemption, payable upon the applicable Redemption Time; provided, however, that for the avoidance of doubt, the redemption consideration in respect of the shares of Series A Preferred Stock (or fractions thereof) redeemed in any Redemption pursuant to this Section 5: (x) shall entitle the former beneficial owners of less than ten whole shares of Series A Preferred Stock redeemed in any Redemption to no cash payment in respect thereof and (y) shall, in the case of a former beneficial owner of a number of shares of Series A Preferred Stock (or fractions thereof) redeemed pursuant to any Redemption that is not equal to a whole number that is a multiple of ten, entitle such beneficial owner to the same cash payment, if any, in respect of such Redemption as would have been payable in such Redemption to such beneficial owner if the number of shares (or fractions thereof) beneficially owned by such beneficial owner and redeemed pursuant to such Redemption were rounded down to the nearest whole number that is a multiple of ten (such, that for example, the former beneficial owner of 25 shares of Series A Preferred Stock redeemed pursuant to any Redemption shall be entitled to receive the same cash payment in respect of such Redemption as would have been payable to the former beneficial owner of 20 shares of Series A Preferred Stock redeemed pursuant to such Redemption). As used herein, "**Person**" shall mean any individual, firm, corporation, partnership, limited liability company, trust, or other entity, and shall include any successor (by merger or otherwise) to such entity. As used herein, a Person shall be deemed the "**beneficial owner**" of, and shall be deemed to "**beneficially own**," any securities which such Person is deemed to beneficially own, directly, or indirectly, within the meaning of Rule 13d-3 of the General Rules and Regulations under the Securities Exchange Act of 1934, as amended.
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- 5.4 From and after the time at which any shares of Series A Preferred Stock are called for redemption (whether automatically or otherwise) in accordance with Section 5.1 or Section 5.2, such shares of Series A Preferred Stock shall cease to be outstanding, and the only right of the former holders of such shares of Series A Preferred Stock, as such, will be to receive the applicable redemption price, if any. The shares of Series A Preferred Stock redeemed by the Corporation pursuant to this Certificate of Designation shall, upon such redemption, be automatically retired and restored to the status of authorized but unissued shares of Preferred Stock. Notwithstanding anything to the contrary herein or otherwise, and for the avoidance of doubt, any shares of Series A Preferred Stock (or fraction thereof) that have been redeemed pursuant to an Initial Redemption shall not be deemed to be outstanding for the purpose of voting or determining the number of votes entitled to vote on any matter submitted to stockholders (including the Reverse Stock Split, the Adjournment Proposal or any other matter brought before any meeting of stockholders held to vote on the Reverse Stock Split) from and after the time of the Initial Redemption. Notice of any meeting of stockholders for the submission to stockholders of any proposal to approve the Reverse Stock Split shall constitute notice of a redemption of shares of Series A Preferred Stock pursuant to an Initial Redemption and result in the automatic redemption of the applicable shares of Series A Preferred Stock (and/or fractions thereof) pursuant to the Initial Redemption at the Initial Redemption Time pursuant to Section 5.1 hereof. Notice by the Corporation of the stockholders' approval of the Reverse Stock Split, whether by press release or by the filing of a Current Report on Form 8-K with the Securities and Exchange Commission, shall constitute a notice of a redemption of shares of Series A Preferred Stock pursuant to a Subsequent Redemption and result in the automatic redemption of the applicable shares of Series A Preferred Stock (and/or fractions thereof) pursuant to the Subsequent Redemption at the Subsequent Redemption Time pursuant to Section 5.2 hereof. In connection with the filing of this Certificate of Designation, the Corporation has set apart funds for payment for the redemption of all shares of Series A Preferred Stock pursuant to the Redemptions and shall continue to keep such funds apart for such payment through the payment of the purchase price for the redemption of all such shares.
6. Transfer. Shares of Series A Preferred Stock will be uncertificated and represented in book-entry form. No shares of Series A Preferred Stock may be transferred by the holder thereof except in connection with a transfer by such holder of any shares of Common Stock held thereby, in which case a number of one one-thousandths (1 /1,000ths) of a share of Series A Preferred Stock equal to the number of shares of Common Stock to be transferred by such holder shall be automatically transferred to the transferee of such shares of Common Stock. Notice of the foregoing restrictions on transfer shall be given in accordance with Section 151 of the DGCL.
7. Fractional Shares. The Series A Preferred Stock may be issued in whole shares or in any fraction of a share that is one one-thousandth (1/1,000th) of a share or any integral multiple of such fraction, which fractions shall entitle the holder, in proportion to such holder's fractional shares, to exercise voting rights, participate in distributions upon a Dissolution and have the benefit of any other rights of holders of Series A Preferred Stock.
8. Severability. Whenever possible, each provision hereof shall be interpreted in a manner as to be effective and valid under applicable law, but if any provision hereof is held to be prohibited by or invalid under applicable law, then such provision shall be ineffective only to the extent of such prohibition or invalidity, without invalidating or otherwise adversely affecting the remaining provisions hereof.

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IN WITNESS WHEREOF, Windtree Therapeutics, Inc. has caused this Certificate of Designation of Series A Preferred Stock to be duly executed by the undersigned duly authorized officer as of this 18th day of November, 2022.

WINDTREE THERAPEUTICS, INC.

By: /s/ Craig E. Fraser
Name: Craig E. Fraser
Title: President and Chief Executive Officer

[Signature Page to the Certificate of Designation of Series A Preferred Stock]

**CERTIFICATE OF AMENDMENT TO
THE AMENDED AND RESTATED CERTIFICATE OF INCORPORATION
OF
WINDTREE THERAPEUTICS, INC.**

(Pursuant to Sections 228 and 242 of the
General Corporation Law of the State of Delaware)

The Company was originally incorporated on November 6, 1992, under the name “Ansan, Inc.” The Company changed its name on November 25, 1997, to Discovery Laboratories, Inc. The Company changed its name again on April 15, 2016, to Windtree Therapeutics, Inc.

This Certificate of Amendment to the Amended and Restated Certificate of Incorporation was duly adopted in accordance with Sections 228 and 242 of the General Corporation Law of the State of Delaware (“**Delaware Corporation Law**”) and the amendments set forth below shall become effective upon the filing and effectiveness pursuant to the Delaware Corporation Law of this of Certificate of Amendment to the Amended and Restated Certificate of Incorporation of the Company:

1. Article Four of the Amended and Restated Certificate of Incorporation of the Company is hereby amended by adding the following paragraph at the end thereof:

“Upon the filing and effectiveness (the “**Second Effective Time**”) pursuant to the Delaware Corporation Law of this Certificate of Amendment to the Amended and Restated Certificate of Incorporation of the Corporation, as amended, each fifty (50) shares of the Corporation’s common stock, par value \$0.001 per share (the “**Common Stock**”), issued and outstanding immediately prior to the Second Effective Time shall automatically be combined into one (1) validly issued, fully paid and non-assessable share of Common Stock without any further action by the Corporation or the holder thereof (the “**Second Reverse Stock Split**”). No fractional shares will be issued as a result of the Second Reverse Stock Split. Each certificate that immediately prior to the Second Effective Time represented shares of Common Stock (“**Second Old Certificates**”), shall thereafter represent that number of shares of Common Stock into which the shares of Common Stock represented by the Second Old Certificate shall have been combined. Holders who otherwise would be entitled to receive fractional share interests of Common Stock upon the effectiveness of the Second Reverse Stock Split shall be entitled to receive a whole share of Common Stock in lieu of any fractional share created as a result of the Second Reverse Stock Split.”

2. This Certificate of Amendment shall become effective on February 24, 2023 at 12:01 a.m. Eastern Time.

3. Except as set forth in this Certificate of Amendment, the Amended and Restated Certificate of Incorporation, as amended, remains in full force and effect.

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IN WITNESS WHEREOF, Windtree Therapeutics, Inc. has caused this Certificate of Amendment to be signed by its duly authorized officer this 22nd day of February, 2023.

WINDTREE THERAPEUTICS INC

By: /s/ Craig E. Fraser
Craig E. Fraser
President and Chief Executive Officer

[Signature Page to Certificate of Amendment]

**CERTIFICATE OF DESIGNATIONS OF
SERIES B CONVERTIBLE PREFERRED STOCK OF
WINDTREE THERAPEUTICS, INC.**

I, Craig Fraser, hereby certify that I am the President and Chief Executive Officer of Windtree Therapeutics, Inc. (the “**Company**”), a corporation organized and existing under the Delaware General Corporation Law (the “**DGCL**”), and further do hereby certify:

That pursuant to the authority expressly conferred upon the Board of Directors of the Company (the “**Board**”) by the Company’s Certificate of Incorporation, as amended (the “**Certificate of Incorporation**”), and Section 151(g) of the DGCL, the Board on April 1, 2024 adopted the following resolution determining it desirable and in the best interests of the Company and its stockholders for the Company to create a series of five-thousand, five-hundred (5,500) shares of preferred stock designated as “**Series B Convertible Preferred Stock**”, none of which shares have been issued:

RESOLVED, that pursuant to the authority vested in the Board this Company, in accordance with the provisions of the Certificate of Incorporation, a series of preferred stock, par value \$0.001 per share, of the Company be and hereby is created, and that the designation and number of shares thereof and the voting and other powers, preferences and relative, participating, optional or other rights of the shares of such series and the qualifications, limitations and restrictions thereof are as follows:

TERMS OF SERIES B CONVERTIBLE PREFERRED STOCK

1. Designation and Number of Shares. There shall hereby be created and established a series of preferred stock of the Company designated as “Series B Convertible Preferred Stock” (the “**Preferred Shares**”). The authorized number of Preferred Shares shall be 5,500 shares. Each Preferred Share shall have a par value of \$0.001. Capitalized terms not defined herein shall have the meaning as set forth in Section 33 below.

2. Ranking. Except to the extent that the holders of at least a majority of the outstanding Preferred Shares (the “**Required Holders**”) expressly consent to the creation of Parity Stock (as defined below) or Senior Preferred Stock (as defined below) in accordance with Section 18, all shares of capital stock of the Company shall be junior in rank to all Preferred Shares with respect to the preferences as to dividends, distributions and payments upon the liquidation, dissolution and winding up of the Company (such junior stock is referred to herein collectively as “**Junior Stock**”). The rights of all such shares of capital stock of the Company shall be subject to the rights, powers, preferences and privileges of the Preferred Shares. Without limiting any other provision of this Certificate of Designations, without the prior express consent of the Required Holders, voting separate as a single class, the Company shall not hereafter authorize or issue any additional or other shares of capital stock that is (i) of senior rank to the Preferred Shares in respect of the preferences as to dividends, distributions and payments upon the liquidation, dissolution and winding up of the Company (collectively, the “**Senior Preferred Stock**”), (ii) of pari passu rank to the Preferred Shares in respect of the preferences as to dividends, distributions and payments upon the liquidation, dissolution and winding up of the Company (collectively, the “**Parity Stock**”) or (iii) any Junior Stock having a maturity date or any other date requiring redemption or repayment of such shares of Junior Stock that is prior to the Maturity Date. In the event of the merger or consolidation of the Company with or into another corporation, the Preferred Shares shall maintain their relative rights, powers, designations, privileges and preferences provided for herein and no such merger or consolidation shall result inconsistent therewith.

3. Dividends.

(a) From and after April 2, 2024 (the “**Initial Issuance Date**”), each holder of a Preferred Share (each, a “**Holder**” and collectively, the “**Holders**”) shall be entitled to receive dividends (“**Dividends**”), which Dividends shall be computed on the basis of a 360-day year and twelve 30-day months and shall increase the Stated Value of the Preferred Shares on each Dividend Date (each, a “**Capitalized Dividend**”).

(b) Prior to the capitalization of Dividends on an Dividend Date, Dividends on the Preferred Shares shall accrue at 10% per annum (the “**Dividend Rate**”) and be payable by way of inclusion of the Dividends in the Conversion Amount on each Conversion Date in accordance with Section 4(c)(i) or upon any redemption in accordance with Section 12 or upon any required payment upon any Bankruptcy Triggering Event. From and after the occurrence and during the continuance of any Triggering Event, the Dividend Rate shall automatically be increased to eighteen percent (18.0%) per annum (the “**Default Rate**”). In the event that such Triggering Event is subsequently cured (and no other Triggering Event then exists (including, without limitation, for the Company’s failure to pay such Dividends at the Default Rate on the applicable Dividend Date), the adjustment referred to in the preceding sentence shall cease to be effective as of the calendar day immediately following the date of such cure; provided that the Dividends as calculated and unpaid at such increased rate during the continuance of such Triggering Event shall continue to apply to the extent relating to the days after the occurrence of such Triggering Event through and including the date of such cure of such Triggering Event.

4. Conversion. At any time after the Initial Issuance Date, each Preferred Share shall be convertible into validly issued, fully paid and non-assessable shares of Common Stock (as defined below), on the terms and conditions set forth in this Section 4.

(a) Holder’s Conversion Right. Subject to the provisions of Section 4(d), at any time or times on or after the Initial Issuance Date, each Holder shall be entitled to convert any portion of the outstanding Preferred Shares held by such Holder into validly issued, fully paid and non-assessable shares of Common Stock in accordance with Section 4(c) at the Conversion Rate (as defined below). The Company shall not issue any fraction of a share of Common Stock upon any conversion. If the issuance would result in the issuance of a fraction of a share of Common Stock, the Company shall round such fraction of a share of Common Stock up to the nearest whole share. The Company shall pay any and all transfer, stamp, issuance and similar taxes, costs and expenses (including, without limitation, fees and expenses of the Transfer Agent (as defined below)) that may be payable with respect to the issuance and delivery of Common Stock upon conversion of any Preferred Shares.

(b) Conversion Rate. The number of shares of Common Stock issuable upon conversion of any Preferred Share pursuant to Section 4(a) shall be determined by dividing (x) the Conversion Amount of such Preferred Share by (y) the Conversion Price (the “**Conversion Rate**”):

(i) “**Conversion Amount**” means, with respect to each Preferred Share, as of the applicable date of determination, the sum of (1) the Stated Value thereof plus (2) the Additional Amount thereon and any accrued and unpaid Late Charges (as defined below in Section 26(c)) with respect to such Stated Value and Additional Amount as of such date of determination, plus (3) any other amounts owed to such Holder pursuant to this Certificate of Designations or any Transaction Document.

(ii) “**Conversion Price**” means, with respect to each Preferred Share, as of any Conversion Date or other date of determination, \$0.3603, subject to adjustment as provided herein.

(c) Mechanics of Conversion. The conversion of each Preferred Share shall be conducted in the following manner:

(i) Optional Conversion. To convert a Preferred Share into shares of Common Stock on any date (a “**Conversion Date**”), a Holder shall deliver (whether via electronic mail or otherwise), for receipt on or prior to 11:59 p.m., New York time, on such date, a copy of an executed notice of conversion of the share(s) of Preferred Shares subject to such conversion in the form attached hereto as **Exhibit I** (the “**Conversion Notice**”) to the Company. If required by Section 4(c)(iii), within two (2) Trading Days following a conversion of any such Preferred Shares as aforesaid, such Holder shall surrender to a nationally recognized overnight delivery service for delivery to the Company the original certificates, if any, representing the Preferred Shares (the “**Preferred Share Certificates**”) so converted as aforesaid (or an indemnification undertaking with respect to the Preferred Shares in the case of its loss, theft or destruction as contemplated by Section 20(b)). On or before the first (1st) Trading Day following the date of receipt of a Conversion Notice, the Company shall transmit by electronic mail an acknowledgment of confirmation and representation as to whether such shares of Common Stock may then be resold pursuant to Rule 144 or an effective and available registration statement, in the form attached hereto as **Exhibit II**, of receipt of such Conversion Notice to such Holder and the Company’s transfer agent (the “**Transfer Agent**”), which confirmation shall constitute an instruction to the Transfer Agent to process such Conversion Notice in accordance with the terms herein. On or before the second (2nd) Trading Day following each date on which the Company has received a Conversion Notice (or such earlier date as required pursuant to the 1934 Act or other applicable law, rule or regulation for the settlement of a trade initiated on the applicable Conversion Date of such shares of Common Stock issuable pursuant to such Conversion Notice) (the “**Share Delivery Deadline**”), the Company shall (1) provided such shares of Common Stock issuable pursuant to such Conversion Notice are eligible for resale by such Holder pursuant to Rule 144 or pursuant to an effective Registration Statement (the “**Unrestricted Resale Conditions**”) and the Transfer Agent is participating in The Depository Trust Company’s (“**DTC**”) Fast Automated Securities Transfer Program (“**FAST**”), credit such aggregate number of shares of Common Stock to which such Holder shall be entitled pursuant to such conversion to such Holder’s or its designee’s balance account with DTC through its Deposit/Withdrawal at Custodian system, or (2) if the Transfer Agent is not participating in FAST or the Unrestricted Resale Conditions are not satisfied, upon the request of such Holder, issue and deliver (via reputable overnight courier) to the address as specified in such Conversion Notice, a certificate, registered in the name of such Holder or its designee, for the number of shares of Common Stock to which such Holder shall be entitled. If the number of Preferred Shares represented by the Preferred Share Certificate(s) submitted for conversion pursuant to Section 4(c)(iii) is greater than the number of Preferred Shares being converted, then the Company shall, as soon as practicable and in no event later than two (2) Trading Days after receipt of the Preferred Share Certificate(s) and at its own expense, issue and deliver to such Holder (or its designee) a new Preferred Share Certificate or a new Book-Entry (in either case, in accordance with Section 20(d)) representing the number of Preferred Shares not converted. The Person or Persons entitled to receive the shares of Common Stock issuable upon a conversion of Preferred Shares shall be treated for all purposes as the record holder or holders of such shares of Common Stock on the Conversion Date. Notwithstanding anything to the contrary contained in this Certificate of Designations or the Registration Rights Agreement, after the effective date of a Registration Statement (as defined in the Registration Rights Agreement) and prior to a Holder’s receipt of the notice of a Grace Period (as defined in the Registration Rights Agreement), the Company shall cause the Transfer Agent to deliver unlegended shares of Common Stock to such Holder (or its designee) in connection with any sale of Registrable Securities (as defined in the Registration Rights Agreement) with respect to which such Holder has entered into a contract for sale, and delivered a copy of the prospectus included as part of the particular Registration Statement to the extent applicable, and for which such Holder has not yet settled.

(ii) Company's Failure to Timely Convert. If the Company shall fail, for any reason or for no reason, on or prior to the applicable Share Delivery Deadline, either (I) if the Transfer Agent is not participating in FAST or the Unrestricted Resale Conditions are not satisfied, to issue and deliver to such Holder (or its designee) a certificate for the number of shares of Common Stock to which such Holder is entitled and register such shares of Common Stock on the Company's share register or, if the Transfer Agent is participating in FAST and the Unrestricted Resale Conditions are satisfied, to credit such Holder's or its designee's balance account with DTC for such number of shares of Common Stock to which such Holder is entitled upon such Holder's conversion of any Conversion Amount (as the case may be) or (II) if the Registration Statement covering the resale of the shares of Common Stock that are the subject of the Conversion Notice (the "**Unavailable Conversion Shares**") is not available for the resale of such Unavailable Conversion Shares and the Company fails to promptly, but in no event later than as required pursuant to the Registration Rights Agreement (x) notify such Holder and (y) deliver the shares of Common Stock electronically without any restrictive legend by crediting such aggregate number of shares of Common Stock to which such Holder is entitled pursuant to such exercise to the Holder's or its designee's balance account with DTC through its Deposit/Withdrawal At Custodian system (the event described in the immediately foregoing clause (II) is hereinafter referred to as a "**Notice Failure**" and together with the event described in clause (I) above, a "**Conversion Failure**"), then, in addition to all other remedies available to such Holder, (X) the Company shall pay in cash to such Holder on each day after the Share Delivery Deadline that the issuance of such shares of Common Stock is not timely effected an amount equal to 2% of the product of (A) the sum of the number of shares of Common Stock not issued to such Holder on or prior to the Share Delivery Deadline and to which such Holder is entitled, multiplied by (B) any trading price of the Common Stock selected by such Holder in writing as in effect at any time during the period beginning on the applicable Conversion Date and ending on the applicable Share Delivery Deadline, and (Y) such Holder, upon written notice to the Company, may void its Conversion Notice with respect to, and retain or have returned, as the case may be, all, or any portion, of such Preferred Shares that has not been converted pursuant to such Conversion Notice; provided that the voiding of a Conversion Notice shall not affect the Company's obligations to make any payments which have accrued prior to the date of such notice pursuant to this Section 4(c)(ii) or otherwise. In addition to the foregoing, if on or prior to the Share Delivery Deadline either (A) the Transfer Agent is not participating in FAST or the Unrestricted Resale Conditions are not satisfied, the Company shall fail to issue and deliver to such Holder (or its designee) a certificate and register such shares of Common Stock on the Company's share register or, if the Transfer Agent is participating in FAST and the Unrestricted Resale Conditions are satisfied, the Transfer Agent shall fail to credit the balance account of such Holder or such Holder's designee, as applicable, with DTC for the number of shares of Common Stock to which such Holder is entitled upon such Holder's conversion hereunder or pursuant to the Company's obligation pursuant to clause (ii) below or (B) a Notice Failure occurs, and if on or after such Share Delivery Deadline such Holder acquires (in an open market transaction, stock loan or otherwise) shares of Common Stock corresponding to all or any portion of the number of shares of Common Stock issuable upon such conversion that such Holder is entitled to receive from the Company and has not received from the Company in connection with such Conversion Failure or Notice Failure, as applicable (a "**Buy-In**"), then, in addition to all other remedies available to such Holder, the Company shall, within two (2) Business Days after receipt of such Holder's request and in such Holder's discretion, either: (I) pay cash to such Holder in an amount equal to such Holder's total purchase price (including brokerage commissions, stock loan costs and other out-of-pocket expenses, if any) for the shares of Common Stock so acquired (including, without limitation, by any other Person in respect, or on behalf, of such Holder) (the "**Buy-In Price**"), at which point the Company's obligation to so issue and deliver such certificate (and to issue such shares of Common Stock) or credit to the balance account of such Holder or such Holder's designee, as applicable, with DTC for the number of shares of Common Stock to which such Holder is entitled upon such Holder's conversion hereunder (as the case may be) (and to issue such shares of Common Stock) shall terminate, or (II) promptly honor its obligation to so issue and deliver to such Holder a certificate or certificates representing such shares of Common Stock or credit the balance account of such Holder or such Holder's designee, as applicable, with DTC for the number of shares of Common Stock to which such Holder is entitled upon such Holder's conversion hereunder (as the case may be) and pay cash to such Holder in an amount equal to the excess (if any) of the Buy-In Price over the product of (x) such number of shares of Common Stock multiplied by (y) the lowest Closing Sale Price of the Common Stock on any Trading Day during the period commencing on the date of the applicable Conversion Notice and ending on the date of such issuance and payment under this clause (II) (the "**Buy-In Payment Amount**"). 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 certificates representing shares of Common Stock (or to electronically deliver such shares of Common Stock) upon the conversion of the Preferred Shares as required pursuant to the terms hereof.

(iii) Registration; Book-Entry. At the time of issuance of any Preferred Shares hereunder, the applicable Holder may, by written request (including by electronic-mail) to the Company, elect to receive such Preferred Shares in the form of one or more Preferred Share Certificates or in Book-Entry form. The Company (or the Transfer Agent, as custodian for the Preferred Shares) shall maintain a register (the “**Register**”) for the recordation of the names and addresses of the Holders of each Preferred Share and the Stated Value of the Preferred Shares and whether the Preferred Shares are held by such Holder in Preferred Share Certificates or in Book-Entry form (the “**Registered Preferred Shares**”). The entries in the Register shall be conclusive and binding for all purposes absent manifest error. The Company and each Holder of the Preferred Shares shall treat each Person whose name is recorded in the Register as the owner of a Preferred Share for all purposes (including, without limitation, the right to receive payments and Dividends hereunder) notwithstanding notice to the contrary. A Registered Preferred Share may be assigned, transferred or sold only by registration of such assignment or sale on the Register. Upon its receipt of a written request to assign, transfer or sell one or more Registered Preferred Shares by such Holder thereof, the Company shall record the information contained therein in the Register and issue one or more new Registered Preferred Shares in the same aggregate Stated Value as the Stated Value of the surrendered Registered Preferred Shares to the designated assignee or transferee pursuant to Section 20, provided that if the Company does not so record an assignment, transfer or sale (as the case may be) of such Registered Preferred Shares within two (2) Business Days of such a request, then the Register shall be automatically deemed updated to reflect such assignment, transfer or sale (as the case may be). Notwithstanding anything to the contrary set forth in this Section 4, following conversion of any Preferred Shares in accordance with the terms hereof, the applicable Holder shall not be required to physically surrender such Preferred Shares held in the form of a Preferred Share Certificate to the Company unless (A) the full or remaining number of Preferred Shares represented by the applicable Preferred Share Certificate are being converted (in which event such certificate(s) shall be delivered to the Company as contemplated by this Section 4(c)(iii)) or (B) such Holder has provided the Company with prior written notice (which notice may be included in a Conversion Notice) requesting reissuance of Preferred Shares upon physical surrender of the applicable Preferred Share Certificate. Each Holder and the Company shall maintain records showing the Stated Value, Dividends and Late Charges converted and/or paid (as the case may be) and the dates of such conversions and/or payments (as the case may be) or shall use such other method, reasonably satisfactory to such Holder and the Company, so as not to require physical surrender of a Preferred Share Certificate upon conversion. If the Company does not update the Register to record such Stated Value, Dividends and Late Charges converted and/or paid (as the case may be) and the dates of such conversions and/or payments (as the case may be) within two (2) Business Days of such occurrence, then the Register shall be automatically deemed updated to reflect such occurrence. In the event of any dispute or discrepancy, such records of such Holder establishing the number of Preferred Shares to which the record holder is entitled shall be controlling and determinative in the absence of manifest error. A Holder and any transferee or assignee, by acceptance of a certificate, acknowledge and agree that, by reason of the provisions of this paragraph, following conversion of any Preferred Shares, the number of Preferred Shares represented by such certificate may be less than the number of Preferred Shares stated on the face thereof. Each Preferred Share Certificate shall bear the following legend:

ANY TRANSFEREE OR ASSIGNEE OF THIS CERTIFICATE SHOULD CAREFULLY REVIEW THE TERMS OF THE CORPORATION’S CERTIFICATE OF DESIGNATIONS RELATING TO THE SHARES OF SERIES B PREFERRED STOCK REPRESENTED BY THIS CERTIFICATE, INCLUDING SECTION 4(c)(iii) THEREOF. THE NUMBER OF SHARES OF SERIES B PREFERRED STOCK REPRESENTED BY THIS CERTIFICATE MAY BE LESS THAN THE NUMBER OF SHARES OF SERIES B PREFERRED STOCK STATED ON THE FACE HEREOF PURSUANT TO SECTION 4(c)(iii) OF THE CERTIFICATE OF DESIGNATIONS RELATING TO THE SHARES OF SERIES B PREFERRED STOCK REPRESENTED BY THIS CERTIFICATE.

(iv) Pro Rata Conversion; Disputes. In the event that the Company receives a Conversion Notice from more than one Holder for the same Conversion Date and the Company can convert some, but not all, of such Preferred Shares submitted for conversion, the Company shall convert from each Holder electing to have Preferred Shares converted on such date a pro rata amount of such Holder’s Preferred Shares submitted for conversion on such date based on the number of Preferred Shares submitted for conversion on such date by such Holder relative to the aggregate number of Preferred Shares submitted for conversion on such date. In the event of a dispute as to the number of shares of Common Stock issuable to a Holder in connection with a conversion of Preferred Shares, the Company shall issue to such Holder the number of shares of Common Stock not in dispute and resolve such dispute in accordance with Section 25.

(d) Limitation on Beneficial Ownership.

(i) **Beneficial Ownership.** The Company shall not effect the conversion of any of the Preferred Shares held by a Holder, and such Holder shall not have the right to convert any of the Preferred Shares held by such Holder pursuant to the terms and conditions of this Certificate of Designations and any such conversion shall be null and void and treated as if never made, to the extent that after giving effect to such conversion, such Holder together with the other Attribution Parties collectively would beneficially own in excess of 4.99% (the “**Maximum Percentage**”) of the shares of Common Stock outstanding immediately after giving effect to such conversion. For purposes of the foregoing sentence, the aggregate number of shares of Common Stock beneficially owned by such Holder and the other Attribution Parties shall include the number of shares of Common Stock held by such Holder and all other Attribution Parties plus the number of shares of Common Stock issuable upon conversion of the Preferred Shares with respect to which the determination of such sentence is being made, but shall exclude shares of Common Stock which would be issuable upon (A) conversion of the remaining, nonconverted Preferred Shares beneficially owned by such Holder or any of the other Attribution Parties and (B) exercise or conversion of the unexercised or nonconverted portion of any other securities of the Company (including, without limitation, any convertible notes, convertible preferred stock or warrants, including the Preferred Shares and the Notes) beneficially owned by such Holder or any other Attribution Party subject to a limitation on conversion or exercise analogous to the limitation contained in this Section 4(d)(i). For purposes of this Section 4(d)(i), beneficial ownership shall be calculated in accordance with Section 13(d) of the 1934 Act. For purposes of determining the number of outstanding shares of Common Stock a Holder may acquire upon the conversion of such Preferred Shares without exceeding the Maximum Percentage, such Holder may rely on the number of outstanding shares of Common Stock as reflected in (x) the Company’s most recent Annual Report on Form 10-K, Quarterly Report on Form 10-Q, Current Report on Form 8-K or other public filing with the SEC, as the case may be, (y) a more recent public announcement by the Company or (z) any other written notice by the Company or the Transfer Agent, if any, setting forth the number of shares of Common Stock outstanding (the “**Reported Outstanding Share Number**”). If the Company receives a Conversion Notice from a Holder at a time when the actual number of outstanding shares of Common Stock is less than the Reported Outstanding Share Number, the Company shall notify such Holder in writing of the number of shares of Common Stock then outstanding and, to the extent that such Conversion Notice would otherwise cause such Holder’s beneficial ownership, as determined pursuant to this Section 4(d)(i), to exceed the Maximum Percentage, such Holder must notify the Company of a reduced number of shares of Common Stock to be purchased pursuant to such Conversion Notice. For any reason at any time, upon the written or oral request of any Holder, the Company shall within one (1) Business Day confirm orally and in writing or by electronic mail 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 Company, including such Preferred Shares, by such Holder and any other Attribution Party since the date as of which the Reported Outstanding Share Number was reported. In the event that the issuance of shares of Common Stock to a Holder upon conversion of such Preferred Shares results in such Holder and the other Attribution Parties being deemed to beneficially own, in the aggregate, more than the Maximum Percentage of the number of outstanding shares of Common Stock (as determined under Section 13(d) of the 1934 Act), the number of shares so issued by which such Holder’s and the other Attribution Parties’ aggregate beneficial ownership exceeds the Maximum Percentage (the “**Excess Shares**”) shall be deemed null and void and shall be cancelled ab initio, and such Holder shall not have the power to vote or to transfer the Excess Shares. Upon delivery of a written notice to the Company, any Holder may from time to time increase (with such increase not effective until the sixty-first (61st) day after delivery of such notice) or decrease the Maximum Percentage of such Holder to any other percentage not in excess of 9.99% as specified in such notice; provided that (i) any such increase in the Maximum Percentage will not be effective until the sixty-first (61st) day after such notice is delivered to the Company and (ii) any such increase or decrease will apply only to such Holder and the other Attribution Parties and not to any other Holder that is not an Attribution Party of such Holder. For purposes of clarity, the shares of Common Stock issuable to a Holder pursuant to the terms of this Certificate of Designations in excess of the Maximum Percentage shall not be deemed to be beneficially owned by such Holder for any purpose including for purposes of Section 13(d) or Rule 16a-1(a)(1) of the 1934 Act. No prior inability to convert such Preferred Shares pursuant to this paragraph shall have any effect on the applicability of the provisions of this paragraph with respect to any subsequent determination of convertibility. The provisions of this paragraph shall be construed and implemented in a manner otherwise than in strict conformity with the terms of this Section 4(d)(i) to the extent necessary to correct this paragraph (or any portion of this paragraph) which may be defective or inconsistent with the intended beneficial ownership limitation contained in this Section 4(d)(i) or to make changes or supplements necessary or desirable to properly give effect to such limitation. The limitation contained in this paragraph may not be waived and shall apply to a successor holder of such Preferred Shares.

(ii) Principal Market Regulation. The Company shall not issue any shares of Common Stock upon conversion of any Preferred Shares or otherwise pursuant to the terms of this Certificate of Designations if the issuance of such shares of Common Stock (taken together with the issuance of all other shares of Common Stock upon conversion of the Notes) would exceed the aggregate number of shares of Common Stock which the Company may issue upon conversion of the Preferred Shares and/or the Notes (as the case may be) without breaching the Company's obligations under the rules and regulations the listing rules of the Principal Market (the number of shares which may be issued without violating such rules and regulations, including rules related to the aggregate of offerings under NASDAQ Listing Rule 5635(d), the "**Exchange Cap**"), except that such limitation shall not apply in the event that the Company (A) obtains the approval of its stockholders as required by the applicable rules and regulations of the Principal Market for issuances of shares of Common Stock in excess of such amount or (B) obtains a written opinion from outside counsel to the Company that such approval is not required, which opinion shall be reasonably satisfactory to the Required Holders. Until such approval or such written opinion is obtained, no Holder shall be issued in the aggregate, upon conversion of any Preferred Shares and/or any Notes (as the case may be), shares of Common Stock in an amount greater than the product of (i) the Exchange Cap as of the Initial Issuance Date multiplied by (ii) the quotient of (1) the aggregate number of Preferred Shares issued to such Holder on the Initial Issuance Date divided by (2) the aggregate number of Preferred Shares issued to the Holders on the Initial Issuance Date (with respect to each Holder, the "**Exchange Cap Allocation**"). In the event that any Holder shall sell or otherwise transfer any of such Holder's Preferred Shares, the transferee shall be allocated a pro rata portion of such Holder's Exchange Cap Allocation with respect to such portion of such Preferred Shares so transferred, and the restrictions of the prior sentence shall apply to such transferee with respect to the portion of the Exchange Cap Allocation so allocated to such transferee. Upon conversion in full of a holder's Preferred Shares, the difference (if any) between such holder's Exchange Cap Allocation and the number of shares of Common Stock actually issued to such holder upon such holder's conversion in full of such Preferred Shares shall be allocated, to the respective Exchange Cap Allocations of the remaining holders of Preferred Shares and/or related Notes on a pro rata basis in proportion to the shares of Common Stock underlying the Preferred Shares and/or related Notes then held by each such holder of Preferred Shares and/or related Notes. In the event that the Company is prohibited from issuing any shares of Common Stock pursuant to this Section 4(d)(ii)(the "**Exchange Cap Shares**") to a Holder, the Company shall pay cash to such Holder in exchange for the redemption of such number of Preferred Shares held by such Holder that are not convertible into such Exchange Cap Shares at a price equal to the sum of (i) the product of (x) such number of Exchange Cap Shares and (y) the greatest Closing Sale Price of the Common Stock on any Trading Day during the period commencing on the date such Holder delivers the applicable Conversion Notice with respect to such Exchange Cap Shares to the Company and ending on the date of such issuance and payment under this Section 4(d)(ii) and (ii) to the extent of any Buy-In related thereto, any Buy-In Payment Amount, any brokerage commissions and other out-of-pocket expenses, if any, of such Holder incurred in connection therewith (collectively, the "**Exchange Cap Share Cancellation Amount**").

(e) Alternate Conversion upon a Triggering Event.

(i) General. Subject to Section 4(d), at any time after the occurrence of a Triggering Event (regardless of whether such Triggering Event has been cured, or if the Company has delivered an Triggering Event Notice to such applicable Holder or if such Holder has delivered an Triggering Event Redemption Notice to the Company or otherwise notified the Company that an Triggering Event has occurred), such Holder may, at such Holder's option, by delivery of a Conversion Notice to the Company (the date of any such Conversion Notice, each an "**Alternate Conversion Date**"), convert all, or any number of Preferred Shares (such Conversion Amount of the Preferred Shares to be converted pursuant to this Section 4(e), the "**Alternate Conversion Amount**") into shares of Common Stock at the Alternate Conversion Price (each, a "**Alternate Conversion**").

(ii) Mechanics of Alternate Conversion. On any Alternate Conversion Date, a Holder may voluntarily convert any Alternate Conversion Amount pursuant to Section 4(c) (with "Alternate Conversion Price" replacing "Conversion Price" for all purposes hereunder with respect to such Alternate Conversion and "Redemption Premium of the Conversion Amount" replacing "Conversion Amount" in clause (x) of the definition of Conversion Rate above with respect to such Alternate Conversion) by designating in the Conversion Notice delivered pursuant to this Section 4(e) of this Certificate of Designations that such Holder is electing to use the Alternate Conversion Price for such conversion; provided that in the event of the Conversion Floor Price Condition, on the applicable Alternate Conversion Date the Company shall also deliver to the Holder the applicable Alternate Conversion Floor Amount. Notwithstanding anything to the contrary in this Section 4(e), but subject to Section 4(d), until the Company delivers shares of Common Stock representing the applicable Alternate Conversion Amount to such Holder, such Alternate Conversion Amount may be converted by such Holder into shares of Common Stock pursuant to Section 4(c) without regard to this Section 4(e). In the event of an Alternate Conversion pursuant to this Section 4(e) of all, or any number of the Preferred Shares of a Holder, such Holder's damages would be uncertain and difficult to estimate because of the parties' inability to predict future interest rates and the uncertainty of the availability of a suitable substitute investment opportunity for such Holder. Accordingly, any redemption premium due under this Section 4(e), together the Alternate Conversion Price used in such Alternate Conversion, as applicable, is intended by the parties to be, and shall be deemed, a reasonable estimate of, such Holder's actual loss of its investment opportunity and not as a penalty.

5. Triggering Event Redemptions.

(a) Triggering Event. Each of the following events shall constitute a "**Triggering Event**" and each of the events in clauses (x), (xi), and (xii) below, shall constitute a "**Bankruptcy Triggering Event**":

(i) the failure of the applicable Registration Statement (as defined in the Registration Rights Agreement) to be filed with the SEC on or prior to the date that is five (5) days after the applicable Filing Deadline (as defined in the Registration Rights Agreement) or the failure of the applicable Registration Statement to be declared effective by the SEC on or prior to the date that is five (5) days after the applicable Effectiveness Deadline (as defined in the Registration Rights Agreement);

(ii) while the applicable Registration Statement is required to be maintained effective pursuant to the terms of the Registration Rights Agreement, the effectiveness of the applicable Registration Statement lapses for any reason (including, without limitation, the issuance of a stop order) or such Registration Statement (or the prospectus contained therein) is unavailable to any holder of Registrable Securities (as defined in the Registration Rights Agreement) for sale of all of such holder's Registrable Securities in accordance with the terms of the Registration Rights Agreement, and such lapse or unavailability continues for a period of five (5) consecutive days or for more than an aggregate of ten (10) days in any 365-day period (excluding days during an Allowable Grace Period (as defined in the Registration Rights Agreement));

(iii) the suspension (or threatened suspension) from trading or the failure (or threatened failure) of the Common Stock to be trading or listed (as applicable) on an Eligible Market for a period of five (5) consecutive Trading Days;

(iv) the Company's (A) failure to cure a Conversion Failure (as defined herein) or a Conversion Failure (as defined in the Notes) by delivery of the required number of shares of Common Stock within five (5) Trading Days after the applicable Conversion Date (as defined herein) or Conversion Date (as defined in the Notes) (as the case may be) or (B) notice, written or oral, to any holder of Preferred Shares or Notes, including, without limitation, by way of public announcement or through any of its agents, at any time, of its intention not to comply, as required, with a request for conversion of any Notes for shares of Common Stock in accordance with the provisions of the Notes or a request for conversion of any Preferred Shares into shares of Common Stock that is requested in accordance with the provisions of this Certificate of Designations, other than pursuant to Section 4(d) hereof;

(v) except to the extent the Company is in compliance with Section 11(b) below, at any time following the tenth (10th) consecutive day that a Holder's Authorized Share Allocation (as defined in Section 11(a) below) is less than the sum of (A) 300% of the number of shares of Common Stock that such Holder would be entitled to receive upon a conversion, in full, of all of the Preferred Shares then held by such Holder (assuming conversions at the Alternate Conversion Price (as defined herein) then in effect without regard to any limitations on conversion set forth in this Certificate of Designations) and (B) 300% of the number of shares of Common Stock that such Holder would then be entitled to receive upon conversion in full of such Holder's Notes (assuming conversions at the Alternate Conversion Price (as defined in the Notes) then in effect without regard to any limitations on conversion set forth in the Notes);

(vi) the Board fails to declare any Dividend to be capitalized on the applicable Dividend Date in accordance with Section 3;

(vii) the Company's failure to pay to any Holder any amount when and as due under this Certificate of Designations (including, without limitation, the Company's failure to pay any redemption payments or amounts hereunder), the Securities Purchase Agreement or any other Transaction Document or any other agreement, document, certificate or other instrument delivered in connection with the transactions contemplated hereby and thereby (in each case, whether or not permitted pursuant to the DGCL), except, in the case of a failure to pay Late Charges when and as due, in each such case only if such failure remains uncured for a period of at least two (2) Trading Days;;

(viii) the Company fails to remove any restrictive legend on any certificate or any shares of Common Stock issued to the applicable Holder upon conversion or exercise (as the case may be) of any Securities acquired by such Holder under the Transaction Documents as and when required by such Securities, the Letter Agreement or the Securities Purchase Agreement, as applicable, unless otherwise then prohibited by applicable federal securities laws, and any such failure remains uncured for at least five (5) days;;

(ix) the occurrence of any default under, redemption of or acceleration prior to maturity of at least an aggregate of \$500,000 of Indebtedness (as defined in the Securities Purchase Agreement) of the Company or any of its Subsidiaries;

(x) bankruptcy, insolvency, reorganization or liquidation proceedings or other proceedings for the relief of debtors shall be instituted by or against the Company or any Subsidiary and, if instituted against the Company or any Subsidiary by a third party, shall not be dismissed within thirty (30) days of their initiation;

(xi) the commencement by the Company or any Subsidiary of a voluntary case or proceeding under any applicable federal, state or foreign bankruptcy, insolvency, reorganization or other similar law or of any other case or proceeding to be adjudicated a bankrupt or insolvent, or the consent by it to the entry of a decree, order, judgment or other similar document in respect of the Company or any Subsidiary in an involuntary case or proceeding under any applicable federal, state or foreign bankruptcy, insolvency, reorganization or other similar law or to the commencement of any bankruptcy or insolvency case or proceeding against it, or the filing by it of a petition or answer or consent seeking reorganization or relief under any applicable federal, state or foreign law, or the consent by it to the filing of such petition or to the appointment of or taking possession by a custodian, receiver, liquidator, assignee, trustee, sequestrator or other similar official of the Company or any Subsidiary or of any substantial part of its property, or the making by it of an assignment for the benefit of creditors, or the execution of a composition of debts, or the occurrence of any other similar federal, state or foreign proceeding, or the admission by it in writing of its inability to pay its debts generally as they become due, the taking of corporate action by the Company or any Subsidiary in furtherance of any such action or the taking of any action by any Person to commence a Uniform Commercial Code foreclosure sale or any other similar action under federal, state or foreign law;

(xii) the entry by a court of (i) a decree, order, judgment or other similar document in respect of the Company or any Subsidiary of a voluntary or involuntary case or proceeding under any applicable federal, state or foreign bankruptcy, insolvency, reorganization or other similar law or (ii) a decree, order, judgment or other similar document adjudging the Company or any Subsidiary as bankrupt or insolvent, or approving as properly filed a petition seeking liquidation, reorganization, arrangement, adjustment or composition of or in respect of the Company or any Subsidiary under any applicable federal, state or foreign law or (iii) a decree, order, judgment or other similar document appointing a custodian, receiver, liquidator, assignee, trustee, sequestrator or other similar official of the Company or any Subsidiary or of any substantial part of its property, or ordering the winding up or liquidation of its affairs, and the continuance of any such decree, order, judgment or other similar document or any such other decree, order, judgment or other similar document unstayed and in effect for a period of thirty (30) consecutive days;

(xiii) a final judgment or judgments for the payment of money aggregating in excess of \$500,000 are rendered against the Company and/or any of its Subsidiaries and which judgments are not, within thirty (30) days after the entry thereof, bonded, discharged, settled or stayed pending appeal, or are not discharged within thirty (30) days after the expiration of such stay; provided, however, any judgment which is covered by insurance or an indemnity from a credit worthy party shall not be included in calculating the \$500,000 amount set forth above so long as the Company provides each Holder a written statement from such insurer or indemnity provider (which written statement shall be reasonably satisfactory to each Holder) to the effect that such judgment is covered by insurance or an indemnity and the Company or such Subsidiary (as the case may be) will receive the proceeds of such insurance or indemnity within thirty (30) days of the issuance of such judgment;

(xiv) the Company and/or any Subsidiary, individually or in the aggregate, either (i) fails to pay, when due, or within any applicable grace period, any payment with respect to any Indebtedness in excess of \$500,000 due to any third party (other than, with respect to unsecured Indebtedness only, payments contested by the Company and/or such Subsidiary (as the case may be) in good faith by proper proceedings and with respect to which adequate reserves have been set aside for the payment thereof in accordance with GAAP) or is otherwise in breach or violation of any agreement for monies owed or owing in an amount in excess of \$100,000, which breach or violation permits the other party thereto to declare a default or otherwise accelerate amounts due thereunder, or (ii) suffer to exist any other circumstance or event that would, with or without the passage of time or the giving of notice, result in a default or event of default under any agreement binding the Company or any Subsidiary, which default or event of default would or is likely to have a material adverse effect on the business, assets, operations (including results thereof), liabilities, properties, condition (including financial condition) or prospects of the Company or any of its Subsidiaries, individually or in the aggregate;

(xv) other than as specifically set forth in another clause of this Section 5(a), the Company or any Subsidiary breaches any representation or warranty or any covenant or other term or condition of any Transaction Document, except, in the case of a breach of a covenant or other term or condition that is curable, only if such breach remains uncured for a period of two (2) consecutive Trading Days;

(xvi) a false or inaccurate certification (including a false or inaccurate deemed certification) by the Company that as to whether any Triggering Event has occurred;

(xvii) any breach or failure in any respect by the Company or any Subsidiary to comply with any provision of Section 15(m) of this Certificate of Designations;

(xviii) any Material Adverse Effect (as defined in the Securities Purchase Agreement) occurs; or

(xix) any provision of any Transaction Document shall at any time for any reason (other than pursuant to the express terms thereof) cease to be valid and binding on or enforceable against the Company, or the validity or enforceability thereof shall be contested, directly or indirectly, by the Company or any Subsidiary, or a proceeding shall be commenced by the Company or any Subsidiary or any governmental authority having jurisdiction over any of them, seeking to establish the invalidity or unenforceability thereof or the Company or any of its Subsidiaries shall deny in writing that it has any liability or obligation purported to be created under one or more Transaction Documents.

(b) Notice of a Triggering Event; Redemption Right. Upon the occurrence of a Triggering Event with respect to the Preferred Shares, the Company shall within one (1) Business Day deliver written notice thereof via electronic mail and overnight courier (with next day delivery specified) (an “**Triggering Event Notice**”) to each Holder. At any time after the earlier of a Holder’s receipt of a Triggering Event Notice and such Holder becoming aware of a Triggering Event, such Holder may require the Company to redeem (regardless of whether such Triggering Event has been cured) all or any of the Preferred Shares by delivering written notice thereof (the “**Triggering Event Redemption Notice**”) to the Company, which Triggering Event Redemption Notice shall indicate the number of the Preferred Shares such Holder is electing to redeem. Each of the Preferred Shares subject to redemption by the Company pursuant to this Section 5(b) shall be redeemed by the Company at a price equal to the greater of (i) the product of (A) the Conversion Amount to be redeemed multiplied by (B) the Redemption Premium and (ii) the product of (X) the Conversion Rate with respect to the Conversion Amount in effect at such time as such Holder delivers a Triggering Event Redemption Notice multiplied by (Y) the product of (1) the Redemption Premium multiplied by (2) the greatest Closing Sale Price of the Common Stock on any Trading Day during the period commencing on the date immediately preceding such Triggering Event and ending on the date the Company makes the entire payment required to be made under this Section 5(b) (the “**Triggering Event Redemption Price**”). Redemptions required by this Section 5(b) shall be made in accordance with the provisions of Section 12. To the extent redemptions required by this Section 5(b) are deemed or determined by a court of competent jurisdiction to be prepayments of the Preferred Shares by the Company, such redemptions shall be deemed to be voluntary prepayments. Notwithstanding anything to the contrary in this Section 5(b), but subject to Section 4(d), until the Triggering Event Redemption Price (together with any Late Charges thereon) is paid in full, the Conversion Amount submitted for redemption under this Section 5(b) (together with any Late Charges thereon) may be converted, in whole or in part, by such Holder into Common Stock pursuant to the terms of this Certificate of Designations. In the event of the Company’s redemption of any of the Preferred Shares under this Section 5(b), a Holder’s damages would be uncertain and difficult to estimate because of the parties’ inability to predict future interest rates and the uncertainty of the availability of a suitable substitute investment opportunity for such Holder. Accordingly, any redemption premium due under this Section 5(b) is intended by the parties to be, and shall be deemed, a reasonable estimate of such Holder’s actual loss of its investment opportunity and not as a penalty. Any redemption upon a Triggering Event shall not constitute an election of remedies by the applicable Holder or any other Holder, and all other rights and remedies of each Holder shall be preserved.

(c) Mandatory Redemption upon Bankruptcy Triggering Event. Notwithstanding anything to the contrary herein, and notwithstanding any conversion that is then required or in process, upon any Bankruptcy Triggering Event, whether occurring prior to or following the Maturity Date, the Company shall immediately redeem, in cash, each of the Preferred Shares then outstanding at a redemption price equal to the applicable Triggering Event Redemption Price (calculated as if such Holder shall have delivered the Triggering Event Redemption Notice immediately prior to the occurrence of such Bankruptcy Triggering Event), without the requirement for any notice or demand or other action by any Holder or any other person or entity, provided that a Holder may, in its sole discretion, waive such right to receive payment upon a Bankruptcy Triggering Event, in whole or in part, and any such waiver shall not affect any other rights of such Holder or any other Holder hereunder, including any other rights in respect of such Bankruptcy Triggering Event, any right to conversion, and any right to payment of such Triggering Event Redemption Price or any other Redemption Price, as applicable.

6. Rights Upon Fundamental Transactions.

(a) Assumption. The Company shall not enter into or be party to a Fundamental Transaction unless (i) the Successor Entity assumes in writing all of the obligations of the Company under this Certificate of Designations and the other Transaction Documents in accordance with the provisions of this Section 6(a) pursuant to written agreements in form and substance satisfactory to the Required Holders and approved by the Required Holders prior to such Fundamental Transaction, including agreements to deliver to each holder of Preferred Shares in exchange for such Preferred Shares a security of the Successor Entity evidenced by a written instrument substantially similar in form and substance to this Certificate of Designations, including, without limitation, having a stated value and dividend rate equal to the stated value and dividend rate of the Preferred Shares held by the Holders and having similar ranking to the Preferred Shares, and satisfactory to the Required Holders and (ii) the Successor Entity (including its Parent Entity) is a publicly traded corporation whose shares of common stock are quoted on or listed for trading on an Eligible Market. Upon the occurrence of any 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 Designations and the other Transaction Documents referring to the "Company" shall refer instead to the Successor Entity), and may exercise every right and power of the Company and shall assume all of the obligations of the Company under this Certificate of Designations and the other Transaction Documents with the same effect as if such Successor Entity had been named as the Company herein and therein. In addition to the foregoing, upon consummation of a Fundamental Transaction, the Successor Entity shall deliver to each Holder confirmation that there shall be issued upon conversion or redemption of the Preferred Shares at any time after the consummation of such Fundamental Transaction, in lieu of the shares of Common Stock (or other securities, cash, assets or other property (except such items still issuable under Sections 7 and 17, which shall continue to be receivable thereafter)) issuable upon the conversion or redemption of the Preferred Shares prior to such Fundamental Transaction, such shares of the publicly traded common stock (or their equivalent) of the Successor Entity (including its Parent Entity) which each Holder would have been entitled to receive upon the happening of such Fundamental Transaction had all the Preferred Shares held by each Holder been converted immediately prior to such Fundamental Transaction (without regard to any limitations on the conversion of the Preferred Shares contained in this Certificate of Designations), as adjusted in accordance with the provisions of this Certificate of Designations. Notwithstanding the foregoing, such Holder may elect, at its sole option, by delivery of written notice to the Company to waive this Section 6(a) to permit the Fundamental Transaction without the assumption of the Preferred Shares. The provisions of this Section 6 shall apply similarly and equally to successive Fundamental Transactions and shall be applied without regard to any limitations on the conversion or redemption of the Preferred Shares.

(b) **Notice of a Change of Control Redemption Right.** No sooner than twenty (20) Trading Days nor later than ten (10) Trading Days prior to the consummation of a Change of Control (the “**Change of Control Date**”), but not prior to the public announcement of such Change of Control, the Company shall deliver written notice thereof via electronic mail and overnight courier to each Holder (a “**Change of Control Notice**”). At any time during the period beginning after a Holder’s receipt of a Change of Control Notice or such Holder becoming aware of a Change of Control if a Change of Control Notice is not delivered to such Holder in accordance with the immediately preceding sentence (as applicable) and ending on twenty (20) Trading Days after the later of (A) the date of consummation of such Change of Control or (B) the date of receipt of such Change of Control Notice or (C) the date of the announcement of such Change of Control, such Holder may require the Company to redeem all or any portion of such Holder’s Preferred Shares by delivering written notice thereof (“**Change of Control Redemption Notice**”) to the Company, which Change of Control Redemption Notice shall indicate the number of Preferred Shares such Holder is electing to have the Company redeem. Each Preferred Share subject to redemption pursuant to this Section 6(b) shall be redeemed by the Company in cash at a price equal to the greatest of (i) the product of (w) the Change of Control Redemption Premium multiplied by (y) the Conversion Amount of the Preferred Shares being redeemed, (ii) the product of (x) the Change of Control Redemption Premium multiplied by (y) the product of (A) the Conversion Amount of the Preferred Shares being redeemed multiplied by (B) the quotient determined by dividing (I) the greatest Closing Sale Price of the shares of Common Stock during the period beginning on the date immediately preceding the earlier to occur of (1) the consummation of the applicable Change of Control and (2) the public announcement of such Change of Control and ending on the date such Holder delivers the Change of Control Redemption Notice by (II) the Conversion Price then in effect and (iii) the product of (y) the Change of Control Redemption Premium multiplied by (z) the product of (A) the Conversion Amount of the Preferred Shares being redeemed multiplied by (B) the quotient of (I) the aggregate cash consideration and the aggregate cash value of any non-cash consideration per share of Common Stock to be paid to such holders of the shares of Common Stock upon consummation of such Change of Control (any such non-cash consideration constituting publicly-traded securities shall be valued at the highest of the Closing Sale Price of such securities as of the Trading Day immediately prior to the consummation of such Change of Control, the Closing Sale Price of such securities on the Trading Day immediately following the public announcement of such proposed Change of Control and the Closing Sale Price of such securities on the Trading Day immediately prior to the public announcement of such proposed Change of Control) divided by (II) the Conversion Price then in effect (the “**Change of Control Redemption Price**”). Redemptions required by this Section 6(b) shall have priority to payments to all other stockholders of the Company in connection with such Change of Control. To the extent redemptions required by this Section 6(b) are deemed or determined by a court of competent jurisdiction to be prepayments of the Preferred Shares by the Company, such redemptions shall be deemed to be voluntary prepayments. Notwithstanding anything to the contrary in this Section 6(b), but subject to Section 4(d), until the applicable Change of Control Redemption Price (together with any Late Charges thereon) is paid in full to the applicable Holder, the Preferred Shares submitted by such Holder for redemption under this Section 6(b) may be converted, in whole or in part, by such Holder into Common Stock pursuant to Section 4 or in the event the Conversion Date is after the consummation of such Change of Control, stock or equity interests of the Successor Entity substantially equivalent to the Company’s shares of Common Stock pursuant to Section 6(a). In the event of the Company’s redemption of any of the Preferred Shares under this Section 6(b), such Holder’s damages would be uncertain and difficult to estimate because of the parties’ inability to predict future interest rates and the uncertainty of the availability of a suitable substitute investment opportunity for a Holder. Accordingly, any redemption premium due under this Section 6(b) is intended by the parties to be, and shall be deemed, a reasonable estimate of such Holder’s actual loss of its investment opportunity and not as a penalty. The Company shall make payment of the applicable Change of Control Redemption Price concurrently with the consummation of such Change of Control if a Change of Control Redemption Notice is received prior to the consummation of such Change of Control and within two (2) Trading Days after the Company’s receipt of such notice otherwise (the “**Change of Control Redemption Date**”). Redemptions required by this Section 6 shall be made in accordance with the provisions of Section 12.

7. Rights Upon Issuance of Purchase Rights and Other Corporate Events.

(a) Purchase Rights. In addition to any adjustments pursuant to Section 8 and Section 17 below, if at any time the Company grants, issues or sells any Options, Convertible Securities or rights to purchase stock, warrants, securities or other property pro rata to all or substantially all of the record holders of any class of Common Stock (the “**Purchase Rights**”), then each Holder will be entitled to acquire, upon the terms applicable to such Purchase Rights, the aggregate Purchase Rights which such Holder could have acquired if such Holder had held the number of shares of Common Stock acquirable upon complete conversion of all the Preferred Shares (without taking into account any limitations or restrictions on the convertibility of the Preferred Shares and assuming for such purpose that all the Preferred Shares were converted at the Alternate Conversion Price as of the applicable record date) held by such Holder immediately prior to 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 such Holder’s right to participate in any such Purchase Right would result in such Holder and the other Attribution Parties exceeding the Maximum Percentage, then such Holder shall not be entitled to participate in such Purchase Right to such extent of the Maximum Percentage (and shall not be entitled to beneficial ownership of such shares of Common Stock as a result of such Purchase Right (and beneficial ownership) to such extent of any such excess) and such Purchase Right to such extent shall be held in abeyance (and, if such Purchase Right has an expiration date, maturity date or other similar provision, such term shall be extended by such number of days held in abeyance, if applicable) for the benefit of such Holder until such time or times, if ever, as its right thereto would not result in such Holder and the other Attribution Parties exceeding the Maximum Percentage, at which time or times such Holder shall be granted such right (and any Purchase Right granted, issued or sold on such initial Purchase Right or on any subsequent Purchase Right held similarly in abeyance (and, if such Purchase Right has an expiration date, maturity date or other similar provision, such term shall be extended by such number of days held in abeyance, if applicable)) to the same extent as if there had been no such limitation.

(b) Other Corporate Events. In addition to and not in substitution for any other rights hereunder, prior to the consummation of any Fundamental Transaction pursuant to which holders of shares of Common Stock are entitled to receive securities or other assets with respect to or in exchange for shares of Common Stock (a “**Corporate Event**”), the Company shall make appropriate provision to ensure that each Holder will thereafter have the right, at such Holder’s option, to receive upon a conversion of all the Preferred Shares held by such Holder (i) in addition to the shares of Common Stock receivable upon such conversion, such securities or other assets to which such Holder would have been entitled with respect to such shares of Common Stock had such shares of Common Stock been held by such Holder upon the consummation of such Corporate Event (without taking into account any limitations or restrictions on the convertibility of the Preferred Shares set forth in this Certificate of Designations) or (ii) in lieu of the shares of Common Stock otherwise receivable upon such conversion, such securities or other assets received by the holders of shares of Common Stock in connection with the consummation of such Corporate Event in such amounts as such Holder would have been entitled to receive had the Preferred Shares held by such Holder initially been issued with conversion rights for the form of such consideration (as opposed to shares of Common Stock) at a conversion rate for such consideration commensurate with the Conversion Rate. Provision made pursuant the preceding sentence shall be in a form and substance satisfactory to the Required Holders. The provisions of this Section 7 shall apply similarly and equally to successive Corporate Events and shall be applied without regard to any limitations on the conversion or redemption of the Preferred Shares set forth in this Certificate of Designations.

8. Rights Upon Issuance of Other Securities.

(a) Adjustment of Conversion Price upon Issuance of Common Stock. If and whenever on or after the Subscription Date the Company grants, issues or sells (or enters into any agreement to grant, issue or sell), or in accordance with this Section 8(a) is deemed to have granted, issued or sold, any shares of Common Stock (including the granting, issuance or sale of shares of Common Stock owned or held by or for the account of the Company, but excluding any Excluded Securities granted, issued or sold or deemed to have been granted, issued or sold) for a consideration per share (the “**New Issuance Price**”) less than a price equal to the Conversion Price in effect immediately prior to such granting, issuance or sale or deemed granting, issuance or sale (such Conversion Price then in effect is referred to herein as the “**Applicable Price**”) (the foregoing a “**Dilutive Issuance**”), then, immediately after such Dilutive Issuance, (I) if prior to such time after the Issuance Date that the Company has consummated one or more Subsequent Placements (as defined in the Securities Purchase Agreement) with net cash proceeds to the Company, in the aggregate, of at least \$4 million (such time of consummation, the “**Weighted Average Trigger Time**”), the Conversion Price then in effect shall be reduced to an amount equal to the New Issuance Price (including, for the avoidance of doubt, for any Subsequent Placement that results in such Weighted Average Trigger Time) or (II) if after such Weighted Average Trigger Time, the Conversion Price then in effect shall be reduced to an amount equal to the product of (A) the Applicable Price and (B) the quotient determined by dividing (1) the sum of (I) the product derived by multiplying the Applicable Price by the number of shares of Common Stock Deemed Outstanding immediately prior to such Dilutive Issuance plus (II) the consideration, if any, received by the Company upon such Dilutive Issuance, by (2) the product derived by multiplying (I) the Applicable Price by (II) the number of shares of Common Stock Deemed Outstanding immediately after such Dilutive Issuance. For all purposes of the foregoing (including, without limitation, determining the adjusted Conversion Price and the New Issuance Price under this Section 8(a)), the following shall be applicable:

(i) Issuance of Options. If the Company in any manner grants, issues or sells (or enters into any agreement to grant, issue or sell) any Options and the lowest price per share for which one share of Common Stock is at any time issuable upon the exercise of any such Option or upon conversion, exercise or exchange of any Convertible Securities issuable upon exercise of any such Option or otherwise pursuant to the terms thereof is less than the Applicable Price, then such share of Common Stock shall be deemed to be outstanding and to have been issued and sold by the Company at the time of the granting, issuance or sale of such Option for such price per share. For purposes of this Section 8(a)(i), the “lowest price per share for which one share of Common Stock is at any time issuable upon the exercise of any such Option or upon conversion, exercise or exchange of any Convertible Securities issuable upon exercise of any such Option or otherwise pursuant to the terms thereof” shall be equal to (1) the lower of (x) the sum of the lowest amounts of consideration (if any) received or receivable by the Company with respect to any one share of Common Stock upon the granting, issuance or sale of such Option, upon exercise of such Option and upon conversion, exercise or exchange of any Convertible Security issuable upon exercise of such Option or otherwise pursuant to the terms thereof and (y) the lowest exercise price set forth in such Option for which one share of Common Stock is issuable (or may become issuable assuming all possible market conditions) upon the exercise of any such Options or upon conversion, exercise or exchange of any Convertible Securities issuable upon exercise of any such Option or otherwise pursuant to the terms thereof, minus (2) the sum of all amounts paid or payable to the holder of such Option (or any other Person) with respect to any one share of Common Stock upon the granting, issuance or sale of such Option, upon exercise of such Option and upon conversion, exercise or exchange of any Convertible Security issuable upon exercise of such Option or otherwise pursuant to the terms thereof plus the value of any other consideration (including, without limitation, consideration consisting of cash, debt forgiveness, assets or any other property) received or receivable by, or benefit conferred on, the holder of such Option (or any other Person). Except as contemplated below, no further adjustment of the Conversion Price shall be made upon the actual issuance of such share of Common Stock or of such Convertible Securities upon the exercise of such Options or otherwise pursuant to the terms thereof or upon the actual issuance of such shares of Common Stock upon conversion, exercise or exchange of such Convertible Securities.

(ii) Issuance of Convertible Securities. If the Company in any manner issues or sells (or enters into any agreement to issue or sell) any Convertible Securities and the lowest price per share for which one share of Common Stock is at any time issuable upon the conversion, exercise or exchange thereof or otherwise pursuant to the terms thereof is less than the Applicable Price, then such share of Common Stock shall be deemed to be outstanding and to have been issued and sold by the Company at the time of the issuance or sale (or the time of execution of such agreement to issue or sell, as applicable) of such Convertible Securities for such price per share. For the purposes of this Section 8(a)(ii), the “lowest price per share for which one share of Common Stock is at any time issuable upon the conversion, exercise or exchange thereof or otherwise pursuant to the terms thereof” shall be equal to (1) the lower of (x) the sum of the lowest amounts of consideration (if any) received or receivable by the Company with respect to one share of Common Stock upon the issuance or sale (or pursuant to the agreement to issue or sell, as applicable) of the Convertible Security and upon conversion, exercise or exchange of such Convertible Security or otherwise pursuant to the terms thereof and (y) the lowest conversion price set forth in such Convertible Security for which one share of Common Stock is issuable (or may become issuable assuming all possible market conditions) upon conversion, exercise or exchange thereof or otherwise pursuant to the terms thereof minus (2) the sum of all amounts paid or payable to the holder of such Convertible Security (or any other Person) with respect to any one share of Common Stock upon the issuance or sale (or the agreement to issue or sell, as applicable) of such Convertible Security plus the value of any other consideration received or receivable (including, without limitation, any consideration consisting of cash, debt forgiveness, assets or other property) by, or benefit conferred on, the holder of such Convertible Security (or any other Person). Except as contemplated below, no further adjustment of the Conversion Price shall be made upon the actual issuance of such shares of Common Stock upon conversion, exercise or exchange of such Convertible Securities or otherwise pursuant to the terms thereof, and if any such issuance or sale of such Convertible Securities is made upon exercise of any Options for which adjustment of the Conversion Price has been or is to be made pursuant to other provisions of this Section 8(a), except as contemplated below, no further adjustment of the Conversion Price shall be made by reason of such issuance or sale.

(iii) Change in Option Price or Rate of Conversion. If the purchase or exercise price provided for in any Options, the additional consideration, if any, payable upon the issue, conversion, exercise or exchange of any Convertible Securities, or the rate at which any Convertible Securities are convertible into or exercisable or exchangeable for shares of Common Stock increases or decreases at any time (other than proportional changes in conversion or exercise prices, as applicable, in connection with an event referred to in Section 8(b) below), the Conversion Price in effect at the time of such increase or decrease shall be adjusted to the Conversion Price which would have been in effect at such time had such Options or Convertible Securities provided for such increased or decreased purchase price, additional consideration or increased or decreased conversion rate (as the case may be) at the time initially granted, issued or sold. For purposes of this Section 8(a)(iii), if the terms of any Option or Convertible Security (including, without limitation, any Option or Convertible Security that was outstanding as of the Subscription Date) are increased or decreased in the manner described in the immediately preceding sentence, then such Option or Convertible Security and the shares of Common Stock deemed issuable upon exercise, conversion or exchange thereof shall be deemed to have been issued as of the date of such increase or decrease. No adjustment pursuant to this Section 8(a) shall be made if such adjustment would result in an increase of the Conversion Price then in effect.

(iv) Calculation of Consideration Received. If any Option and/or Convertible Security and/or Adjustment Right is issued in connection with the issuance or sale or deemed issuance or sale of any other securities of the Company (as determined by the Required Holders, the “**Primary Security**”, and such Option and/or Convertible Security and/or Adjustment Right, the “**Secondary Securities**”), together comprising one integrated transaction (or one or more transactions if such issuances or sales or deemed issuances or sales of securities of the Company either (A) have at least one investor or purchaser in common, (B) are consummated in reasonable proximity to each other and/or (C) are consummated under the same plan of financing), the aggregate consideration per share of Common Stock with respect to such Primary Security shall be deemed to be equal to the difference of (x) the lowest price per share for which one share of Common Stock was issued (or was deemed to be issued pursuant to Section 8(a)(i) or 8(a)(ii) above, as applicable) in such integrated transaction solely with respect to such Primary Security, minus (y) with respect to such Secondary Securities, the sum of (A) the Black Scholes Consideration Value of each such Option, if any, (B) the fair market value (as mutually and timely determined in good faith by the Company and the Holder) or the Black Scholes Consideration Value, as applicable, of such Adjustment Right, if any, and (C) the fair market value (as mutually and timely determined in good faith by the Company and the Holder) of such Convertible Security, if any, in each case, as determined on a per share basis in accordance with this Section 8(a)(iv). If the Company and the Holder are unable to timely agree upon any such fair market value then such dispute shall be resolved in accordance with the procedures of Section 25. If any shares of Common Stock, Options or Convertible Securities are issued or sold or deemed to have been issued or sold for cash, the consideration received therefor (for the purpose of determining the consideration paid for such Common Stock, Option or Convertible Security, but not for the purpose of the calculation of the Black Scholes Consideration Value) will be deemed to be the net amount of consideration received by the Company therefor. If any shares of Common Stock, Options or Convertible Securities are issued or sold for a consideration other than cash, the amount of such consideration received by the Company (for the purpose of determining the consideration paid for such Common Stock, Option or Convertible Security, but not for the purpose of the calculation of the Black Scholes Consideration Value), will be the fair value of such consideration, except where such consideration consists of publicly traded securities, in which case the amount of consideration received by the Company for such securities will be the arithmetic average of the VWAPs of such security for each of the five (5) Trading Days immediately preceding the date of receipt. If any shares of Common Stock, Options or Convertible Securities are issued to the owners of the non-surviving entity in connection with any merger in which the Company is the surviving entity, the amount of consideration therefor (for the purpose of determining the consideration paid for such Common Stock, Option or Convertible Security, but not for the purpose of the calculation of the Black Scholes Consideration Value), will be deemed to be the fair value of such portion of the net assets and business of the non-surviving entity as is attributable to such shares of Common Stock, Options or Convertible Securities (as the case may be). The fair value of any consideration other than cash or publicly traded securities will be determined jointly by the Company and the Required Holders. If the Company and the Holder are unable to timely agree upon any such fair market value then such dispute shall be resolved in accordance with the procedures of Section 25.

(v) Record Date. If the Company takes a record of the holders of shares of Common Stock for the purpose of entitling them (A) to receive a dividend or other distribution payable in shares of Common Stock, Options or in Convertible Securities or (B) to subscribe for or purchase shares of Common Stock, Options or Convertible Securities, then such record date will be deemed to be the date of the issuance or sale of the shares of Common Stock deemed to have been issued or sold upon the declaration of such dividend or the making of such other distribution or the date of the granting of such right of subscription or purchase (as the case may be).

(b) Adjustment of Conversion Price upon Subdivision or Combination of Common Stock. Without limiting any provision of Section 6, Section 17 or Section 8(a), if the Company at any time on or after the Subscription Date subdivides (by any stock split, stock dividend, stock combination, recapitalization or other similar transaction) one or more classes of its outstanding shares of Common Stock into a greater number of shares, the Conversion Price in effect immediately prior to such subdivision will be proportionately reduced. Without limiting any provision of Section 6, Section 17 or Section 8(a), if the Company at any time on or after the Subscription Date combines (by any stock split, stock dividend, stock combination, recapitalization or other similar transaction) one or more classes of its outstanding shares of Common Stock into a smaller number of shares, the Conversion Price in effect immediately prior to such combination will be proportionately increased. Any adjustment pursuant to this Section 8(b) shall become effective immediately after the effective date of such subdivision or combination. If any event requiring an adjustment under this Section 8(b) occurs during the period that a Conversion Price is calculated hereunder, then the calculation of such Conversion Price shall be adjusted appropriately to reflect such event.

(c) Holder's Right of Adjusted Conversion Price. In addition to and not in limitation of the other provisions of this Section 8(b), if the Company in any manner issues or sells or enters into any agreement to issue or sell, any Common Stock, Options or Convertible Securities (any such securities, "**Variable Price Securities**") after the Subscription Date that are issuable pursuant to such agreement or convertible into or exchangeable or exercisable for shares of Common Stock at a price which varies or may vary with the market price of the shares of Common Stock, including by way of one or more reset(s) to a fixed price, but exclusive of such formulations reflecting customary anti-dilution provisions (such as share splits, share combinations, share dividends and similar transactions) (each of the formulations for such variable price being herein referred to as, the "**Variable Price**"), the Company shall provide written notice thereof via electronic mail and overnight courier to each Holder on the date of such agreement and/or the issuance of such shares of Common Stock, Convertible Securities or Options, as applicable. From and after the date the Company enters into such agreement or issues any such Variable Price Securities, each Holder shall have the right, but not the obligation, in its sole discretion to substitute the Variable Price for the Conversion Price upon conversion of the Preferred Shares by designating in the Conversion Notice delivered upon any conversion of Preferred Shares that solely for purposes of such conversion such Holder is relying on the Variable Price rather than the Conversion Price then in effect. A Holder's election to rely on a Variable Price for a particular conversion of Preferred Shares shall not obligate such Holder to rely on a Variable Price for any future conversions of Preferred Shares.

(d) Stock Combination Event Adjustments. If at any time and from time to time on or after the Subscription Date there occurs any stock split, stock dividend, stock combination recapitalization or other similar transaction involving the Common Stock (each, a “**Stock Combination Event**”, and such date thereof, the “**Stock Combination Event Date**”) and the Event Market Price is less than the Conversion Price then in effect (after giving effect to the adjustment in Section 8(b) above), then on the sixteenth (16th) Trading Day immediately following such Stock Combination Event Date, the Conversion Price then in effect on such sixteenth (16th) Trading Day (after giving effect to the adjustment in Section 88(b) above) shall be reduced (but in no event increased) to the Event Market Price. For the avoidance of doubt, if the adjustment in the immediately preceding sentence would otherwise result in an increase in the Conversion Price hereunder, no adjustment shall be made.

(e) Other Events. In the event that the Company (or any Subsidiary) shall take any action to which the provisions hereof are not strictly applicable, or, if applicable, would not operate to protect any Holder from dilution or if any event occurs of the type contemplated by the provisions of this Section 8 but not expressly provided for by such provisions (including, without limitation, the granting of stock appreciation rights, phantom stock rights or other rights with equity features), then the Board shall in good faith determine and implement an appropriate adjustment in the Conversion Price so as to protect the rights of such Holder, provided that no such adjustment pursuant to this Section 8(b) will increase the Conversion Price as otherwise determined pursuant to this Section 8, provided further that if such Holder does not accept such adjustments as appropriately protecting its interests hereunder against such dilution, then the Board and such Holder shall agree, in good faith, upon an independent investment bank of nationally recognized standing to make such appropriate adjustments, whose determination shall be final and binding absent manifest error and whose fees and expenses shall be borne by the Company.

(f) Calculations. All calculations under this Section 8 shall be made by rounding to the nearest cent or the nearest 1/100th of a share, as applicable. The number of shares of Common Stock outstanding at any given time shall not include shares owned or held by or for the account of the Company, and the disposition of any such shares shall be considered an issue or sale of Common Stock.

(g) Voluntary Adjustment by Company. Subject to the rules and regulations of the Principal Market, the Company may at any time any Preferred Shares remain outstanding, with the prior written consent of the Required Holders, reduce the then current Conversion Price to any amount and for any period of time deemed appropriate by the Board.

(h) Adjustments. If on any of the ninetieth (90th) and one hundred and eightieth (180th), as applicable, calendar day after the Applicable Date (as defined in the Securities Purchase Agreement) (the “**Adjustment Date**”), the Conversion Price then in effect is greater than the Market Price then in effect (the “**Adjustment Price**”), on the Adjustment Date the Conversion Price shall automatically lower to the Adjustment Price.

(i) Exchange Right. Notwithstanding anything herein to the contrary, if a Holder participates in a Subsequent Placement, each such Holder may, at the option of such Holder as elected in writing to the Company, satisfy the purchase price of the securities to be sold to such Holder in such Subsequent Placement, in whole or in part, with Preferred Shares valued at 125% of the Conversion Amount of the Preferred Shares delivered by such Holder as payment therefor.

9. Redemption at the Company's Election.

(a) Company Optional Redemption. At any time, the Company shall have the right to redeem all, but not less than all, of the Preferred Shares then outstanding (the "**Company Optional Redemption Amount**") on the Company Optional Redemption Date (each as defined below) (a "**Company Optional Redemption**"). The Preferred Shares subject to redemption pursuant to this Section 9(a) shall be redeemed by the Company in cash at a price (the "**Company Optional Redemption Price**") equal to 120% of the greater of (i) the Conversion Amount being redeemed as of the Company Optional Redemption Date and (ii) the product of (1) the Conversion Rate with respect to the Conversion Amount being redeemed as of the Company Optional Redemption Date multiplied by (2) the greatest Closing Sale Price of the Common Stock on any Trading Day during the period commencing on the date immediately preceding such Company Optional Redemption Notice Date and ending on the Trading Day immediately prior to the date the Company makes the entire payment required to be made under this Section 9(a). The Company may exercise its right to require redemption under this Section 9(a) by delivering a written notice thereof by electronic mail and overnight courier to all, but not less than all, of the Holders (the "**Company Optional Redemption Notice**" and the date all of the Holders received such notice is referred to as the "**Company Optional Redemption Notice Date**"). The Company may deliver only one Company Optional Redemption Notice hereunder and such Company Optional Redemption Notice shall be irrevocable. The Company Optional Redemption Notice shall specify (x) the date on which the Company Optional Redemption shall occur (the "**Company Optional Redemption Date**") which date shall not be less than twenty (20) Trading Days nor more than forty (40) Trading Days following the Company Optional Redemption Notice Date, and (y) the aggregate Conversion Amount of the Preferred Shares which is being redeemed in such Company Optional Redemption from such Holder and all of the other Holders of the Preferred Shares pursuant to this Section 9(a) on the Company Optional Redemption Date. Notwithstanding anything herein to the contrary, at any time prior to the date the Company Optional Redemption Price is paid, in full, the Company Optional Redemption Amount may be converted, in whole or in part, by any Holder into shares of Common Stock pursuant to Section 4. All Conversion Amounts converted by a Holder after the Company Optional Redemption Notice Date shall reduce the Company Optional Redemption Amount of the Preferred Shares of such Holder required to be redeemed on the Company Optional Redemption Date. Redemptions made pursuant to this Section 9(a) shall be made in accordance with Section 12. In the event of the Company's redemption of any of the Preferred Shares under this Section 9, a Holder's damages would be uncertain and difficult to estimate because of the parties' inability to predict future interest rates and the uncertainty of the availability of a suitable substitute investment opportunity for such Holder. Accordingly, any redemption premium due under this Section 9 is intended by the parties to be, and shall be deemed, a reasonable estimate of such Holder's actual loss of its investment opportunity and not as a penalty. For the avoidance of doubt, the Company shall have no right to effect a Company Optional Redemption if any Triggering Event has occurred and continuing, but any Triggering Event shall have no effect upon any Holder's right to convert Preferred Shares in its discretion.

10. Noncircumvention. The Company hereby covenants and agrees that the Company will not, by amendment of its Certificate of Incorporation (as defined in the Securities Purchase Agreement), Bylaws (as defined in the Securities Purchase Agreement) or through any reorganization, transfer of assets, consolidation, merger, scheme of arrangement, 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 Certificate of Designations, and will at all times in good faith carry out all the provisions of this Certificate of Designations and take all action as may be required to protect the rights of the Holders hereunder. Without limiting the generality of the foregoing or any other provision of this Certificate of Designations or the other Transaction Documents, the Company (a) shall not increase the par value of any shares of Common Stock receivable upon the conversion of any Preferred Shares above the Conversion Price then in effect, (b) shall take all such actions as may be necessary or appropriate in order that the Company may validly and legally issue fully paid and non-assessable shares of Common Stock upon the conversion of Preferred Shares and (c) shall, so long as any Preferred Shares are outstanding, take all action necessary to reserve and keep available out of its authorized and unissued shares of Common Stock, solely for the purpose of effecting the conversion of the Preferred Shares, the maximum number of shares of Common Stock as shall from time to time be necessary to effect the conversion of the Preferred Shares then outstanding (without regard to any limitations on conversion contained herein). Notwithstanding anything herein to the contrary, if after the sixty (60) calendar day anniversary of the Initial Issuance Date, each Holder is not permitted to convert such Holder's Preferred Shares in full for any reason (other than pursuant to restrictions set forth in Section 4(d)(i) hereof), the Company shall use its best efforts to promptly remedy such failure, including, without limitation, obtaining such consents or approvals as necessary to effect such conversion into shares of Common Stock.

11. Authorized Shares.

(a) Reservation. So long as any Preferred Shares remain outstanding, the Company shall at all times reserve at least 300% of the number of shares of Common Stock as shall from time to time be necessary to effect the conversion, including without limitation, Alternate Conversions, of all of the Preferred Shares then outstanding at the Alternate Conversion Price then in effect (without regard to any limitations on conversions and assuming the Preferred Shares remain outstanding until the Maturity Date) (the “**Required Reserve Amount**”). The Required Reserve Amount (including, without limitation, each increase in the number of shares so reserved) shall be allocated pro rata among the Holders based on the number of the Preferred Shares held by each Holder on the Initial Issuance Date or increase in the number of reserved shares, as the case may be (the “**Authorized Share Allocation**”). In the event that a Holder shall sell or otherwise transfer any of such Holder’s Preferred Shares, each transferee shall be allocated a pro rata portion of such Holder’s Authorized Share Allocation. Any shares of Common Stock reserved and allocated to any Person which ceases to hold any Preferred Shares shall be allocated to the remaining Holders of Preferred Shares, pro rata based on the number of the Preferred Shares then held by the Holders.

(b) Insufficient Authorized Shares. If, notwithstanding Section 11(a) and not in limitation thereof, at any time while any of the Preferred Shares remain outstanding the Company does not have a sufficient number of authorized and unreserved shares of Common Stock to satisfy its obligation to reserve for issuance upon conversion of the Preferred Shares at least a number of shares of Common Stock equal to the Required Reserve Amount (an “**Authorized Share Failure**”), then the Company shall immediately take all action necessary to increase the Company’s authorized shares of Common Stock to an amount sufficient to allow the Company to reserve the Required Reserve Amount for the Preferred Shares then outstanding (or deemed outstanding pursuant to Section 11(a) above). Without limiting the generality of the foregoing sentence, as soon as practicable after the date of the occurrence of an Authorized Share Failure, but in no event later than sixty (60) days after the occurrence of such Authorized Share Failure, the Company shall hold a meeting of its stockholders for the approval of an increase in the number of authorized shares of Common Stock. In connection with such meeting, the Company shall provide each stockholder with a proxy statement and shall use its best efforts to solicit its stockholders’ approval of such increase in authorized shares of Common Stock and to cause its board of directors to recommend to the stockholders that they approve such proposal (or, if a majority of the voting power then in effect of the capital stock of the Company consents to such increase, in lieu of such proxy statement, deliver to the stockholders of the Company an information statement that has been filed with (and either approved by or not subject to comments from) the SEC with respect thereto). In the event that the Company is prohibited from issuing shares of Common Stock to a Holder upon any conversion due to the failure by the Company to have sufficient shares of Common Stock available out of the authorized but unissued shares of Common Stock (such unavailable number of shares of Common Stock, the “**Authorized Failure Shares**”), in lieu of delivering such Authorized Failure Shares to such Holder, the Company shall pay cash in exchange for the redemption of such portion of the Conversion Amount of the Preferred Shares convertible into such Authorized Failure Shares at a price equal to the sum of (i) the product of (x) such number of Authorized Failure Shares and (y) the greatest Closing Sale Price of the Common Stock on any Trading Day during the period commencing on the date such Holder delivers the applicable Conversion Notice with respect to such Authorized Failure Shares to the Company and ending on the date of such issuance and payment under this Section 11(a); and (ii) to the extent such Holder purchases (in an open market transaction or otherwise) shares of Common Stock to deliver in satisfaction of a sale by such Holder of Authorized Failure Shares, any brokerage commissions and other out-of-pocket expenses, if any, of such Holder incurred in connection therewith. Nothing contained in Section 11(a) or this Section 11(b) shall limit any obligations of the Company under any provision of the Securities Purchase Agreement.

12. Redemptions.

(a) General. If a Holder has submitted a Triggering Event Redemption Notice in accordance with Section 5(b), the Company shall deliver the applicable Triggering Event Redemption Price to such Holder in cash within five (5) Business Days after the Company's receipt of such Holder's Triggering Event Redemption Notice. If a Holder has submitted a Change of Control Redemption Notice in accordance with Section 6(b), the Company shall deliver the applicable Change of Control Redemption Price to such Holder in cash concurrently with the consummation of such Change of Control if such notice is received prior to the consummation of such Change of Control and within five (5) Business Days after the Company's receipt of such notice otherwise. If a Holder has submitted a Maturity Redemption Notice in accordance with Section 13 below, the Company shall deliver the applicable Maturity Redemption Price to such Holder in cash on the applicable Maturity Redemption Date. The Company shall deliver the applicable Company Optional Redemption Price to each Holder in cash on the applicable Company Optional Redemption Date. Notwithstanding anything herein to the contrary, in connection with any redemption hereunder at a time a Holder is entitled to receive a cash payment under any of the other Transaction Documents, at the option of such Holder delivered in writing to the Company, the applicable Redemption Price hereunder shall be increased by the amount of such cash payment owed to such Holder under such other Transaction Document and, upon payment in full or conversion in accordance herewith, shall satisfy the Company's payment obligation under such other Transaction Document. In the event of a redemption of less than all of the Preferred Shares, the Company shall promptly cause to be issued and delivered to such Holder a new Preferred Share Certificate (in accordance with Section 20) (or evidence of the creation of a new Book-Entry) representing the number of Preferred Shares which have not been redeemed. In the event that the Company does not pay the applicable Redemption Price to a Holder within the time period required for any reason (including, without limitation, to the extent such payment is prohibited pursuant to the DGCL), at any time thereafter and until the Company pays such unpaid Redemption Price in full, such Holder shall have the option, in lieu of redemption, to require the Company to promptly return to such Holder all or any of the Preferred Shares that were submitted for redemption and for which the applicable Redemption Price (together with any Late Charges thereon) has not been paid. Upon the Company's receipt of such notice, (x) the applicable Redemption Notice shall be null and void with respect to such Preferred Shares, (y) the Company shall immediately return the applicable Preferred Share Certificate, or issue a new Preferred Share Certificate (in accordance with Section 20(d)), to such Holder (unless the Preferred Shares are held in Book-Entry form, in which case the Company shall deliver evidence to such Holder that a Book-Entry for such Preferred Shares then exists), and in each case the Additional Amount of such Preferred Shares shall be increased by an amount equal to the difference between (1) the applicable Redemption Price (as the case may be, and as adjusted pursuant to this Section 12, if applicable) minus (2) the Stated Value portion of the Conversion Amount submitted for redemption and (z) the Conversion Price of such Preferred Shares shall be automatically adjusted with respect to each conversion effected thereafter by such Holder to the lowest of (A) the Conversion Price as in effect on the date on which the applicable Redemption Notice is voided, (B) the greater of (x) the Floor Price and (y) 75% of the lowest Closing Bid Price of the Common Stock during the period beginning on and including the date on which the applicable Redemption Notice is delivered to the Company and ending on and including the date on which the applicable Redemption Notice is voided and (C) the greater of (x) the Floor Price and (y) 75% of the quotient of (I) the sum of the five (5) lowest VWAPs of the Common Stock during the twenty (20) consecutive Trading Day period ending and including the Trading Day immediately preceding the applicable Conversion Date divided by (II) five (5) (it being understood and agreed that all such determinations shall be appropriately adjusted for any stock dividend, stock split, stock combination or other similar transaction during such period). A Holder's delivery of a notice voiding a Redemption Notice and exercise of its rights following such notice shall not affect the Company's obligations to make any payments of Late Charges which have accrued prior to the date of such notice with respect to the Preferred Shares subject to such notice.

(b) Redemption by Multiple Holders. Upon the Company's receipt of a Redemption Notice from any Holder for redemption or repayment as a result of an event or occurrence substantially similar to the events or occurrences described in Section 5(b) or Section 6(b), the Company shall immediately, but no later than one (1) Business Day of its receipt thereof, forward to each other Holder by electronic mail a copy of such notice. If the Company receives one or more Redemption Notices, during the seven (7) Business Day period beginning on and including the date which is two (2) Business Days prior to the Company's receipt of the initial Redemption Notice and ending on and including the date which is two (2) Business Days after the Company's receipt of the initial Redemption Notice and the Company is unable to redeem all of the Conversion Amount of such Preferred Shares designated in such initial Redemption Notice and such other Redemption Notices received during such seven (7) Business Day period, then the Company shall redeem a pro rata amount from each Holder based on the Stated Value of the Preferred Shares submitted for redemption pursuant to such Redemption Notices received by the Company during such seven (7) Business Day period.

13. Holder Optional Redemption after Maturity Date. At any time from and after the tenth (10th) Business Day prior to the Maturity Date, any Holder may require the Company to redeem (a "**Maturity Redemption**") all or any number of Preferred Shares held by such Holder at a purchase price equal to 100% of the Conversion Amount of such Preferred Shares (the "**Maturity Redemption Price**") by delivery of written notice thereof (the "**Maturity Redemption Notice**") to the Company. The Maturity Redemption Notice shall state the date the Company is required to pay to such Holder such Maturity Redemption Price (the "**Maturity Redemption Date**"), which date shall be no earlier than ten (10) Business Days following the date of delivery of such Maturity Redemption Notice. Redemptions required by this Section 13 shall be made in accordance with the provisions of Section 12.

14. Voting Rights. Holders of Preferred Shares shall have no voting rights, except as required by law (including without limitation, the DGCL) and as expressly provided in this Certificate of Designations. To the extent that under the DGCL the vote of the holders of the Preferred Shares, voting separately as a class or series, as applicable, is required to authorize a given action of the Company, the affirmative vote or consent of the Required Holders of the shares of the Preferred Shares, voting together in the aggregate and not in separate series unless required under the DGCL, represented at a duly held meeting at which a quorum is presented or by written consent of the Required Holders (except as otherwise may be required under the DGCL), voting together in the aggregate and not in separate series unless required under the DGCL, shall constitute the approval of such action by both the class or the series, as applicable. Subject to Section 4(d), to the extent that under the DGCL holders of the Preferred Shares are entitled to vote on a matter with holders of shares of Common Stock, voting together as one class, each Preferred Share shall entitle the holder thereof to cast that number of votes per share as is equal to the number of shares of Common Stock into which it is then convertible (subject to the ownership limitations specified in Section 4(d) hereof) using the record date for determining the stockholders of the Company eligible to vote on such matters as the date as of which the Conversion Price is calculated. Holders of the Preferred Shares shall be entitled to written notice of all stockholder meetings or written consents (and copies of proxy materials and other information sent to stockholders) with respect to which they would be entitled to vote, which notice would be provided pursuant to the Company's bylaws and the DGCL.

15. Covenants. For so long as any Preferred Shares are outstanding, without the prior written consent of the Required Holders:

(a) Incurrence of Indebtedness. The Company shall not, and the Company shall cause each of its Subsidiaries to not, directly or indirectly, incur or guarantee, assume or suffer to exist any Indebtedness (other than Permitted Indebtedness).

(b) Existence of Liens. The Company shall not, and the Company shall cause each of its Subsidiaries to not, directly or indirectly, allow or suffer to exist any mortgage, lien, pledge, charge, security interest or other encumbrance upon or in any property or assets (including accounts and contract rights) owned by the Company or any of its Subsidiaries (collectively, "**Liens**") other than Permitted Liens.

(c) Restricted Payments and Investments. The Company shall not, and the Company shall cause each of its Subsidiaries to not, directly or indirectly, redeem, defease, repurchase, repay or make any payments in respect of, by the payment of cash or cash equivalents (in whole or in part, whether by way of open market purchases, tender offers, private transactions or otherwise), all or any portion of any Indebtedness (other pursuant to this Certificate of Designations) whether by way of payment in respect of principal of (or premium, if any) or interest on, such Indebtedness or make any Investment, as applicable, if at the time such payment with respect to such Indebtedness and/or Investment, as applicable, is due or is otherwise made or, after giving effect to such payment, (i) an event constituting a Triggering Event has occurred and is continuing or (ii) an event that with the passage of time and without being cured would constitute a Triggering Event has occurred and is continuing.

(d) Restriction on Redemption and Cash Dividends. The Company shall not, and the Company shall cause each of its Subsidiaries to not, directly or indirectly, redeem, repurchase or declare or pay any cash dividend or distribution on any of its capital stock (other than as required by this Certificate of Designations).

(e) Restriction on Transfer of Assets. The Company shall not, and the Company shall cause each of its Subsidiaries to not, directly or indirectly, sell, lease, license (other than a license between the Company and AOP Health in respect of istaroxime and SERCA2a), assign, transfer, spin-off, split-off, close, convey or otherwise dispose of any assets or rights of the Company or any Subsidiary owned or hereafter acquired whether in a single transaction or a series of related transactions, other than (i) sales, leases, licenses, assignments, transfers, conveyances and other dispositions of such assets or rights by the Company and its Subsidiaries in the ordinary course of business consistent with its past practice and (ii) sales of inventory and product in the ordinary course of business.

(f) Maturity of Indebtedness. The Company shall not, and the Company shall cause each of its Subsidiaries to not, directly or indirectly, permit any Indebtedness of the Company or any of its Subsidiaries to mature or accelerate prior to the Maturity Date.

(g) Change in Nature of Business. The Company shall not, and the Company shall cause each of its Subsidiaries to not, directly or indirectly, engage in any material line of business substantially different from those lines of business conducted by or publicly contemplated to be conducted by the Company and each of its Subsidiaries on the Subscription Date or any business substantially related or incidental thereto, other than to utilize the assets to be purchased by the Company pursuant to that certain Asset Purchase Agreement, dated as of the date hereof, by and between the Company and Varian Biopharmaceuticals, Inc. The Company shall not, and the Company shall cause each of its Subsidiaries to not, directly or indirectly, modify its or their corporate structure or purpose.

(h) Preservation of Existence, Etc. The Company shall maintain and preserve, and cause each of its Subsidiaries to maintain and preserve, its existence, rights and privileges, and become or remain, and cause each of its Subsidiaries to become or remain, duly qualified and in good standing in each jurisdiction in which the character of the properties owned or leased by it or in which the transaction of its business makes such qualification necessary.

(i) Maintenance of Properties, Etc. The Company shall maintain and preserve, and cause each of its Subsidiaries to maintain and preserve, all of its properties which are necessary or useful in the proper conduct of its business in good working order and condition, ordinary wear and tear excepted, and comply, and cause each of its Subsidiaries to comply, at all times with the provisions of all leases to which it is a party as lessee or under which it occupies property, so as to prevent any loss or forfeiture thereof or thereunder.

(j) Maintenance of Intellectual Property. The Company will, and will cause each of its Subsidiaries to, take all action necessary or advisable to maintain all of the Intellectual Property Rights of the Company and/or any of its Subsidiaries that are necessary or material to the conduct of its business in full force and effect.

(k) Maintenance of Insurance. The Company shall maintain, and cause each of its Subsidiaries to maintain, insurance with responsible and reputable insurance companies or associations (including, without limitation, comprehensive general liability, hazard, rent and business interruption insurance) with respect to its properties (including all real properties leased or owned by it) and business, in such amounts and covering such risks as is required by any governmental authority having jurisdiction with respect thereto or as is carried generally in accordance with sound business practice by companies in similar businesses similarly situated.

(l) Transactions with Affiliates. The Company shall not, nor shall it permit any of its Subsidiaries to, enter into, renew, extend or be a party to, any transaction or series of related transactions (including, without limitation, the purchase, sale, lease, transfer or exchange of property or assets of any kind or the rendering of services of any kind) with any affiliate, except transactions in the ordinary course of business in a manner and to an extent consistent with past practice and necessary or desirable for the prudent operation of its business, for fair consideration and on terms no less favorable to it or its Subsidiaries than would be obtainable in a comparable arm's length transaction with a Person that is not an affiliate thereof.

(m) Restricted Issuances. The Company shall not, directly or indirectly, without the prior written consent of the Required Holders, (i) issue any Preferred Shares (other than as contemplated by the Securities Purchase Agreement and this Certificate of Designations) or (ii) issue any other securities that would cause a breach or default under this Certificate of Designations or the Notes.

(n) Stay, Extension and Usury Laws. To the extent that it may lawfully do so, the Company (A) agrees that it will not at any time insist upon, plead, or in any manner whatsoever claim or take the benefit or advantage of, any stay, extension or usury law (wherever or whenever enacted or in force) that may affect the covenants or the performance of this Certificate of Designations; and (B) expressly waives all benefits or advantages of any such law and agrees that it will not, by resort to any such law, hinder, delay or impede the execution of any power granted to the Holders by this Certificate of Designations, but will suffer and permit the execution of every such power as though no such law has been enacted.

(o) Taxes. The Company and its Subsidiaries shall pay when due all taxes, fees or other charges of any nature whatsoever (together with any related interest or penalties) now or hereafter imposed or assessed against the Company and its Subsidiaries or their respective assets or upon their ownership, possession, use, operation or disposition thereof or upon their rents, receipts or earnings arising therefrom (except where the failure to pay would not, individually or in the aggregate, have a material effect on the Company or any of its Subsidiaries). The Company and its Subsidiaries shall file on or before the due date therefor all personal property tax returns (except where the failure to file would not, individually or in the aggregate, have a material effect on the Company or any of its Subsidiaries). Notwithstanding the foregoing, the Company and its Subsidiaries may contest, in good faith and by appropriate proceedings, taxes for which they maintain adequate reserves therefor in accordance with GAAP.

(p) Independent Investigation. At the request of any Holder either (x) at any time when a Triggering Event has occurred and is continuing, (y) upon the occurrence of an event that with the passage of time or giving of notice would constitute a Triggering Event or (z) at any time such Holder reasonably believes a Triggering Event may have occurred or be continuing, the Company shall hire an independent, reputable investment bank selected by the Company and approved by such Holder to investigate as to whether any breach of the Certificate of Designations has occurred (the “**Independent Investigator**”). If the Independent Investigator determines that such breach of the Certificate of Designations has occurred, the Independent Investigator shall notify the Company of such breach and the Company shall deliver written notice to each Holder of such breach. In connection with such investigation, the Independent Investigator may, during normal business hours, inspect all contracts, books, records, personnel, offices and other facilities and properties of the Company and its Subsidiaries and, to the extent available to the Company after the Company uses reasonable efforts to obtain them, the records of its legal advisors and accountants (including the accountants’ work papers) and any books of account, records, reports and other papers not contractually required of the Company to be confidential or secret, or subject to attorney-client or other evidentiary privilege, and the Independent Investigator may make such copies and inspections thereof as the Independent Investigator may reasonably request. The Company shall furnish the Independent Investigator with such financial and operating data and other information with respect to the business and properties of the Company as the Independent Investigator may reasonably request. The Company shall permit the Independent Investigator to discuss the affairs, finances and accounts of the Company with, and to make proposals and furnish advice with respect thereto to, the Company’s officers, directors, key employees and independent public accountants or any of them (and by this provision the Company authorizes said accountants to discuss with such Independent Investigator the finances and affairs of the Company and any Subsidiaries), all at such reasonable times, upon reasonable notice, and as often as may be reasonably requested.

16. Liquidation, Dissolution, Winding-Up. In the event of a Liquidation Event, the Holders shall be entitled to receive in cash out of the assets of the Company, whether from capital or from earnings available for distribution to its stockholders (the “**Liquidation Funds**”), before any amount shall be paid to the holders of any of shares of Junior Stock, but pari passu with any Parity Stock then outstanding, an amount per Preferred Share equal to the greater of (A) 125% of the Conversion Amount of such Preferred Share on the date of such payment and (B) the amount per share such Holder would receive if such Holder converted such Preferred Share into Common Stock immediately prior to the date of such payment, provided that if the Liquidation Funds are insufficient to pay the full amount due to the Holders and holders of shares of Parity Stock, then each Holder and each holder of Parity Stock shall receive a percentage of the Liquidation Funds equal to the full amount of Liquidation Funds payable to such Holder and such holder of Parity Stock as a liquidation preference, in accordance with their respective certificate of designations (or equivalent), as a percentage of the full amount of Liquidation Funds payable to all holders of Preferred Shares and all holders of shares of Parity Stock. To the extent necessary, the Company shall cause such actions to be taken by each of its Subsidiaries so as to enable, to the maximum extent permitted by law, the proceeds of a Liquidation Event to be distributed to the Holders in accordance with this Section 16. All the preferential amounts to be paid to the Holders under this Section 16 shall be paid or set apart for payment before the payment or setting apart for payment of any amount for, or the distribution of any Liquidation Funds of the Company to the holders of shares of Junior Stock in connection with a Liquidation Event as to which this Section 16 applies.

17. Distribution of Assets. In addition to any adjustments pursuant to Section 7(a) and Section 8, if the Company shall declare or make any dividend or other distributions of its assets (or rights to acquire its assets) to any or all 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) (the “**Distributions**”), then each Holder, as holders of Preferred Shares, will be entitled to such Distributions as if such Holder had held the number of shares of Common Stock acquirable upon complete conversion of the Preferred Shares (without taking into account any limitations or restrictions on the convertibility of the Preferred Shares and assuming for such purpose that the Preferred Share was converted at the Alternate Conversion Price as of the applicable record date) immediately prior to the date on which a record is taken for such Distribution or, if no such record is taken, the date as of which the record holders of Common Stock are to be determined for such Distributions (provided, however, that to the extent that such Holder’s right to participate in any such Distribution would result in such Holder and the other Attribution Parties exceeding the Maximum Percentage, then such Holder shall not be entitled to participate in such Distribution to such extent of the Maximum Percentage (and shall not be entitled to beneficial ownership of such shares of Common Stock as a result of such Distribution (and beneficial ownership) to such extent of any such excess) and the portion of such Distribution shall be held in abeyance for the benefit of such Holder until such time or times as its right thereto would not result in such Holder and the other Attribution Parties exceeding the Maximum Percentage, at which time or times, if any, such Holder shall be granted such Distribution (and any Distributions declared or made on such initial Distribution or on any subsequent Distribution held similarly in abeyance) to the same extent as if there had been no such limitation).

18. Vote to Change the Terms of or Issue Preferred Shares. In addition to any other rights provided by law, except where the vote or written consent of the holders of a greater number of shares is required by law or by another provision of the Certificate of Incorporation, without first obtaining the affirmative vote at a meeting duly called for such purpose or the written consent without a meeting of the Required Holders, voting together as a single class, the Company shall not: (a) amend or repeal any provision of, or add any provision to, its Certificate of Incorporation or bylaws, or file any certificate of designations or articles of amendment of any series of shares of preferred stock, if such action would adversely alter or change in any respect the preferences, rights, privileges or powers, or restrictions provided for the benefit of the Preferred Shares hereunder, regardless of whether any such action shall be by means of amendment to the Certificate of Incorporation or by merger, consolidation or otherwise; (b) increase or decrease (other than by conversion) the authorized number of Preferred Shares; (c) without limiting any provision of Section 2, create or authorize (by reclassification or otherwise) any new class or series of Senior Preferred Stock or Parity Stock; (d) purchase, repurchase or redeem any shares of Junior Stock (other than pursuant to the terms of the Company’s equity incentive plans and options and other equity awards granted under such plans (that have in good faith been approved by the Board)); (e) without limiting any provision of Section 2, pay dividends or make any other distribution on any shares of any Junior Stock; (f) issue any Preferred Shares other than as contemplated hereby or pursuant to the Securities Purchase Agreement; or (g) without limiting any provision of Section 9, whether or not prohibited by the terms of the Preferred Shares, circumvent a right of the Preferred Shares hereunder.

19. Transfer of Preferred Shares. A Holder may transfer some or all of its Preferred Shares without the consent of the Company.

20. Reissuance of Preferred Share Certificates and Book Entries.

(a) Transfer. If any Preferred Shares are to be transferred, the applicable Holder shall surrender the applicable Preferred Share Certificate to the Company (or, if the Preferred Shares are held in Book-Entry form, a written instruction letter to the Company), whereupon the Company will forthwith issue and deliver upon the order of such Holder a new Preferred Share Certificate (in accordance with Section 20(d)) (or evidence of the transfer of such Book-Entry), registered as such Holder may request, representing the outstanding number of Preferred Shares being transferred by such Holder and, if less than the entire outstanding number of Preferred Shares is being transferred, a new Preferred Share Certificate (in accordance with Section 20(d)) to such Holder representing the outstanding number of Preferred Shares not being transferred (or evidence of such remaining Preferred Shares in a Book-Entry for such Holder). Such Holder and any assignee, by acceptance of the Preferred Share Certificate or evidence of Book-Entry issuance, as applicable, acknowledge and agree that, by reason of the provisions of Section 4(c)(i) following conversion or redemption of any of the Preferred Shares, the outstanding number of Preferred Shares represented by the Preferred Shares may be less than the number of Preferred Shares stated on the face of the Preferred Shares.

(b) Lost, Stolen or Mutilated Preferred Share Certificate. Upon receipt by the Company of evidence reasonably satisfactory to the Company of the loss, theft, destruction or mutilation of a Preferred Share Certificate (as to which a written certification and the indemnification contemplated below shall suffice as such evidence), and, in the case of loss, theft or destruction, of any indemnification undertaking by the applicable Holder to the Company in customary and reasonable form and, in the case of mutilation, upon surrender and cancellation of such Preferred Share Certificate, the Company shall execute and deliver to such Holder a new Preferred Share Certificate (in accordance with Section 20(d)) representing the applicable outstanding number of Preferred Shares.

(c) Preferred Share Certificate and Book-Entries Exchangeable for Different Denominations and Forms. Each Preferred Share Certificate is exchangeable, upon the surrender hereof by the applicable Holder at the principal office of the Company, for a new Preferred Share Certificate or Preferred Share Certificate(s) or new Book-Entry (in accordance with Section 20(d)) representing, in the aggregate, the outstanding number of the Preferred Shares in the original Preferred Share Certificate, and each such new Preferred Share Certificate and/or new Book-Entry, as applicable, will represent such portion of such outstanding number of Preferred Shares from the original Preferred Share Certificate as is designated in writing by such Holder at the time of such surrender. Each Book-Entry may be exchanged into one or more new Preferred Share Certificates or split by the applicable Holder by delivery of a written notice to the Company into two or more new Book-Entries (in accordance with Section 20(d)) representing, in the aggregate, the outstanding number of the Preferred Shares in the original Book-Entry, and each such new Book-Entry and/or new Preferred Share Certificate, as applicable, will represent such portion of such outstanding number of Preferred Shares from the original Book-Entry as is designated in writing by such Holder at the time of such surrender.

(d) Issuance of New Preferred Share Certificate or Book-Entry. Whenever the Company is required to issue a new Preferred Share Certificate or a new Book-Entry pursuant to the terms of this Certificate of Designations, such new Preferred Share Certificate or new Book-Entry (i) shall represent, as indicated on the face of such Preferred Share Certificate or in such Book-Entry, as applicable, the number of Preferred Shares remaining outstanding (or in the case of a new Preferred Share Certificate or new Book-Entry being issued pursuant to Section 20(a) or Section 20(c), the number of Preferred Shares designated by such Holder) which, when added to the number of Preferred Shares represented by the other new Preferred Share Certificates or other new Book-Entry, as applicable, issued in connection with such issuance, does not exceed the number of Preferred Shares remaining outstanding under the original Preferred Share Certificate or original Book-Entry, as applicable, immediately prior to such issuance of new Preferred Share Certificate or new Book-Entry, as applicable, and (ii) shall have an issuance date, as indicated on the face of such new Preferred Share Certificate or in such new Book-Entry, as applicable, which is the same as the issuance date of the original Preferred Share Certificate or in such original Book-Entry, as applicable.

21. Remedies, Characterizations, Other Obligations, Breaches and Injunctive Relief. The remedies provided in this Certificate of Designations shall be cumulative and in addition to all other remedies available under this Certificate of Designations and any of the other Transaction Documents, at law or in equity (including a decree of specific performance and/or other injunctive relief), and nothing herein shall limit any Holder's right to pursue actual and consequential damages for any failure by the Company to comply with the terms of this Certificate of Designations. No failure on the part of a Holder to exercise, and no delay in exercising, any right, power or remedy hereunder shall operate as a waiver thereof; nor shall any single or partial exercise by such Holder of any right, power or remedy preclude any other or further exercise thereof or the exercise of any other right, power or remedy. In addition, the exercise of any right or remedy of a Holder at law or equity or under this Certificate of Designations or any of the documents shall not be deemed to be an election of such Holder's rights or remedies under such documents or at law or equity. The Company covenants to each Holder that there shall be no characterization concerning this instrument other than as expressly provided herein. Amounts set forth or provided for herein with respect to payments, conversion and the like (and the computation thereof) shall be the amounts to be received by a Holder and shall not, except as expressly provided herein, be subject to any other obligation of the Company (or the performance thereof). No failure on the part of a Holder to exercise, and no delay in exercising, any right, power or remedy hereunder shall operate as a waiver thereof; nor shall any single or partial exercise by such Holder of any right, power or remedy preclude any other or further exercise thereof or the exercise of any other right, power or remedy. In addition, the exercise of any right or remedy of any Holder at law or equity or under Preferred Shares or any of the documents shall not be deemed to be an election of such Holder's rights or remedies under such documents or at law or equity. The Company acknowledges that a breach by it of its obligations hereunder will cause irreparable harm to the Holders and that the remedy at law for any such breach may be inadequate. The Company therefore agrees that, in the event of any such breach or threatened breach, each Holder shall be entitled, in addition to all other available remedies, to specific performance and/or temporary, preliminary and permanent injunctive or other equitable relief from any court of competent jurisdiction in any such case without the necessity of proving actual damages and without posting a bond or other security. The Company shall provide all information and documentation to a Holder that is requested by such Holder to enable such Holder to confirm the Company's compliance with the terms and conditions of this Certificate of Designations.

22. Payment of Collection, Enforcement and Other Costs. If (a) any Preferred Shares are placed in the hands of an attorney for collection or enforcement or is collected or enforced through any legal proceeding or a Holder otherwise takes action to collect amounts due under this Certificate of Designations with respect to the Preferred Shares or to enforce the provisions of this Certificate of Designations or (b) there occurs any bankruptcy, reorganization, receivership of the Company or other proceedings affecting Company creditors' rights and involving a claim under this Certificate of Designations, then the Company shall pay the costs incurred by such Holder for such collection, enforcement or action or in connection with such bankruptcy, reorganization, receivership or other proceeding, including, without limitation, attorneys' fees and disbursements. The Company expressly acknowledges and agrees that no amounts due under this Certificate of Designations with respect to any Preferred Shares shall be affected, or limited, by the fact that the purchase price paid for each Preferred Share was less than the original Stated Value thereof.

23. Construction; Headings. This Certificate of Designations shall be deemed to be jointly drafted by the Company and the Holders and shall not be construed against any such Person as the drafter hereof. The headings of this Certificate of Designations are for convenience of reference and shall not form part of, or affect the interpretation of, this Certificate of Designations. Unless the context clearly indicates otherwise, each pronoun herein shall be deemed to include the masculine, feminine, neuter, singular and plural forms thereof. The terms "including," "includes," "include" and words of like import shall be construed broadly as if followed by the words "without limitation." The terms "herein," "hereunder," "hereof" and words of like import refer to this entire Certificate of Designations instead of just the provision in which they are found. Unless expressly indicated otherwise, all section references are to sections of this Certificate of Designations. Terms used in this Certificate of Designations and not otherwise defined herein, but defined in the other Transaction Documents, shall have the meanings ascribed to such terms on the Initial Issuance Date in such other Transaction Documents unless otherwise consented to in writing by the Required Holders.

24. Failure or Indulgence Not Waiver. No failure or delay on the part of a Holder in the exercise of any power, right or privilege hereunder shall operate as a waiver thereof, nor shall any single or partial exercise of any such power, right or privilege preclude other or further exercise thereof or of any other right, power or privilege. No waiver shall be effective unless it is in writing and signed by an authorized representative of the waiving party. This Certificate of Designations shall be deemed to be jointly drafted by the Company and all Holders and shall not be construed against any Person as the drafter hereof. Notwithstanding the foregoing, nothing contained in this Section 24 shall permit any waiver of any provision of Section 4(d).

25. Dispute Resolution.

(a) Submission to Dispute Resolution.

(i) In the case of a dispute relating to a Closing Bid Price, a Closing Sale Price, a Conversion Price, Triggering Event Conversion Price, a VWAP or a fair market value or the arithmetic calculation of a Conversion Rate, or the applicable Redemption Price (as the case may be) (including, without limitation, a dispute relating to the determination of any of the foregoing), the Company or the applicable Holder (as the case may be) shall submit the dispute to the other party via electronic mail (A) if by the Company, within two (2) Business Days after the occurrence of the circumstances giving rise to such dispute or (B) if by such Holder at any time after such Holder learned of the circumstances giving rise to such dispute. If such Holder and the Company are unable to promptly resolve such dispute relating to such Closing Bid Price, such Closing Sale Price, such Conversion Price, such Triggering Event Conversion Price, such VWAP or such fair market value, or the arithmetic calculation of such Conversion Rate or such applicable Redemption Price (as the case may be), at any time after the second (2nd) Business Day following such initial notice by the Company or such Holder (as the case may be) of such dispute to the Company or such Holder (as the case may be), then such Holder may, at its sole option, select an independent, reputable investment bank to resolve such dispute.

(ii) Such Holder and the Company shall each deliver to such investment bank (A) a copy of the initial dispute submission so delivered in accordance with the first sentence of this Section 25 and (B) written documentation supporting its position with respect to such dispute, in each case, no later than 5:00 p.m. (New York time) by the fifth (5th) Business Day immediately following the date on which such Holder selected such investment bank (the “**Dispute Submission Deadline**”) (the documents referred to in the immediately preceding clauses (A) and (B) are collectively referred to herein as the “**Required Dispute Documentation**”) (it being understood and agreed that if either such Holder or the Company fails to so deliver all of the Required Dispute Documentation by the Dispute Submission Deadline, then the party who fails to so submit all of the Required Dispute Documentation shall no longer be entitled to (and hereby waives its right to) deliver or submit any written documentation or other support to such investment bank with respect to such dispute and such investment bank shall resolve such dispute based solely on the Required Dispute Documentation that was delivered to such investment bank prior to the Dispute Submission Deadline). Unless otherwise agreed to in writing by both the Company and such Holder or otherwise requested by such investment bank, neither the Company nor such Holder shall be entitled to deliver or submit any written documentation or other support to such investment bank in connection with such dispute (other than the Required Dispute Documentation).

(iii) The Company and such Holder shall cause such investment bank to determine the resolution of such dispute and notify the Company and such Holder of such resolution no later than ten (10) Business Days immediately following the Dispute Submission Deadline. The fees and expenses of such investment bank shall be borne solely by the Company, and such investment bank’s resolution of such dispute shall be final and binding upon all parties absent manifest error.

(b) Miscellaneous. The Company expressly acknowledges and agrees that (i) this Section 25 constitutes an agreement to arbitrate between the Company and each Holder (and constitutes an arbitration agreement) under § 7501, et seq. of the New York Civil Practice Law and Rules (“**CPLR**”) and that any Holder is authorized to apply for an order to compel arbitration pursuant to CPLR § 7503(a) in order to compel compliance with this Section 25, (ii) a dispute relating to a Conversion Price includes, without limitation, disputes as to (A) whether an issuance or sale or deemed issuance or sale of Common Stock occurred under Section 8(a), (B) the consideration per share at which an issuance or deemed issuance of Common Stock occurred, (C) whether any issuance or sale or deemed issuance or sale of Common Stock was an issuance or sale or deemed issuance or sale of Excluded Securities, (D) whether an agreement, instrument, security or the like constitutes and Option or Convertible Security and (E) whether a Dilutive Issuance occurred, (iii) the terms of this Certificate of Designations and each other applicable Transaction Document shall serve as the basis for the selected investment bank’s resolution of the applicable dispute, such investment bank shall be entitled (and is hereby expressly authorized) to make all findings, determinations and the like that such investment bank determines are required to be made by such investment bank in connection with its resolution of such dispute and in resolving such dispute such investment bank shall apply such findings, determinations and the like to the terms of this Certificate of Designations and any other applicable Transaction Documents, (iv) the applicable Holder (and only such Holder with respect to disputes solely relating to such Holder), in its sole discretion, shall have the right to submit any dispute described in this Section 25 to any state or federal court sitting in The City of New York, Borough of Manhattan in lieu of utilizing the procedures set forth in this Section 25 and (v) nothing in this Section 25 shall limit such Holder from obtaining any injunctive relief or other equitable remedies (including, without limitation, with respect to any matters described in this Section 25).

26. Notices; Currency; Payments.

(a) Notices. The Company shall provide each Holder of Preferred Shares with prompt written notice of all actions taken pursuant to the terms of this Certificate of Designations, including in reasonable detail a description of such action and the reason therefor. Whenever notice is required to be given under this Certificate of Designations, unless otherwise provided herein, such notice must be in writing and shall be given in accordance with Section 9(f) of the Securities Purchase Agreement. The Company shall provide each Holder with prompt written notice of all actions taken pursuant to this Certificate of Designations, including in reasonable detail a description of such action and the reason therefor. Without limiting the generality of the foregoing, the Company shall give written notice to each Holder (i) immediately upon any adjustment of the Conversion Price, setting forth in reasonable detail, and certifying, the calculation of such adjustment and (ii) at least fifteen (15) days prior to the date on which the Company closes its books or takes a record (A) with respect to any dividend or distribution upon the Common Stock, (B) with respect to any grant, issuances, or sales of any Options, Convertible Securities or rights to purchase stock, warrants, securities or other property to holders of shares of Common Stock or (C) for determining rights to vote with respect to any Fundamental Transaction, dissolution or liquidation, provided in each case that such information shall be made known to the public prior to or in conjunction with such notice being provided to such Holder.

(b) Currency. All dollar amounts referred to in this Certificate of Designations are in United States Dollars (“U.S. Dollars”), and all amounts owing under this Certificate of Designations shall be paid in U.S. Dollars. All amounts denominated in other currencies (if any) shall be converted into the U.S. Dollar equivalent amount in accordance with the Exchange Rate on the date of calculation. “**Exchange Rate**” means, in relation to any amount of currency to be converted into U.S. Dollars pursuant to this Certificate of Designations, the U.S. Dollar exchange rate as published in the Wall Street Journal on the relevant date of calculation (it being understood and agreed that where an amount is calculated with reference to, or over, a period of time, the date of calculation shall be the final date of such period of time).

(c) Payments. Whenever any payment of cash is to be made by the Company to any Person pursuant to this Certificate of Designations, unless otherwise expressly set forth herein, such payment shall be made in lawful money of the United States of America by wire transfer of immediately available funds pursuant to wire transfer instructions that Holder shall provide to the Company in writing from time to time. Whenever any amount expressed to be due by the terms of this Certificate of Designations is due on any day which is not a Business Day, the same shall instead be due on the next succeeding day which is a Business Day. Any amount due under the Transaction Documents which is not paid when due shall result in a late charge being incurred and payable by the Company in an amount equal to interest on such amount at the rate of eighteen percent (18%) per annum from the date such amount was due until the same is paid in full (“**Late Charge**”).

27. Waiver of Notice. To the extent permitted by law, the Company hereby irrevocably waives demand, notice, presentment, protest and all other demands and notices in connection with the delivery, acceptance, performance, default or enforcement of this Certificate of Designations and the Securities Purchase Agreement.

28. Governing Law. This Certificate of Designations shall be construed and enforced in accordance with, and all questions concerning the construction, validity, interpretation and performance of this Certificate of Designations shall be governed by, the internal laws of the State of Delaware, without giving effect to any choice of law or conflict of law provision or rule (whether of the State of Delaware or any other jurisdictions) that would cause the application of the laws of any jurisdictions other than the State of Delaware. Except as otherwise required by Section 25 above, the Company 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 brought in an inconvenient forum or that the venue of such suit, action or proceeding is improper. Nothing contained herein shall be deemed to limit in any way any right to serve process in any manner permitted by law. Nothing contained herein shall be deemed to limit in any way any right to serve process in any manner permitted by law. Nothing contained herein (i) shall be deemed or operate to preclude any Holder from bringing suit or taking other legal action against the Company in any other jurisdiction to collect on the Company’s obligations to such Holder, to realize on any collateral or any other security for such obligations, or to enforce a judgment or other court ruling in favor of such Holder or (ii) shall limit, or shall be deemed or construed to limit, any provision of Section 25 above. **THE COMPANY HEREBY IRREVOCABLY WAIVES ANY RIGHT IT MAY HAVE TO, AND AGREES NOT TO REQUEST, A JURY TRIAL FOR THE ADJUDICATION OF ANY DISPUTE HEREUNDER OR IN CONNECTION WITH OR ARISING OUT OF THIS CERTIFICATE OF DESIGNATIONS OR ANY TRANSACTION CONTEMPLATED HEREBY.**

29. Judgment Currency.

(a) If for the purpose of obtaining or enforcing judgment against the Company in any court in any jurisdiction it becomes necessary to convert into any other currency (such other currency being hereinafter in this Section 29 referred to as the “**Judgment Currency**”) an amount due in U.S. dollars under this Certificate of Designations, the conversion shall be made at the Exchange Rate prevailing on the Trading Day immediately preceding:

(i) the date actual payment of the amount due, in the case of any proceeding in the courts of New York or in the courts of any other jurisdiction that will give effect to such conversion being made on such date: or

(ii) the date on which the foreign court determines, in the case of any proceeding in the courts of any other jurisdiction (the date as of which such conversion is made pursuant to this Section 29(a)(ii) being hereinafter referred to as the “**Judgment Conversion Date**”).

(b) If in the case of any proceeding in the court of any jurisdiction referred to in Section 29(a)(ii) above, there is a change in the Exchange Rate prevailing between the Judgment Conversion Date and the date of actual payment of the amount due, the applicable party shall pay such adjusted amount as may be necessary to ensure that the amount paid in the Judgment Currency, when converted at the Exchange Rate prevailing on the date of payment, will produce the amount of US dollars which could have been purchased with the amount of Judgment Currency stipulated in the judgment or judicial order at the Exchange Rate prevailing on the Judgment Conversion Date.

(c) Any amount due from the Company under this provision shall be due as a separate debt and shall not be affected by judgment being obtained for any other amounts due under or in respect of this Certificate of Designations.

30. Severability. If any provision of this Certificate of Designations is prohibited by law or otherwise determined to be invalid or unenforceable by a court of competent jurisdiction, the provision that would otherwise be prohibited, invalid or unenforceable shall be deemed amended to apply to the broadest extent that it would be valid and enforceable, and the invalidity or unenforceability of such provision shall not affect the validity of the remaining provisions of this Certificate of Designations so long as this Certificate of Designations as so modified continues to express, without material change, the original intentions of the parties as to the subject matter hereof and the prohibited nature, invalidity or unenforceability of the provision(s) in question does not substantially impair the respective expectations or reciprocal obligations of the parties or the practical realization of the benefits that would otherwise be conferred upon the parties. The parties will endeavor in good faith negotiations to replace the prohibited, invalid or unenforceable provision(s) with a valid provision(s), the effect of which comes as close as possible to that of the prohibited, invalid or unenforceable provision(s).

31. Maximum Payments. Without limiting Section 9(d) of the Securities Purchase Agreement, nothing contained herein shall be deemed to establish or require the payment of a rate of interest or other charges in excess of the maximum permitted by applicable law. In the event that the rate of interest required to be paid or other charges hereunder exceed the maximum permitted by such law, any payments in excess of such maximum shall be credited against amounts owed by the Company to the applicable Holder and thus refunded to the Company.

32. Stockholder Matters; Amendment.

(a) Stockholder Matters. Any stockholder action, approval or consent required, desired or otherwise sought by the Company pursuant to the DGCL, the Certificate of Incorporation, this Certificate of Designations or otherwise with respect to the issuance of Preferred Shares may be effected by written consent of the Company's stockholders or at a duly called meeting of the Company's stockholders, all in accordance with the applicable rules and regulations of the DGCL. This provision is intended to comply with the applicable sections of the DGCL permitting stockholder action, approval and consent affected by written consent in lieu of a meeting.

(b) Amendment. Except for Section 4(d)(i), which may not be amended or waived hereunder, this Certificate of Designations or any provision hereof may be amended by obtaining the affirmative vote at a meeting duly called for such purpose, or written consent without a meeting in accordance with the DGCL, of the Required Holders, voting separate as a single class, and with such other stockholder approval, if any, as may then be required pursuant to the DGCL and the Certificate of Incorporation.

33. Certain Defined Terms. For purposes of this Certificate of Designations, the following terms shall have the following meanings:

(a) "**1933 Act**" means the Securities Act of 1933, as amended, and the rules and regulations thereunder.

(b) "**1934 Act**" means the Securities Exchange Act of 1934, as amended, and the rules and regulations thereunder.

(c) "**Additional Amount**" means, as of the applicable date of determination, with respect to each Preferred Share, all declared and unpaid Dividends on such Preferred Share.

(d) "**Adjusted Floor Price**" means, as determined on each six month anniversary of the Issuance Date (each, an "**Floor Adjustment Date**"), the lower of (i) the Floor Price then in effect and (ii) 20% of the lower of (x) the Nasdaq closing price of the Common Stock as of the Trading Day ended immediately prior to such applicable Floor Adjustment Date and (y) the quotient of (I) the sum of each Nasdaq closing price of the Common Stock on each Trading Day of the five (5) Trading Day period ended on, and including, the Trading Day ended immediately prior to such applicable Floor Adjustment Date, divided by (II) five (5). All such determinations to be appropriately adjusted for any stock split, stock dividend, stock combination or other similar transaction during any such measuring period.

(e) "**Adjustment Right**" means any right granted with respect to any securities issued in connection with, or with respect to, any issuance or sale (or deemed issuance or sale in accordance with Section 8(a)) of shares of Common Stock (other than rights of the type described in Section 7(a) hereof) that could result in a decrease in the net consideration received by the Company in connection with, or with respect to, such securities (including, without limitation, any cash settlement rights, cash adjustment or other similar rights).

(f) "**Affiliate**" or "**Affiliated**" means, with respect to any Person, any other Person that directly or indirectly controls, is controlled by, or is under common control with, such Person, it being understood for purposes of this definition that "control" of a Person means the power directly or indirectly either to vote 10% or more of the stock having ordinary voting power for the election of directors of such Person or direct or cause the direction of the management and policies of such Person whether by contract or otherwise.

(g) "**Alternate Conversion Floor Amount**" means an amount in cash, to be delivered by wire transfer of immediately available funds pursuant to wire instructions delivered to the Company by the Holder in writing, equal to the product obtained by multiplying (A) the higher of (I) the highest price that the Common Stock trades at on the Trading Day immediately preceding the relevant Alternate Conversion Date and (II) the applicable Alternate Conversion Price and (B) the difference obtained by subtracting (I) the number of shares of Common Stock delivered (or to be delivered) to the Holder on the applicable Share Delivery Deadline with respect to such Alternate Conversion from (II) the quotient obtained by dividing (x) the applicable Conversion Amount that the Holder has elected to be the subject of the applicable Alternate Conversion, by (y) the applicable Alternate Conversion Price without giving effect to clause (x) of such definition.

(h) “**Alternate Conversion Price**” means, with respect to any Alternate Conversion that price which shall be the lower of (i) the applicable Conversion Price as in effect on the applicable Conversion Date of the applicable Alternate Conversion, and (ii) the greater of (x) the Floor Price and (y) 80% of the lowest VWAP of the Common Stock of any Trading Day during the twenty (20) consecutive Trading Day period ending and including the Trading Day immediately preceding the delivery or deemed delivery of the applicable Conversion Notice (such period, the “**Alternate Conversion Measuring Period**”). All such determinations to be appropriately adjusted for any stock dividend, stock split, stock combination, reclassification or similar transaction that proportionately decreases or increases the Common Stock during such Alternate Conversion Measuring Period.

(i) “**Approved Stock Plan**” means any employee benefit plan or agreement which has been approved by the Board prior to or subsequent to the Subscription Date pursuant to which shares of Common Stock and standard options to purchase Common Stock may be issued to any employee, officer, consultant or director for services provided to the Company in their capacity as such.

(j) “**Attribution Parties**” means, collectively, the following Persons and entities: (i) any investment vehicle, including, any funds, feeder funds or managed accounts, currently, or from time to time after the Initial Issuance Date, directly or indirectly managed or advised by a Holder’s investment manager or any of its Affiliates or principals, (ii) any direct or indirect Affiliates of such Holder or any of the foregoing, (iii) any Person acting or who could be deemed to be acting as a Group together with such Holder or any of the foregoing and (iv) any other Persons whose beneficial ownership of the Company’s Common Stock would or could be aggregated with such Holder’s and the other Attribution Parties for purposes of Section 13(d) of the 1934 Act. For clarity, the purpose of the foregoing is to subject collectively such Holder and all other Attribution Parties to the Maximum Percentage.

(k) “**Black Scholes Consideration Value**” means the value of the applicable Option, Convertible Security or Adjustment Right (as the case may be) as of the date of issuance thereof calculated using the Black Scholes Option Pricing Model obtained from the “OV” function on Bloomberg utilizing (i) an underlying price per share equal to the Closing Sale Price of the Common Stock on the Trading Day immediately preceding the public announcement of the execution of definitive documents with respect to the issuance of such Option, Convertible Security or Adjustment Right (as the case may be), (ii) a risk-free interest rate corresponding to the U.S. Treasury rate for a period equal to the remaining term of such Option, Convertible Security or Adjustment Right (as the case may be) as of the date of issuance of such Option, Convertible Security or Adjustment Right (as the case may be), (iii) a zero cost of borrow and (iv) an expected volatility equal to the greater of 100% and the 100 day volatility obtained from the HVT function on Bloomberg (determined utilizing a 365 day annualization factor) as of the Trading Day immediately following the date of issuance of such Option, Convertible Security or Adjustment Right (as the case may be).

(l) “**Bloomberg**” means Bloomberg, L.P.

(m) “**Book-Entry**” means each entry on the Register evidencing one or more Preferred Shares held by a Holder in lieu of a Preferred Share Certificate issuable hereunder.

(n) “**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.

(o) “**Change of Control**” means any Fundamental Transaction other than (i) any merger of the Company or any of its, direct or indirect, wholly-owned Subsidiaries with or into any of the foregoing Persons, (ii) any reorganization, recapitalization or reclassification of the shares of Common Stock in which holders of the Company’s voting power immediately prior to such reorganization, recapitalization or reclassification continue after such reorganization, recapitalization or reclassification to hold publicly traded securities and, directly or indirectly, are, in all material respects, the holders of the voting power of the surviving entity (or entities with the authority or voting power to elect the members of the board of directors (or their equivalent if other than a corporation) of such entity or entities) after such reorganization, recapitalization or reclassification or (iii) pursuant to a migratory merger effected solely for the purpose of changing the jurisdiction of incorporation of the Company or any of its Subsidiaries.

(p) “**Change of Control Redemption Premium**” means 125%.

(q) “**Closing Bid Price**” and “**Closing Sale Price**” means, for any security as of any date, the last closing bid price and last closing trade price, respectively, for such security on the Principal Market, as reported by Bloomberg, or, if the Principal Market begins to operate on an extended hours basis and does not designate the closing bid price or the closing trade price (as the case may be) then the last bid price or last trade price, respectively, of such security prior to 4:00:00 p.m., New York time, as reported by Bloomberg, or, if the Principal Market is not the principal securities exchange or trading market for such security, the last closing bid price or last trade price, respectively, of such security on the principal securities exchange or trading market where such security is listed or traded as reported by Bloomberg, or if the foregoing do not apply, the last closing bid price or last trade price, respectively, of such security in the over-the-counter market on the electronic bulletin board for such security as reported by Bloomberg, or, if no closing bid price or last trade price, respectively, is reported for such security by Bloomberg, the average of the bid prices, or the ask prices, respectively, of any market makers for such security as reported in The Pink Open Market (or a similar organization or agency succeeding to its functions of reporting prices). If the Closing Bid Price or the Closing Sale Price cannot be calculated for a security on a particular date on any of the foregoing bases, the Closing Bid Price or the Closing Sale Price (as the case may be) of such security on such date shall be the fair market value as mutually determined by the Company and the Required Holder. If the Company and the Required Holders are unable to agree upon the fair market value of such security, then such dispute shall be resolved in accordance with the procedures in Section 25. All such determinations shall be appropriately adjusted for any stock splits, stock dividends, stock combinations, recapitalizations or other similar transactions during such period.

(r) “**Closing Date**” shall have the meaning set forth in the Securities Purchase Agreement, which date is the date the Company initially issued the Preferred Shares and the Notes pursuant to the terms of the Securities Purchase Agreement.

(s) “**Common Stock**” means (i) the Company’s shares of common stock, \$0.001 par value per share, and (ii) any capital stock into which such common stock shall have been changed or any share capital resulting from a reclassification of such common stock.

(t) “**Common Stock Deemed Outstanding**” means, at any given time, the number of shares of Common Stock actually outstanding at such time, plus the number of shares of Common Stock that would be issued upon conversion at such time pursuant to Sections 4(b)(i) and 4(b)(ii), but excluding any Common Stock owned or held or for the account of the Company.

(u) “**Contingent Obligation**” means, as to any Person, any direct or indirect liability, contingent or otherwise, of that Person with respect to any Indebtedness, lease, dividend or other obligation of another Person if the primary purpose or intent of the Person incurring such liability, or the primary effect thereof, is to provide assurance to the obligee of such liability that such liability will be paid or discharged, or that any agreements relating thereto will be complied with, or that the holders of such liability will be protected (in whole or in part) against loss with respect thereto.

(v) “**Conversion Floor Price Condition**” means that the relevant Alternate Conversion Price is being determined based on clause (x) of such definitions.

(w) “**Convertible Securities**” means any stock or other security (other than Options) that is at any time and under any circumstances, directly or indirectly, convertible into, exercisable or exchangeable for, or which otherwise entitles the holder thereof to acquire, any shares of Common Stock.

(x) “**Eligible Market**” means The New York Stock Exchange, the NYSE American, the Nasdaq Global Select Market, the Nasdaq Global Market, the Nasdaq Capital Market or the Principal Market.

(y) “**Event Market Price**” means, with respect to any Stock Combination Event Date, the quotient determined by dividing (x) the sum of the VWAP of the Common Stock for each of the five (5) Trading Days with the lowest VWAP of the Common Stock during the fifteen (15) consecutive Trading Day period ending and including the Trading Day immediately preceding the sixteenth (16th) Trading Day after such Stock Combination Event Date, divided by (y) five (5).

(z) “**Excluded Securities**” means (i) shares of Common Stock or standard options to purchase Common Stock issued to directors, officers or employees of the Company for services rendered to the Company in their capacity as such pursuant to an Approved Stock Plan (as defined above), provided that (A) all such issuances (taking into account the shares of Common Stock issuable upon exercise of such options) after the Subscription Date pursuant to this clause (i) do not, in the aggregate, exceed more than 5% of the Common Stock issued and outstanding immediately prior to the Subscription Date and (B) the exercise price of any such options is not lowered, none of such options are amended to increase the number of shares issuable thereunder and none of the terms or conditions of any such options are otherwise materially changed in any manner that adversely affects any of the Buyers (as defined in the Securities Purchase Agreement); (ii) shares of Common Stock issued upon the conversion or exercise of Convertible Securities or Options (other than standard options to purchase Common Stock issued pursuant to an Approved Stock Plan that are covered by clause (i) above) issued prior to the Subscription Date, provided that the conversion price of any such Convertible Securities or Options (other than standard options to purchase Common Stock issued pursuant to an Approved Stock Plan that are covered by clause (i) above) is not lowered, none of such Convertible Securities or Options (other than standard options to purchase Common Stock issued pursuant to an Approved Stock Plan that are covered by clause (i) above) are amended to increase the number of shares issuable thereunder and none of the terms or conditions of any such Convertible Securities (other than standard options to purchase Common Stock issued pursuant to an Approved Stock Plan that are covered by clause (i) above) are otherwise materially changed in any manner that adversely affects any of the Buyers; (iii) the shares of Common Stock issuable upon conversion of the Preferred Shares or otherwise pursuant to the terms of this Certificate of Designations; provided, that the terms of this Certificate of Designations are not amended, modified or changed on or after the Subscription Date (other than antidilution adjustments pursuant to the terms thereof in effect as of the Subscription Date), and (iv) the shares of Common Stock issuable upon conversion of the Notes; provided, that the terms of the Notes are not amended, modified or changed on or after the Subscription Date (other than antidilution adjustments pursuant to the terms thereof in effect as of the Subscription Date).

(aa) “**Floor Price**” means \$0.0721 (or such lower amount as permitted, from time to time, by the Principal Market), subject to adjustment for stock splits, stock dividends, stock combinations, recapitalizations or other similar events; provided that (a) if on an Adjustment Date the Floor Price then in effect is higher than the Adjusted Floor Price with respect to such Floor Adjustment Date, on such Floor Adjustment Date the Floor Price shall automatically lower to such applicable Adjusted Floor Price and (b) the Company may lower the Floor Price at any time upon written notice to each Holder.

(bb) “**Fundamental Transaction**” means (A) that the Company shall, directly or indirectly, including through subsidiaries, Affiliates or otherwise, in one or more related transactions, (i) consolidate or merge with or into (whether or not the Company is the surviving corporation) another Subject Entity, or (ii) sell, assign, transfer, convey or otherwise dispose of all or substantially all of the properties or assets of the Company or any of its “significant subsidiaries” (as defined in Rule 1-02 of Regulation S-X) to one or more Subject Entities, or (iii) make, or allow one or more Subject Entities to make, or allow the Company to be subject to or have its Common Stock be subject to or party to one or more Subject Entities making, a purchase, tender or exchange offer that is accepted by the holders of at least either (x) 50% of the outstanding shares of Common Stock, (y) 50% of the outstanding shares of Common Stock calculated as if any shares of Common Stock held by all Subject Entities making or party to, or Affiliated with any Subject Entities making or party to, such purchase, tender or exchange offer were not outstanding; or (z) such number of shares of Common Stock such that all Subject Entities making or party to, or Affiliated with any Subject Entity making or party to, such purchase, tender or exchange offer, become collectively the beneficial owners (as defined in Rule 13d-3 under the 1934 Act) of at least 50% of the outstanding shares of Common Stock, or (iv) consummate a stock or share purchase agreement or other business combination (including, without limitation, a reorganization, recapitalization, spin-off or scheme of arrangement) with one or more Subject Entities whereby all such Subject Entities, individually or in the aggregate, acquire in any transaction or series of related transactions, either (x) at least 50% of the outstanding shares of Common Stock, (y) at least 50% of the outstanding shares of Common Stock calculated as if any shares of Common Stock held by all the Subject Entities making or party to, or Affiliated with any Subject Entity making or party to, such stock purchase agreement or other business combination were not outstanding; or (z) such number of shares of Common Stock such that the Subject Entities become collectively the beneficial owners (as defined in Rule 13d-3 under the 1934 Act) of at least 50% of the outstanding shares of Common Stock, or (v) reorganize, recapitalize or reclassify its Common Stock, (B) that the Company shall, directly or indirectly, including through subsidiaries, Affiliates or otherwise, in one or more related transactions, allow any Subject Entity individually or the Subject Entities in the aggregate to be or become the “beneficial owner” (as defined in Rule 13d-3 under the 1934 Act), directly or indirectly, whether through acquisition, purchase, assignment, conveyance, tender, tender offer, exchange, reduction in outstanding shares of Common Stock, merger, consolidation, business combination, reorganization, recapitalization, spin-off, scheme of arrangement, reorganization, recapitalization or reclassification or otherwise in any manner whatsoever, of either (x) at least 50% of the aggregate ordinary voting power represented by issued and outstanding Common Stock, (y) at least 50% of the aggregate ordinary voting power represented by issued and outstanding Common Stock not held by all such Subject Entities as of the date of this Certificate of Designations calculated as if any shares of Common Stock held by all such Subject Entities were not outstanding, or (z) a percentage of the aggregate ordinary voting power represented by issued and outstanding shares of Common Stock or other equity securities of the Company sufficient to allow such Subject Entities to effect a statutory short form merger or other transaction requiring other stockholders of the Company to surrender their shares of Common Stock without approval of the stockholders of the Company or (C) directly or indirectly, including through subsidiaries, Affiliates or otherwise, in one or more related transactions, the issuance of or the entering into any other instrument or transaction structured in a manner to circumvent, or that circumvents, the intent of this definition in which case this definition shall be construed and implemented in a manner otherwise than in strict conformity with the terms of this definition to the extent necessary to correct this definition or any portion of this definition which may be defective or inconsistent with the intended treatment of such instrument or transaction.

(cc) “**GAAP**” means United States generally accepted accounting principles, consistently applied.

(dd) “**Group**” means a “group” as that term is used in Section 13(d) of the 1934 Act and as defined in Rule 13d-5 thereunder.

(ee) “**Holder Pro Rata Amount**” means, with respect to any Holder, a fraction (i) the numerator of which is the number of Preferred Shares issued to such Holder pursuant to the Securities Purchase Agreement on the Initial Issuance Date and (ii) the denominator of which is the number of Preferred Shares issued to all Holders pursuant to the Securities Purchase Agreement on the Initial Issuance Date.

(ff) “**Indebtedness**” means of any Person means, without duplication (A) all indebtedness for borrowed money, (B) all obligations issued, undertaken or assumed as the deferred purchase price of property or services, including, without limitation, “capital leases” in accordance with United States generally accepted accounting principles consistently applied for the periods covered thereby (other than trade payables entered into in the ordinary course of business consistent with past practice), (C) all reimbursement or payment obligations with respect to letters of credit, surety bonds and other similar instruments, (D) all obligations evidenced by notes, bonds, debentures or similar instruments, including obligations so evidenced incurred in connection with the acquisition of property, assets or businesses, (E) all indebtedness created or arising under any conditional sale or other title retention agreement, or incurred as financing, in either case with respect to any property or assets acquired with the proceeds of such indebtedness (even though the rights and remedies of the seller or bank under such agreement in the event of default are limited to repossession or sale of such property), (F) all monetary obligations under any leasing or similar arrangement which, in connection with United States generally accepted accounting principles, consistently applied for the periods covered thereby, is classified as a capital lease, (G) all indebtedness referred to in clauses (A) through (F) above secured by (or for which the holder of such Indebtedness has an existing right, contingent or otherwise, to be secured by) any mortgage, deed of trust, lien, pledge, charge, security interest or other encumbrance of any nature whatsoever in or upon any property or assets (including accounts and contract rights) with respect to any asset or property owned by any Person, even though the Person which owns such assets or property has not assumed or become liable for the payment of such indebtedness, and (H) all Contingent Obligations in respect of indebtedness or obligations of others of the kinds referred to in clauses (A) through (G) above.

(gg) “**Intellectual Property Rights**” means, with respect to the Company and its Subsidiaries, all of their rights or licenses to use all trademarks, trade names, service marks, service mark registrations, service names, original works of authorship, patents, patent rights, copyrights, inventions, licenses, approvals, governmental authorizations, trade secrets and other intellectual property rights and all applications and registrations therefor.

(hh) “**Investment**” means any beneficial ownership (including stock, partnership or limited liability company interests) of or in any Person, or any loan, advance or capital contribution to any Person or the acquisition of all, or substantially all, of the assets of another Person or the purchase of any assets of another Person for greater than the fair market value of such assets.

(ii) “**Liquidation Event**” means, whether in a single transaction or series of transactions, the voluntary or involuntary liquidation, dissolution or winding up of the Company or such Subsidiaries the assets of which constitute all or substantially all of the assets of the business of the Company and its Subsidiaries, taken as a whole.

(jj) “**Letter Agreement**” shall have the meaning as set forth in the Securities Purchase Agreement.

(kk) “**Market Price**” means, with respect to any date of determination, the greater of (x) the Floor Price and (y) 80% of the quotient determined by dividing (i) the sum of the VWAP of the Common Stock for each of the three (3) Trading Days with the lowest VWAP during the twenty (20) consecutive Trading Day period ending and including the Trading Day immediately preceding such date of determination, divided by (ii) three (3). All such determinations to be appropriately adjusted for any stock dividend, stock split, stock combination, reclassification or similar transaction that proportionately decreases or increases the Common Stock during such measuring period.

(ll) “**Material Adverse Effect**” means any material adverse effect on the business, properties, assets, liabilities, operations, results of operations, condition (financial or otherwise) or prospects of the Company and its Subsidiaries, if any, individually or taken as a whole, or on the transactions contemplated hereby or on the other Transaction Documents (as defined below), or by the agreements and instruments to be entered into in connection therewith or on the authority or ability of the Company to perform its obligations under the Transaction Documents.

(mm) “**Maturity Date**” shall mean January 2, 2025; provided, however, the Maturity Date may be extended at the option of a Holder (i) in the event that, and for so long as, a Triggering Event shall have occurred and be continuing or any event shall have occurred and be continuing that with the passage of time and the failure to cure would result in a Triggering Event or (ii) through the date that is twenty (20) Business Days after the consummation of a Fundamental Transaction in the event that a Fundamental Transaction is publicly announced or a Change of Control Notice is delivered prior to the Maturity Date, provided further that if a Holder elects to convert some or all of its Preferred Shares pursuant to Section 4 hereof, and the Conversion Amount would be limited pursuant to Section 4(d) hereunder, the Maturity Date shall automatically be extended until such time as such provision shall not limit the conversion of such Preferred Shares.

(nn) “**Notes**” has the meaning ascribed to such term in the Securities Purchase Agreement, and shall include all notes issued in exchange therefor or replacement thereof.

(oo) “**Options**” means any rights, warrants or options to subscribe for or purchase shares of Common Stock or Convertible Securities.

(pp) “**Parent Entity**” of a Person means an entity that, directly or indirectly, controls the applicable Person and whose common stock or equivalent equity security is quoted or listed on an Eligible Market, or, if there is more than one such Person or Parent Entity, the Person or Parent Entity with the largest public market capitalization as of the date of consummation of the Fundamental Transaction.

(qq) “**Permitted Indebtedness**” means (i) Indebtedness set forth on Schedule 3(s) to the Securities Purchase Agreement, as in effect as of the Subscription Date, (ii) the Notes and (iii) Indebtedness secured by Permitted Liens or unsecured but as described in clauses (iv) and (v) of the definition of Permitted Liens.

(rr) “**Permitted Liens**” means (i) any Lien for taxes not yet due or delinquent or being contested in good faith by appropriate proceedings for which adequate reserves have been established in accordance with GAAP, (ii) any statutory Lien arising in the ordinary course of business by operation of law with respect to a liability that is not yet due or delinquent, (iii) any Lien created by operation of law, such as materialmen’s liens, mechanics’ liens and other similar liens, arising in the ordinary course of business with respect to a liability that is not yet due or delinquent or that are being contested in good faith by appropriate proceedings, (iv) Liens (A) upon or in any equipment acquired or held by the Company or any of its Subsidiaries to secure the purchase price of such equipment or Indebtedness incurred solely for the purpose of financing the acquisition or lease of such equipment, or (B) existing on such equipment at the time of its acquisition, provided that the Lien is confined solely to the property so acquired and improvements thereon, and the proceeds of such equipment, in either case, with respect to Indebtedness in an aggregate amount not to exceed \$100,000, (v) Liens incurred in connection with the extension, renewal or refinancing of the Indebtedness secured by Liens of the type described in clause (iv) above, provided that any extension, renewal or replacement Lien shall be limited to the property encumbered by the existing Lien and the principal amount of the Indebtedness being extended, renewed or refinanced does not increase, (vi) Liens in favor of customs and revenue authorities arising as a matter of law to secure payments of custom duties in connection with the importation of goods and (vii) Liens arising from judgments, decrees or attachments in circumstances not constituting a Triggering Event under Section 5(a)(ix).

(ss) “**Person**” means an individual, a limited liability company, a partnership, a joint venture, a corporation, a trust, an unincorporated organization, any other entity or a government or any department or agency thereof.

(tt) “**Principal Market**” means the Nasdaq Capital Market.

(uu) “**Redemption Notices**” means, collectively, the Triggering Events Redemption Notices, the Maturity Redemption Notice, the Company Optional Redemption Notices, and the Change of Control Redemption Notices, and each of the foregoing, individually, a “**Redemption Notice**.”

(vv) “**Redemption Premium**” means 125%.

(ww) “**Redemption Prices**” means, collectively, any Triggering Event Redemption Price, Change of Control Redemption Price, Maturity Redemption Price, and Company Optional Redemption Price, and each of the foregoing, individually, a “**Redemption Price**.”

(xx) “**Registration Rights Agreement**” means each of that certain registration rights agreement, dated as of the Closing Date, by and among the Company and (x) the initial holders of the Notes relating to, among other things, the registration of the resale of the Common Stock issuable upon conversion of the Notes or otherwise pursuant to the terms of the Notes, as may be amended from time to time and (y) the Holders relating to, among other things, the registration of the resale of the Common Stock issuable upon conversion of the Preferred Shares or otherwise pursuant to the terms of this Certificate of Designations, in each case, as may be amended from time to time.

(yy) “**SEC**” means the United States Securities and Exchange Commission or the successor thereto.

(zz) “**Securities Purchase Agreement**” means that certain securities purchase agreement by and among the Company and the initial holders of Notes, dated as of the Subscription Date, as may be amended from time in accordance with the terms thereof.

(aaa) “**Securities**” means the Notes, the Conversion Shares (as defined in the Securities Purchase Agreement), the Warrants, the Warrant Shares, the Preferred Shares and the Conversion Shares (as defined in the Letter Agreement).

(bbb) “**Stated Value**” shall mean \$1,000 per share, subject to adjustment for stock splits, stock dividends, recapitalizations, reorganizations, reclassifications, combinations, subdivisions or other similar events occurring after the Initial Issuance Date with respect to the Preferred Shares.

(ccc) “**Subscription Date**” means April 2, 2024.

(ddd) “**Subject Entity**” means any Person, Persons or Group or any Affiliate or associate of any such Person, Persons or Group.

(eee) “**Subsidiaries**” shall have the meaning as set forth in the Securities Purchase Agreement.”

(fff) “**Successor Entity**” means the Person (or, if so elected by the Required Holders, the Parent Entity) formed by, resulting from or surviving any Fundamental Transaction or the Person (or, if so elected by the Required Holders, the Parent Entity) with which such Fundamental Transaction shall have been entered into.

(ggg) “**Trading Day**” means, as applicable, (x) with respect to all price or trading volume determinations relating to the Common Stock, any day on which the Common Stock is traded on the Principal Market, or, if the Principal Market is not the principal trading market for the Common Stock, then on the principal securities exchange or securities market on which the Common Stock is then traded, provided that “Trading Day” shall not include any day on which the Common Stock is scheduled to trade on such exchange or market for less than 4.5 hours or any day that the Common Stock is suspended from trading during the final hour of trading on such exchange or market (or if such exchange or market does not designate in advance the closing time of trading on such exchange or market, then during the hour ending at 4:00:00 p.m., New York time) unless such day is otherwise designated as a Trading Day in writing by the applicable Holder or (y) with respect to all determinations other than price determinations relating to the Common Stock, any day on which The New York Stock Exchange (or any successor thereto) is open for trading of securities.

(hhh) “**Transaction Documents**” means the Securities Purchase Agreement, this Certificate of Designations, the Letter Agreement (as defined in the Securities Purchase Agreement), the Asset Purchase Agreement (as defined in the Securities Purchase Agreement), the Notes and each of the other agreements and instruments entered into or delivered by the Company or any of the Holders in connection with the transactions contemplated by the Securities Purchase Agreement, all as may be amended from time to time in accordance with the terms thereof.

(iii) “**VWAP**” means, for any security as of any date, the dollar volume-weighted average price for such security on the Principal Market (or, if the Principal Market is not the principal trading market for such security, then on the principal securities exchange or securities market on which such security is then traded), during the period beginning at 9:30 a.m., New York time, and ending at 4:00 p.m., New York time, as reported by Bloomberg through its “VAP” function (set to 09:30 start time and 16:00 end time) or, if the foregoing does not apply, the dollar volume-weighted average price of such security in the over-the-counter market on the electronic bulletin board for such security during the period beginning at 9:30 a.m., New York time, and ending at 4:00 p.m., New York time, as reported by Bloomberg, or, if no dollar volume-weighted average price is reported for such security by Bloomberg for such hours, the average of the highest closing bid price and the lowest closing ask price of any of the market makers for such security as reported in The Pink Open Market (or a similar organization or agency succeeding to its functions of reporting prices). If the VWAP cannot be calculated for such security on such date on any of the foregoing bases, the VWAP of such security on such date shall be the fair market value as mutually determined by the Company and the Required Holders. If the Company and the Required Holders are unable to agree upon the fair market value of such security, then such dispute shall be resolved in accordance with the procedures in Section 25. All such determinations shall be appropriately adjusted for any stock dividend, stock split, stock combination, recapitalization or other similar transaction during such period.

34. Disclosure. Upon receipt or delivery by the Company of any notice in accordance with the terms of this Certificate of Designations, unless the Company has in good faith determined that the matters relating to such notice do not constitute material, non-public information relating to the Company or any of its Subsidiaries, the Company shall on or prior to 9:00 am, New York city time on the Business Day immediately following such notice delivery date, publicly disclose such material, non-public information on a Current Report on Form 8-K or otherwise. In the event that the Company believes that a notice contains material, non-public information relating to the Company or any of its Subsidiaries, the Company so shall indicate to the Holder explicitly in writing in such notice (or immediately upon receipt of notice from such Holder, as applicable), and in the absence of any such written indication in such notice (or notification from the Company immediately upon receipt of notice from such Holder), such Holder shall be entitled to presume that information contained in the notice does not constitute material, non-public information relating to the Company or any of its Subsidiaries. Nothing contained in this Section 34 shall limit any obligations of the Company, or any rights of any Holder, under Section 4(i) of the Securities Purchase Agreement.

35. Absence of Trading and Disclosure Restrictions. The Company acknowledges and agrees that no Holder is a fiduciary or agent of the Company and that each Holder shall have no obligation to (a) maintain the confidentiality of any information provided by the Company or (b) refrain from trading any securities while in possession of such information in the absence of a written non-disclosure agreement signed by an officer of such Holder that explicitly provides for such confidentiality and trading restrictions. In the absence of such an executed, written non-disclosure agreement, the Company acknowledges that each Holder may freely trade in any securities issued by the Company, may possess and use any information provided by the Company in connection with such trading activity, and may disclose any such information to any third party.

* * * * *

IN WITNESS WHEREOF, the Company has caused this Certificate of Designations of Series B Convertible Preferred Stock of Windtree Therapeutics, Inc. to be signed by its President and Chief Executive Officer on this 2nd day of April, 2024.

WINDTREE THERAPEUTICS INC

By: /s/ Craig E. Fraser

Name: Craig E. Fraser

Title: President and Chief Executive Officer

WINDTREE THERAPEUTICS, INC.
CONVERSION NOTICE

Reference is made to the Certificate of Designations, Preferences and Rights of the Series B Convertible Preferred Stock of Windtree Therapeutics, Inc.(the “**Certificate of Designations**”). In accordance with and pursuant to the Certificate of Designations, the undersigned hereby elects to convert the number of shares of Series B Convertible Preferred Stock, \$0.001 par value per share (the “**Preferred Shares**”), of Windtree Therapeutics, Inc., a Delaware corporation (the “**Company**”), indicated below into shares of common stock, \$0.001 value per share (the “**Common Stock**”), of the Company, as of the date specified below.

Date of Conversion: _____

Aggregate number of Preferred Shares to be converted _____

Aggregate Stated Value of such Preferred Shares to be converted: _____

Aggregate accrued and unpaid Dividends and accrued and unpaid Late Charges with respect to such Preferred Shares and such Aggregate Dividends to be converted: _____

AGGREGATE CONVERSION AMOUNT TO BE CONVERTED: _____

Please confirm the following information:

Conversion Price: _____

Number of shares of Common Stock to be issued: _____

If this Conversion Notice is being delivered with respect to an Alternate Conversion, check here if Holder is electing to use the following Alternate Conversion Price: _____

Please issue the Common Stock into which the applicable Preferred Shares are being converted to Holder, or for its benefit, as follows:

Check here if requesting delivery as a certificate to the following name and to the following address:

Issue to: _____

Check here if requesting delivery by Deposit/Withdrawal at Custodian as follows:

DTC Participant: _____

DTC Number: _____

Account Number: _____



Date: _____, _

Name of Registered Holder

By: _

Name:

Title:

Tax ID: _____

E-mail Address:

ACKNOWLEDGMENT

The Company hereby (a) acknowledges this Conversion Notice, (b) certifies that the above indicated number of shares of Common Stock [are][are not] eligible to be resold by the Holder either (i) pursuant to Rule 144 (subject to the Holder's execution and delivery to the Company of a customary 144 representation letter) or (ii) an effective and available registration statement and (c) hereby directs _____ to issue the above indicated number of shares of Common Stock in accordance with the Transfer Agent Instructions dated _____, 20__ from the Company and acknowledged and agreed to by _____.

WINDTREE THERAPEUTICS, INC.

By:

Name:

Title:

**CERTIFICATE OF AMENDMENT TO
THE AMENDED AND RESTATED CERTIFICATE OF INCORPORATION
OF
WINDTREE THERAPEUTICS, INC.**

(Pursuant to Sections 228 and 242 of the
General Corporation Law of the State of Delaware)

The Company was originally incorporated on November 6, 1992, under the name “Ansan, Inc.” The Company changed its name on November 25, 1997, to Discovery Laboratories, Inc. The Company changed its name again on April 15, 2016, to Windtree Therapeutics, Inc.

This Certificate of Amendment to the Amended and Restated Certificate of Incorporation was duly adopted in accordance with Sections 228 and 242 of the General Corporation Law of the State of Delaware (“**Delaware Corporation Law**”) and the amendments set forth below shall become effective upon the filing and effectiveness pursuant to the Delaware Corporation Law of this of Certificate of Amendment to the Amended and Restated Certificate of Incorporation of the Company:

1. Article Four of the Amended and Restated Certificate of Incorporation of the Company is hereby amended by adding the following paragraph at the end thereof:

“Upon the filing and effectiveness (the “**Third Effective Time**”) pursuant to the Delaware Corporation Law of this Certificate of Amendment to the Amended and Restated Certificate of Incorporation of the Corporation, as amended, each eighteen (18) shares of the Corporation’s common stock, par value \$0.001 per share (the “**Common Stock**”), issued and outstanding immediately prior to the Third Effective Time shall automatically be combined into one (1) validly issued, fully paid and non-assessable share of Common Stock without any further action by the Corporation or the holder thereof (the “**Third Reverse Stock Split**”). No fractional shares will be issued as a result of the Third Reverse Stock Split. Each certificate that immediately prior to the Third Effective Time represented shares of Common Stock (“**Third Old Certificates**”), shall thereafter represent that number of shares of Common Stock into which the shares of Common Stock represented by the Third Old Certificate shall have been combined. Holders who otherwise would be entitled to receive fractional share interests of Common Stock upon the effectiveness of the Third Reverse Stock Split shall be entitled to receive a whole share of Common Stock in lieu of any fractional share created as a result of the Third Reverse Stock Split.”

2. This Certificate of Amendment shall become effective on April 19, 2024 at 11:59 p.m. Eastern Time.

3. Except as set forth in this Certificate of Amendment, the Amended and Restated Certificate of Incorporation, as amended, remains in full force and effect.

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IN WITNESS WHEREOF, Windtree Therapeutics, Inc. has caused this Certificate of Amendment to be signed by its duly authorized officer this 19th day of April, 2024.

WINDTREE THERAPEUTICS, INC.

By: /s/ Craig E. Fraser

Craig E. Fraser
President and Chief Executive Officer

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We consent to the incorporation by reference in this Registration Statement of Windtree Therapeutics, Inc. on Form S-1 to be filed on or about May 9, 2024 of our report dated April 16, 2024, on our audits of the financial statements as of December 31, 2023 and 2022 and for each of the years then ended, which report was included in the Annual Report on Form 10-K filed April 16, 2024. Our report includes an explanatory paragraph about the existence of substantial doubt concerning the Company's ability to continue as a going concern. We also consent to the reference to our firm under the caption "Experts" in this Registration Statement.

/s/ EisnerAmper LLP

EISNERAMPER LLP
Philadelphia, Pennsylvania
May 8, 2024

Calculation of Filing Fee Tables

Form S-1
(Form Type)Windtree Therapeutics, Inc.
(Exact Name of Registrant as Specified in its Charter)

Table 1: Newly Registered Securities and Carry Forward Securities

	Security type	Security class title	Fee calculation or carry forward rule	Amount registered	Proposed maximum offering price per unit	Maximum aggregate offering price(1)(2)	Fee rate	Amount of registration fee(1)
Fees to Be Paid	Equity	Common Stock, par value \$0.001 per share(3)	457(o)	-	-	\$ 8,000,000	0.00014760	\$ 1,180.80
Fees to Be Paid	Equity	Pre-funded warrants(3)(4)	457(g)	-	-	Included above	-	-
Fees to Be Paid	Equity	Shares of Common Stock issuable upon exercise of pre-funded warrants(3)	457(o)	-	-	Included above	-	-
Fees to Be Paid	Equity	Common warrants(4)	457(g)	-	-	Included above	-	-
Fees to Be Paid	Equity	Shares of Common Stock issuable upon exercise of Common warrants	457(o)	-	-	Included above	-	-
		Total Offering Amounts				\$ 8,000,000		\$ 1,180.80
		Total Fees Previously Paid						-
		Total Fee Offsets						\$ -
		Net Fee Due						\$ 1,180.80

- (1) Estimated solely for the purpose of calculating the registration fee pursuant Rule 457(o) under the Securities Act of 1933, as amended (the "Securities Act").
- (2) Pursuant to Rule 416(a) under the Securities Act, this registration statement shall also cover an indeterminate number of shares that may be issued and resold resulting from stock splits, stock dividends or similar transactions.
- (3) The proposed maximum aggregate offering price of the common stock will be reduced on a dollar-for-dollar basis based on the offering price of any pre-funded warrants issued in the offering, and the proposed maximum aggregate offering price of the pre-funded warrants to be issued in the offering will be reduced on a dollar-for-dollar basis based on the offering price of any common stock issued in the offering. Accordingly, the proposed maximum aggregate offering price of the common stock, pre-funded warrants and common stock warrants (including the common stock issuable upon exercise of the pre-funded warrants), if any, is \$8,000,000.
- (4) No fee pursuant to Rule 457(g) of the Securities Act.