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

**Amendment No. 1
to
FORM S-1
REGISTRATION STATEMENT
UNDER
THE SECURITIES ACT OF 1933**

SONNET BIOTHERAPEUTICS HOLDINGS, INC.

(Exact name of registrant as specified in its charter)

Delaware
(State or other jurisdiction of
incorporation or organization)

2834
(Primary Standard Industrial
Classification Code Number)

20-2932652
(I.R.S. Employer
Identification No.)

100 Overlook Center, Suite 102
Princeton, New Jersey 08540
Telephone: (609) 375-2227
(Address, including zip code, and telephone number, including area code, of registrant's principal executive offices)

Pankaj Mohan, Ph.D.
CEO and Chairman
Sonnet BioTherapeutics Holdings, Inc.
100 Overlook Center, Suite 102
Princeton, New Jersey 08540
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(Name, address, including zip code, and telephone number, including area code, of agent for service)

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**Approximate date of commencement of proposed sale to the public:
From time to time after this Registration Statement becomes effective.**

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

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

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

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

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

Large accelerated filer	<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 this Registration Statement shall become effective on such date as the Securities and Exchange Commission, acting pursuant to said Section 8(a), may determine.

The information in this preliminary prospectus is not complete and may be changed. These securities may not be issued until the registration statement filed with the U.S. Securities and Exchange Commission is effective. This preliminary prospectus is not an offer to sell these securities and does not constitute the solicitation of an offer to buy these securities in any jurisdiction where the offer or sale is not permitted.

SUBJECT TO COMPLETION, DATED JANUARY 30, 2025

PRELIMINARY PROSPECTUS



Up to 2,000,000 Shares of Common Stock

This prospectus relates to the potential offer and sale from time to time by Chardan Capital Markets LLC (“Chardan” or the “Selling Securityholder”) of up to 2,000,000 shares of our common stock, \$0.0001 par value per share (“Common Stock”), that have been or may be issued by us to Chardan pursuant to a ChEF Purchase Agreement, dated as of May 2, 2024 (the “Signing Date”), by and between us and Chardan (as amended from time to time, the “Purchase Agreement”), establishing a committed equity facility (the “Facility”). We have also filed a separate registration statement on Form S-1 (File No. 333-279095) registering up to 625,000 shares of Common Stock that have been or may be issued by us to Chardan in the Facility pursuant to the Purchase Agreement. As of January 29, 2025, 62,976 shares have been issued pursuant to the Purchase Agreement for aggregate net proceeds to us of \$0.2 million. Such shares of our Common Stock that we may elect, in our sole discretion, to issue and sell to Chardan from time to time under the Purchase Agreement are referred to herein as the “Purchase Shares”. The actual number of shares of our Common Stock issuable will vary depending on the then current market price of shares of our Common Stock sold to Chardan under the Facility, but will not exceed the number of shares of Common Stock set forth in the first sentence of this paragraph unless we file an additional registration statement under the Securities Act of 1933, as amended (the “Securities Act”) with the Securities and Exchange Commission (the “SEC”). See “The Committed Equity Financing” for a description of the Purchase Agreement and the Facility and “Selling Securityholder” for additional information regarding Chardan and “Plan of Distribution (Conflicts of Interest)” for a description of compensation payable to Chardan.

We are not selling any securities under this prospectus and will not receive any of the proceeds from the sale of the shares of our Common Stock by Chardan. We may receive up to \$25.0 million in aggregate gross proceeds from Chardan under the Purchase Agreement in connection with sales of the shares of our Common Stock to Chardan pursuant to the Purchase Agreement after the date of this prospectus. However, the actual proceeds from Chardan may be less than this amount depending on the number of shares of our Common Stock sold and the price at which the shares of our Common Stock are sold. Pursuant to the Purchase Agreement, we paid Chardan a commitment fee in an aggregate amount of \$100,000 (the “Commitment Fee”) on May 16, 2024 (the “Commencement Date”). We also paid Chardan a documentation fee equal to \$25,000 (the “Documentation Fee”) as consideration in connection with the preparation of the Purchase Agreement. See “Plan of Distribution” for a discussion of the fees and expenses payable by us to Chardan under the Purchase Agreement.

This prospectus provides you with a general description of such securities and the general manner in which Chardan may offer or sell the securities. More specific terms of any securities that Chardan may offer or sell may be provided in a prospectus supplement that describes, among other things, the specific amounts and prices of the securities being offered and the terms of the offering. The prospectus supplement may also add, update or change information contained in this prospectus.

Chardan may offer, sell or distribute all or a portion of the shares of our Common Stock acquired under the Purchase Agreement and hereby registered publicly or through private transactions at prevailing market prices or at negotiated prices. We will bear all costs, expenses and fees in connection with the registration of the shares of our Common Stock, including with regard to compliance with state securities or “blue sky” laws. The timing and amount of any sales of the shares of our Common Stock purchased by Chardan are within the sole discretion of Chardan. Chardan is an underwriter under the Securities Act, and any profit on the sale of shares of our Common Stock by Chardan and any discounts, commissions or concessions received by Chardan may be deemed to be underwriting discounts and commissions under the Securities Act. Although Chardan is obligated to purchase shares of our Common Stock under the terms and subject to the conditions and limitations of the Purchase Agreement to the extent we choose to sell such shares of our Common Stock to it (subject to certain conditions), there can be no assurances that we will choose to sell any shares of our Common Stock to Chardan or that Chardan will sell any or all of the shares of our Common Stock, if any, purchased under the Purchase Agreement pursuant to this prospectus. Chardan will bear all commissions and discounts, if any, attributable to its sale of shares of our Common Stock. See “Plan of Distribution (Conflicts of Interest).”

You should read this prospectus and any prospectus supplement or amendment, together with additional information described under the headings “Information Incorporated by Reference” and “Where You Can Find More Information,” carefully before you invest in our securities.

We effected a 1-for-8 reverse stock split on September 30, 2024, pursuant to which every eight shares of our issued and outstanding Common Stock were converted into one share of Common Stock. The reverse stock split had no impact on the par value of our Common Stock or the authorized number of shares of our Common Stock. Unless otherwise indicated, all share and per share information in this prospectus has been adjusted to reflect the September 30, 2024 reverse stock split.

Our Common Stock is listed on The Nasdaq Capital Market under the symbol “SONN.” On January 29, 2025, the last quoted sale price for the shares of our Common Stock as reported on Nasdaq was \$1.69 per share.

Investing in our securities involves a high degree of risk. Before buying any securities, you should carefully read the discussion of the risks of investing in our securities in “Risk Factors” beginning on page 4 of this prospectus.

Neither the SEC nor any state securities commission has approved or disapproved of the securities to be issued under this prospectus or determined if this prospectus is truthful or complete. Any representation to the contrary is a criminal offense.

The date of this prospectus is _____, 2025.

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ABOUT THIS PROSPECTUS

This prospectus is part of a resale registration statement on Form S-1 that we filed with the SEC whereby the Selling Securityholder may, from time to time, sell the securities offered by it described in this prospectus. We will not receive any proceeds from the sale by such Selling Securityholder of the securities offered by it described in this prospectus.

Neither we nor the Selling Securityholder has authorized anyone to provide you with any information or to make any representations other than those contained in this prospectus or any applicable prospectus supplement or any free writing prospectuses prepared by or on behalf of us or to which we have referred you. Neither we nor the Selling Securityholder takes responsibility for, and can provide no assurance as to the reliability of, any other information that others may give you. Neither we nor the Selling Securityholder will make an offer to sell these securities in any jurisdiction where such offer or sale is not permitted. No dealer, salesperson or other person is authorized to give any information or to represent anything not contained in this prospectus, any applicable prospectus supplement or any related free writing prospectus. You should assume that the information appearing in this prospectus or any prospectus supplement is accurate as of the date on the front of those documents only, regardless of the time of delivery of this prospectus or any applicable prospectus supplement, or any sale of a security. Our business, financial condition, results of operations and prospects may have changed since those dates.

The Selling Securityholder and its permitted transferees may use this resale registration statement to sell securities from time to time through any means described in the section titled “*Plan of Distribution.*” More specific terms of any securities that the Selling Securityholder and its permitted transferees offer and sell may be provided in a prospectus supplement that describes, among other things, the specific amounts and prices of the securities being offered and the terms of the offering.

We may also provide a prospectus supplement or post-effective amendment to the registration statement to add information to, or update or change information contained in, this prospectus. Any statement contained in this prospectus will be deemed to be modified or superseded for purposes of this prospectus to the extent that a statement contained in such prospectus supplement or post-effective amendment modifies or supersedes such statement. Any statement so modified will be deemed to constitute a part of this prospectus only as so modified, and any statement so superseded will be deemed not to constitute a part of this prospectus. You should read both this prospectus and any applicable prospectus supplement or post-effective amendment to the registration statement, together with the additional information to which we refer you in the sections of this prospectus titled “*Information Incorporated by Reference*” and “*Where You Can Find More Information.*”

This prospectus contains 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 filed or will be filed as exhibits to the registration statement of which this prospectus is a part, and you may obtain copies of those documents as described below under “*Where You Can Find More Information.*”

This prospectus contains and incorporates by reference certain market data and industry statistics and forecasts that are based on studies sponsored by us, independent industry publications and other publicly available information. Although we believe these sources are reliable, estimates as they relate to projections involve numerous assumptions, are subject to risks and uncertainties, and are subject to change based on various factors, including those discussed under “*Risk Factors*” in this prospectus and under similar headings in the documents incorporated by reference herein and therein. Accordingly, investors should not place undue reliance on this information.

This prospectus contains references to trademarks, trade names and service marks belonging to other entities. Solely for convenience, trademarks, trade names and service marks referred to in this prospectus may appear without the ® or TM symbols, but such references are not intended to indicate, in any way, that the applicable licensor will not assert, to the fullest extent under applicable law, its rights to these trademarks and trade names. We do not intend our use or display of other companies’ trade names, trademarks or service marks to imply a relationship with, or endorsement or sponsorship of us by, any other companies.

Unless the context otherwise requires, references in this prospectus to the “Company,” “we,” “us” and “our” and any related terms refer to Sonnet BioTherapeutics Holdings, Inc. and its consolidated subsidiaries.

CAUTIONARY NOTE CONCERNING FORWARD-LOOKING STATEMENTS

This prospectus contains forward-looking statements that involve substantial risks and uncertainties for purposes of the safe harbor provided by the Private Securities Litigation Reform Act of 1995. All statements contained in this prospectus other than statements of historical fact, including statements regarding our strategy, future operations, future financial position, liquidity, future revenue, projected expenses, results of operations, expectations concerning the timing and our ability to commence and subsequently report data from planned non-clinical studies and clinical trials, prospects, plans and objectives of management are forward-looking statements. The words “believe,” “may,” “will,” “estimate,” “continue,” “anticipate,” “intend,” “plan,” “expect,” “predict,” “potential,” “opportunity,” “goals,” or “should,” and similar expressions are intended to identify forward-looking statements. Such statements are based on management’s current expectations and involve risks and uncertainties. Actual results and performance could differ materially from those projected in the forward-looking statements as a result of many factors.

We based these forward-looking statements largely on our current expectations and projections about future events and trends that we believe may affect our financial condition, results of operations, business strategy, short-term and long-term business operations and objectives, and financial needs. These forward-looking statements are

subject to a number of risks, uncertainties, and assumptions, including those described in “Risk Factors” in this prospectus, and under a similar heading in any other annual, periodic or current report incorporated by reference into this prospectus or that we may file with the SEC in the future. These factors include, but are not limited to:

- our lack of operating history and history of operating losses;
- our need for significant additional capital and our ability to satisfy our capital needs;
- our ability to complete required clinical trials of our products and obtain approval from the U.S. Food and Drug Administration or other regulatory agents in different jurisdictions;
- our ability to maintain the listing of our common stock on The Nasdaq Capital Market;
- our ability to maintain or protect the validity of our patents and other intellectual property;
- our ability to retain key executive members;
- our ability to internally develop new inventions and intellectual property;
- interpretations of current laws and the passages of future laws;
- acceptance of our business model by investors;
- the emergence and effect of competing or complementary products, including the ability of our future products to compete effectively;
- the accuracy of our estimates regarding expenses and capital requirements;
- our ability to adequately support growth; and
- other factors discussed under the section “Risk Factors” in this prospectus and in our most recent Annual Report on Form 10-K.

Moreover, we operate in a very competitive and rapidly changing environment. New risks emerge quickly and from time to time. It is not possible for our management to predict all risks, nor can we assess the impact of all factors on our business or the extent to which any factor, or combination of factors, may cause actual results to differ materially from those contained in any forward-looking statements we may make. In light of these risks, uncertainties and assumptions, the future events and trends discussed in this prospectus, may not occur and actual results could differ materially and adversely from those anticipated or implied in the forward-looking statements. We undertake no obligation to revise or publicly release the results of any revision to these forward-looking statements, except as required by law. Given these risks and uncertainties, readers are cautioned not to place undue reliance on such forward-looking statements. All forward-looking statements are qualified in their entirety by this cautionary statement.

You should also read carefully the factors described in the “Risk Factors” section of this prospectus, and under a similar heading in any other annual, periodic or current report incorporated by reference into this prospectus, to better understand the risks and uncertainties inherent in our business and underlying any forward-looking statements. You are advised to consult any further disclosures we make on related subjects in our future public filings.

PROSPECTUS SUMMARY

This summary highlights information about our company, this offering and information contained in greater detail in other parts of this prospectus or incorporated by reference into this prospectus from our filings with the SEC listed in the section entitled “Information Incorporated by Reference.” Because it is only a summary, it does not contain all of the information that you should consider before purchasing our securities in this offering and it is qualified in its entirety by, and should be read in conjunction with, the more detailed information appearing elsewhere or incorporated by reference into this prospectus. You should read the entire prospectus, the registration statement of which this prospectus is a part, and the information incorporated by reference into this prospectus in their entirety, including the “Risk Factors” and our financial statements and the related notes incorporated by reference into this prospectus, before purchasing our securities in this offering.

Except as otherwise indicated herein or as the context otherwise requires, references in this prospectus to “the Company,” “we,” “us” and “our” refer to Sonnet BioTherapeutics Holdings, Inc. and our consolidated subsidiaries.

On September 30, 2024, we effected a reverse stock split for our issued and outstanding Common Stock at a ratio of 1-for-8. On August 31, 2023, we effected a reverse stock split of our issued and outstanding Common Stock at a ratio of 1-for-22. On September 16, 2022, we effected a reverse stock split of our issued and outstanding Common Stock at a ratio of 1-for-14. All of our historical share and per share information related to issued and outstanding Common Stock and outstanding options and warrants exercisable for Common Stock included in this prospectus have been adjusted, on a retroactive basis, to reflect the reverse stock splits. See “Corporate Information.”

Corporate Overview

Sonnet BioTherapeutics Holdings, Inc. (“we,” “us,” “our” or the “Company”), is a clinical stage, oncology-focused biotechnology company with a proprietary platform for innovating biologic medicines of single- or bi-specific action. Known as F_HAB™ (Fully Human Albumin Binding), the technology utilizes a fully human single chain antibody fragment that binds to and “hitch-hikes” on human serum albumin for transport to target tissues. We designed the construct to improve drug accumulation in specific tissues, as well as to extend the duration of activity in the body. F_HAB development candidates are produced in a mammalian cell culture, which enables glycosylation, thereby reducing the risk of immunogenicity. We believe our F_HAB technology, for which we received a U.S. patent in June 2021, is a distinguishing feature of our biopharmaceutical platform that is well suited for future drug development across a range of human disease areas, including in oncology, autoimmune, pathogenic, inflammatory, and hematological conditions.

Summary of Risk Factors

Our business is subject to numerous material and other risks that you should be aware of before making an investment decision. These risks are described more fully in the section entitled “Risk Factors.” These risks include, among others:

- It is not possible to predict the actual number of shares of our Common Stock, if any, we will sell under the Purchase Agreement to Chardan, the actual gross proceeds to us resulting from those sales, or the dilution to you from those sales.
- Investors who buy shares of our Common Stock from Chardan at different times will likely pay different prices.

- The sale or issuance of shares of our Common Stock to Chardan will result in additional outstanding shares and the resale of shares of our Common Stock by Chardan that it acquires pursuant to the Purchase Agreement, or the perception that such sales may occur, could cause the price of our Common Stock to decrease.
- We may use proceeds from sales of shares of our Common Stock made pursuant to the Purchase Agreement in ways with which you may not agree or in ways which may not yield a significant return.

Corporate Information

We were organized on October 21, 1999, under the name Tulvine Systems, Inc., under the laws of the State of Delaware. On April 25, 2005, Tulvine Systems, Inc. formed a wholly owned subsidiary, Chanticleer Holdings, Inc., and on May 2, 2005, Tulvine Systems, Inc. merged with, and changed its name to, Chanticleer Holdings, Inc. On April 1, 2020, we completed our business combination with Sonnet BioTherapeutics, Inc. (“**Sonnet**”), in accordance with the terms of the Agreement and Plan of Merger, dated as of October 10, 2019, as amended, by and among us, Sonnet and Biosub Inc., a wholly-owned subsidiary of the Company (“**Merger Sub**”) (the “**Merger Agreement**”), pursuant to which Merger Sub merged with and into Sonnet, with Sonnet surviving as a wholly owned subsidiary of us (the “**Merger**”). Under the terms of the Merger Agreement, we issued shares of Common Stock to Sonnet’s stockholders at an exchange rate of 0.106572 shares for each share of Sonnet Common Stock outstanding immediately prior to the Merger. In connection with the Merger, we changed our name from “Chanticleer Holdings, Inc.” to “Sonnet BioTherapeutics Holdings, Inc.,” and the business conducted by us became the business conducted by Sonnet.

On September 30, 2024, we effected a reverse stock split of our issued and outstanding Common Stock at a ratio of 1-for-8 (the “**2024 Reverse Stock Split**”). On August 31, 2023, we effected a reverse stock split of our issued and outstanding Common Stock at a ratio of 1-for-22 (the “**2023 Reverse Stock Split**”). On September 16, 2022, we effected a reverse stock split of our issued and outstanding Common Stock at a ratio of 1-for-14 (the “**2022 Reverse Stock Split**” and, together with the 2024 Reverse Stock Split and the 2023 Reverse Stock Split, the “**Reverse Stock Splits**”). Shares of Common Stock underlying outstanding stock options and other equity instruments convertible into Common Stock were proportionately reduced and the respective exercise prices, if applicable, were proportionately increased in accordance with the terms of the agreements governing such securities in connection with the Reverse Stock Splits. No fractional shares were issued in connection with the Reverse Stock Splits. Stockholders who would otherwise be entitled to a fractional share of Common Stock instead receive a proportional cash payment. All of our historical share and per share information related to issued and outstanding Common Stock and outstanding options and warrants exercisable for Common Stock included or incorporated by reference in this prospectus have been adjusted, on a retroactive basis, to reflect the Reverse Stock Splits.

Our principal executive offices are located at 100 Overlook Center, Suite 102, Princeton, New Jersey 08540, and our telephone number is (609) 375-2227. Our website is www.sonnetbio.com. Our website and the information contained on, or that can be accessed through, our website shall not be deemed to be incorporated by reference in, and are not considered part of, this prospectus. You should not rely on any such information in making your decision whether to purchase our Common Stock.

THE OFFERING

Issuer	Sonnet BioTherapeutics Holdings, Inc.
Shares of Common Stock offered by Chardan as the Selling Securityholder	Up to 2,000,000 shares of Common Stock that we may elect, in our sole discretion, to issue and sell to Chardan, from time to time from and after the Commencement Date (as defined herein) under the Purchase Agreement. The actual number of shares of our Common Stock issued and outstanding will vary depending on the then current market price of shares of our Common Stock sold to Chardan under the Facility. We have also filed a separate registration statement on Form S-1 (File No. 333-279095) registering up to 625,000 shares of Common Stock that have been or may be issued by us to Chardan in the Facility pursuant to the Purchase Agreement. As of January 29, 2025, 62,976 shares have been issued pursuant to the Purchase Agreement for aggregate net proceeds to us of \$0.2 million.
Terms of the Offering	Chardan will determine when and how it will dispose of any shares of our Common Stock acquired under the Purchase Agreement that are registered under this prospectus for resale.
Common Stock outstanding prior to the Offering	3,050,105 shares.
Common Stock outstanding immediately after the Offering	5,050,105 shares, assuming the sale of 2,000,000 shares of our Common Stock under the Purchase Agreement. The actual number of shares issued will vary depending on the sales prices in this offering. Under applicable Nasdaq rules, we obtained stockholder approval on September 12, 2024 at our 2024 Annual Meeting of Stockholders to issue to Chardan more than 20% of the total number of shares of our Common Stock that were outstanding immediately prior to the execution of the Purchase Agreement at an Average Price (as defined herein) less than the Base Price (as defined herein).
Use of Proceeds	We will not receive any proceeds from the resale of shares of our Common Stock by Chardan. However, we may receive up to \$25.0 million in aggregate gross proceeds from Chardan under the Purchase Agreement in connection with sales of shares of our Common Stock to Chardan pursuant to the Purchase Agreement from time to time after the date of this prospectus. The actual proceeds we receive may be less than this amount (before being reduced for the discount to Chardan) depending on the number of shares of our Common Stock sold and the price at which the shares of our Common Stock are sold. We intend to use any proceeds from any sales of shares of our Common Stock to Chardan under the Facility, together with our existing cash and cash equivalents, for research and development, including clinical trials, working capital and general corporate purposes. See “ <i>Use of Proceeds</i> .”

Conflicts of Interest

Chardan is a member of the Financial Industry Regulatory Authority, Inc. (“FINRA”) and is expected to act as an executing broker for the resale of shares of Common Stock in this offering. The receipt by Chardan of all the proceeds from resales of shares of Common Stock results in a “conflict of interest” under FINRA Rule 5121. Accordingly, such resales will be conducted in compliance with FINRA Rule 5121. To the extent that the shares of Common Stock do not have a “bona fide public market”, as defined in FINRA Rule 5121, a qualified independent underwriter will participate in the preparation of, and exercise the usual standards of “due diligence” with respect to, the registration statement. LifeSci Capital, LLC has agreed to act as qualified independent underwriter for this offering and will receive a quarterly fee of \$20,000 to be paid on the first business day of each quarter following the effectiveness of this Registration Statement for so long as the Purchase Agreement remains in effect, up to an aggregate amount of \$200,000 for doing so. Pursuant to FINRA Rule 5121, Chardan will not confirm resales of shares of Common Stock to any account over which it exercises discretionary authority without the prior written approval of the customer. See “*Plan of Distribution (Conflicts of Interest)*.”

Common Stock ticker symbol

“SONN.”

Risk factors

Any investment in the securities offered hereby is speculative and involves a high degree of risk. You should carefully consider the information set forth under “*Risk Factors*” and elsewhere in this prospectus.

The number of shares of our Common Stock that will be outstanding immediately after this offering is based on 3,050,105 shares of our Common Stock outstanding as of January 29, 2025, and assumes the sale and issuance by us of 2,000,000 shares of Common Stock in this offering and excludes:

- 9,175 shares of Common Stock reserved for issuance in connection with vested restricted stock units as of January 29, 2025;
- 7,977 shares of Common Stock reserved for issuance in connection with vested restricted stock awards as of January 29, 2025;
- 120,302 shares of Common Stock reserved for future issuance under the 2020 Omnibus Equity Incentive Plan as of January 29, 2025; and
- 5,789,600 shares of Common Stock issuable upon the exercise of warrants outstanding as of January 29, 2025, with a weighted average exercise price of \$14.47 per share.

Unless otherwise indicated, this prospectus reflects and assumes no issuances or exercises of any other outstanding shares, options or warrants after January 29, 2025.

RISK FACTORS

Investing in our securities involves a high degree of risk. We urge you to carefully consider all of the information contained in this prospectus and other information which may be incorporated by reference in this prospectus as provided under “Information Incorporated by Reference.” In particular, you should consider the risk factors below, together with those under the heading “Risk Factors” in our most recent Annual Report on Form 10-K, which is incorporated by reference into this prospectus, as those risk factors are amended or supplemented by our subsequent filings with the SEC. These risks and uncertainties are not the only risks and uncertainties we face. Additional risks and uncertainties not currently known to us, or that we currently view as immaterial, may also impair our business. If any of the risks or uncertainties described below or in our SEC filings or any additional risks and uncertainties actually occur, our business, financial condition, results of operations and cash flow could be materially and adversely affected. As a result, you could lose all or part of your investment.

Risks Related to the Facility

It is not possible to predict the actual number of shares of our Common Stock, if any, we will sell under the Purchase Agreement to Chardan, or the actual gross proceeds resulting from those sales or the dilution to you from those sales.

On May 2, 2024, we entered into the Purchase Agreement with Chardan, pursuant to which we may sell to Chardan up to \$25.0 million of shares of our Common Stock (the “**Total Commitment**”), upon the terms and subject to the conditions and limitations set forth in the Purchase Agreement. The shares of our Common Stock that may be issued under the Purchase Agreement may be sold by us to Chardan at our discretion from time to time until the earliest to occur of (i) the 36-month anniversary of the effective date of the registration statement of which this prospectus forms a part, (ii) the date on which Chardan has purchased the Total Commitment pursuant to the Purchase Agreement, (iii) the date on which our Common Stock fails to be listed or quoted on The Nasdaq Capital Market or any successor Principal Market (as defined in the Purchase Agreement), and (iv) the date on which, pursuant to or within the meaning of any bankruptcy law, we commence a voluntary case or any person commences a proceeding against us, a custodian is appointed for us or for all or substantially all of our property, or we make a general assignment for the benefit of our creditors (each date of such termination, an “Automatic Termination Event”). As of January 29, 2025, 62,976 shares have been issued pursuant to the Purchase Agreement for aggregate net proceeds to us of \$0.2 million. We have also filed a separate registration statement on Form S-1 (File No. 333-279095) registering up to 625,000 shares of Common Stock that have been or may be issued by us to Chardan in the Facility pursuant to the Purchase Agreement.

We generally have the right to control the timing and amount of any sales of our Common Stock to Chardan under the Purchase Agreement. Sales of our Common Stock, if any, to Chardan under the Purchase Agreement will depend upon market conditions and other factors to be determined by us. We may ultimately decide to sell to Chardan all, some or none of the Common Stock that may be available for us to sell to Chardan pursuant to the Purchase Agreement. Accordingly, we cannot guarantee that we will be able to sell all of the Total Commitment or how much in proceeds we may obtain under the Purchase Agreement. If we cannot sell securities under the Facility, we may be required to utilize more costly and time-consuming means of accessing the capital markets, which could have a material adverse effect on our liquidity and cash position.

Because the purchase price per share of Common Stock to be paid by Chardan for the Common Stock that we may elect to sell to Chardan under the Purchase Agreement, if any, will fluctuate based on the market prices of our Common Stock at the time we elect to sell shares to Chardan pursuant to the Purchase Agreement, if any, and the purchase price that Chardan is required to purchase the shares of Common Stock under the Purchase Agreement and as described under “*The Committed Equity Financing*,” it is not possible for us to predict, as of the date of this prospectus and prior to any such sales, the number of shares of Common Stock that we will sell to Chardan under the Purchase Agreement, the purchase price per share that Chardan will pay for shares of Common Stock purchased from us under the Purchase Agreement, or the aggregate gross proceeds that we will receive from those purchases by Chardan under the Purchase Agreement.

We are registering 2,000,000 shares of our Common Stock under this prospectus. The actual number of shares of our Common Stock issuable will vary depending on the then current market price of shares of our Common Stock sold to Chardan in this offering and the number of shares of our Common Stock we ultimately elect to sell to Chardan under the Purchase Agreement. If it becomes necessary for us to issue and sell to Chardan under the Purchase Agreement more than the 2,000,000 shares of our Common Stock being registered for resale under this prospectus in order to receive aggregate gross proceeds equal to \$25.0 million under the Purchase Agreement, we must file with the SEC one or more additional registration statements to register under the Securities Act the resale by Chardan of any such additional shares of our Common Stock we wish to sell

from time to time under the Purchase Agreement, which the SEC must declare effective, in each case before we may elect to sell any additional shares of our Common Stock under the Purchase Agreement. Under applicable Nasdaq rules, we obtained stockholder approval on September 12, 2024 at our 2024 Annual Meeting of Stockholders to issue to Chardan more than 20% of the total number of shares of our Common Stock that were outstanding immediately prior to the execution of the Purchase Agreement at an Average Price (as defined herein) less than the Base Price (as defined herein).

Chardan is not obligated to buy any Common Stock under the Purchase Agreement if such shares, when aggregated with all other Common Stock then beneficially owned by Chardan and its affiliates (as calculated pursuant to Section 13(d) of the Exchange Act and Rule 13d-3 promulgated thereunder), would result in Chardan beneficially owning Common Stock in excess of 4.99% of our outstanding voting power or shares of Common Stock. Our inability to access a portion or the full amount available under the Purchase Agreement, in the absence of any other financing sources, could have a material adverse effect on our business or results of operation.

Investors who buy Common Stock from Chardan at different times will likely pay different prices.

Pursuant to the Purchase Agreement, the timing, price and number of shares of Common Stock sold to Chardan will vary depending on when we choose to sell shares, if any, to Chardan. If and when we elect to sell Common Stock to Chardan pursuant to the Purchase Agreement, after Chardan has acquired such Common Stock, Chardan may resell all, some or none of such shares at any time or from time to time in its sole discretion and at different prices. As a result, investors who purchase shares from Chardan in this offering at different times will likely pay different prices for those shares, and so may experience different levels of dilution and in some cases substantial dilution and different outcomes in their investment results. Investors may experience a decline in the value of the shares they purchase from Chardan in this offering as a result of future sales made by us to Chardan at prices lower than the prices such investors paid for their shares in this offering.

The sale or issuance of shares of our Common Stock to Chardan will result in additional outstanding shares and the resale of shares of our Common Stock by Chardan that it acquires pursuant to the Purchase Agreement, or the perception that such sales may occur, could cause the price of shares of our Common Stock to decrease.

On May 2, 2024, we entered into the Purchase Agreement with Chardan, pursuant to which Chardan shall purchase from us up to the Total Commitment, upon the terms and subject to the conditions and limitations set forth in the Purchase Agreement. The shares of our Common Stock issued under the Purchase Agreement may be sold by us to Chardan at our sole discretion, subject to the satisfaction of certain conditions in the Purchase Agreement, from time to time, until the earliest to occur of (i) the 36-month anniversary of the effectiveness of this registration statement, (ii) the date on which Chardan has purchased the Total Commitment pursuant to the Purchase Agreement, (iii) the date on which our Common Stock fails to be listed or quoted on The Nasdaq Capital Market or any successor Principal Market, and (iv) the date on which, pursuant to or within the meaning of any bankruptcy law, we commence a voluntary case or any person commences a proceeding against us, a custodian is appointed for us or for all or substantially all of our property, or we make a general assignment for the benefit of our creditors. The purchase price for shares of our Common Stock that we may sell to Chardan under the Purchase Agreement will fluctuate based on the trading price of shares of our Common Stock. Depending on market liquidity at the time, sales of shares of our Common Stock may cause the trading price of shares of our Common Stock to decrease. We generally have the right to control the timing and amount of any future sales of shares of our Common Stock to Chardan. Additional sales of shares of our Common Stock, if any, to Chardan will depend upon market conditions and other factors to be determined by us. We may ultimately decide to sell to Chardan all, some or none of the additional shares of our Common Stock that may be available for us to sell pursuant to the Purchase Agreement. If and when we do sell shares of our Common Stock to Chardan, after Chardan has acquired shares of our Common Stock, Chardan may resell all, some or none of such shares of our Common Stock at any time or from time to time in its discretion. Therefore, sales to Chardan by us could result in substantial dilution to the interests of other holders of shares of our Common Stock. In addition, if we sell a substantial number of shares of our Common Stock to Chardan under the Purchase Agreement, or if investors expect that we will do so, the actual sales of shares of our Common Stock or the mere existence of our arrangement with Chardan may make it more difficult for us to sell equity or equity-related securities in the future at a time and at a price that we might otherwise wish to effect such sales.

We may use proceeds from sales of our Common Stock made pursuant to the Purchase Agreement in ways with which you may not agree or in ways which may not yield a significant return.

We will have broad discretion over the use of proceeds from sales of our Common Stock made pursuant to the Purchase Agreement, including for any of the purposes described in the section entitled “Use of Proceeds,” and you will not have the opportunity, as part of your investment decision, to assess whether the proceeds are being used appropriately. Because of the number and variability of factors that will determine our use of the net proceeds, their ultimate use may vary substantially from their currently intended use. While we expect to use the net proceeds from this offering as set forth in “Use of Proceeds,” we are not obligated to do so. The failure by us to apply these funds effectively could harm our business, and the net proceeds may be used for corporate purposes that do not increase our operating results or enhance the value of our Common Stock.

THE COMMITTED EQUITY FINANCING

On May 2, 2024, we entered into the Purchase Agreement with Chardan establishing the Facility. Pursuant to and upon the terms and subject to the conditions and limitations set forth in the Purchase Agreement, beginning on May 16, 2024 (the “**Commencement Date**”), we have the right from time to time at our option to direct Chardan to purchase up to \$25.0 million of shares of our Common Stock. Sales of our Common Stock to Chardan under the Purchase Agreement, and the timing of any sales, will be determined by us from time to time in our sole discretion and will depend on a variety of factors, including, among other things, market conditions, the trading price of our Common Stock and determinations by us regarding the use of proceeds from any sale of such Common Stock. The net proceeds from any sales under the Facility will depend on the frequency with, and prices at, which the Common Stock are sold to Chardan. To the extent we sell shares under the Purchase Agreement, we currently plan to use any proceeds therefrom, together with our existing cash and cash equivalents, for research and development, including clinical trials, working capital and general corporate purposes. As of January 29, 2025, 62,976 shares have been issued pursuant to the Purchase Agreement for aggregate net proceeds to us of \$0.2 million. We have also filed a separate registration statement on Form S-1 (File No. 333-279095) registering up to 625,000 shares of Common Stock that have been or may be issued by us to Chardan in the Facility pursuant to the Purchase Agreement.

In accordance with our obligations under the Purchase Agreement, we have filed the registration statement of which this prospectus forms a part in order to register the resale by Chardan of up to 2,000,000 Purchase Shares, consisting of shares of Common Stock that we may elect, in our sole discretion, to issue and sell to Chardan, from time to time from and after the Commencement Date upon the terms and subject to the conditions and limitations of the Purchase Agreement. Unless earlier terminated, the Purchase Agreement will remain in effect until the earliest to occur of (i) the 36-month anniversary of the effective date of the registration statement of which this prospectus forms a part, (ii) the date on which Chardan has purchased the Total Commitment pursuant to the Purchase Agreement, (iii) the date on which our Common Stock fails to be listed or quoted on The Nasdaq Capital Market or any successor market, and (iv) the date on which, pursuant to or within the meaning of any bankruptcy law, we commence a voluntary case or any Person commences a proceeding against us, a custodian is appointed for us or for all or substantially all of our property, or we make a general assignment for the benefit of our creditors (the “**Termination Provisions**”).

Although the Purchase Agreement provides that we may sell up to an aggregate of \$25.0 million of our shares of our Common Stock to Chardan, only 2,000,000 shares of our Common Stock are being registered for resale under the registration statement that includes this prospectus. If it becomes necessary for us to issue and sell to the Selling Shareholder under the Purchase Agreement more shares than are being registered for resale under this prospectus in order to receive aggregate gross proceeds equal to \$25.0 million under the Purchase Agreement, we must first file with the SEC one or more additional registration statements to register under the Securities Act the resale by the Selling Shareholder of any such additional shares of our Common Stock we wish to sell from time to time under the Purchase Agreement, which the SEC must declare effective, in each case, before we may elect to sell any additional shares of our Common Stock to the Selling Shareholder under the Purchase Agreement. Under applicable Nasdaq rules, we obtained stockholder approval on September 12, 2024 at our 2024 Annual Meeting of Stockholders to issue to Chardan more than 20% of the total number of shares of our Common Stock that were outstanding immediately prior to the execution of the Purchase Agreement at a price per share (rounded to the nearest tenth of a cent) equal to the quotient obtained by dividing (i) the aggregate gross purchase price paid by Chardan for all shares purchased pursuant to the Purchase Agreement with any offset necessary for compliance with the rules of the Nasdaq Capital Market, by (ii) the aggregate number of shares issued pursuant to the Purchase Agreement (the “**Average Price**”) less than a price per share equal to the sum of (i) the lower of (a) the Nasdaq official closing price of the Common Stock on the Nasdaq Capital Market on the date of the

Purchase Agreement and (b) the average Nasdaq official closing price of the Common Stock on the Nasdaq Capital Market for the five (5) consecutive trading days ending on the date of the Purchase Agreement, and (ii) \$4.1792 (as adjusted for the 2024 Reverse Stock Split) (subject to further adjustment for any reorganization, recapitalization, non-cash dividend, stock split, reverse stock split or other similar transaction that occurs on or after the date of the Purchase Agreement) (the “**Base Price**”).

Chardan is not obligated to buy any Common Stock under the Purchase Agreement if such shares, when aggregated with all other Common Stock then beneficially owned by Chardan and its affiliates (as calculated pursuant to Section 13(d) of the Exchange Act and Rule 13d-3 promulgated thereunder), would result in Chardan beneficially owning Common Stock in excess of 4.99% of our outstanding voting power or shares of Common Stock (the “**Beneficial Ownership Limitation**”).

The Purchase Agreement and the registration rights agreement, dated as of May 2, 2024, by and between the Company and Chardan, and entered into in connection with the Purchase Agreement (the “**Chardan Registration Rights Agreement**”), contain customary registration rights, representations, warranties, conditions and indemnification obligations by each party. The representations, warranties and covenants contained in such agreements were made only for purposes of such agreements and as of specific dates, were solely for the benefit of the parties to such agreements and are subject to certain important limitations.

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VWAP Purchase and Intraday VWAP Purchases of Shares of Common Stock Under the Purchase Agreement

From and after the Commencement Date, we have the right, at any time we do not have material non-public information, but not the obligation, from time to time at our sole discretion, until the earliest to occur of the Termination Provisions, to direct Chardan to purchase an amount of shares of our Common Stock equal to the applicable VWAP Purchase Share Amount, at the applicable VWAP Purchase Price (as defined herein) therefor on such VWAP Purchase Date (as defined in the Purchase Agreement) in accordance with the Purchase Agreement (each such purchase, a “**VWAP Purchase**”) by delivering written notice to Chardan (such notice, a “**VWAP Purchase Notice**”) on any trading day, so long as all shares of Common Stock subject to all prior VWAP Purchases by Chardan have been delivered to Chardan as required by the Purchase Agreement.

In addition to the regular VWAP Purchases described above, from and after the Commencement Date, we will also have the right, at any time we do not have material non-public information, but not the obligation, from time to time at our sole discretion, until the earliest to occur of the Termination Provisions, to offer to Chardan the right to or, in certain circumstances, to direct Chardan, to purchase, on any trading day we select as the Purchase Date (including the same Purchase Date on which an earlier regular VWAP Purchase was effected by us (as applicable), although we are not required to effect an earlier regular VWAP Purchase on such Purchase Date in order to effect an Intraday VWAP Purchase on such Purchase Date), up to an amount of shares of our Common Stock equal to the applicable Intraday VWAP Purchase Share Amount (as defined in the Purchase Agreement) at the applicable VWAP Purchase Price therefor on such VWAP Purchase Date in accordance with the Purchase Agreement (each such purchase, an “**Intraday VWAP Purchase**”) by delivering a written notice to Chardan (each such notice, an “**Intraday VWAP Purchase Notice**”) to Chardan prior to 3:00 p.m., New York City time, on any trading day.

We may, in our sole discretion, timely deliver one Intraday VWAP Purchase Notice to Chardan on a single Purchase Date to effect an Intraday VWAP Purchase on such same Purchase Date, so long as all shares of Common Stock subject to all prior VWAP Purchases and all prior Intraday VWAP Purchases effected by us under the Purchase Agreement have been received by Chardan prior to the time we deliver to Chardan a new Intraday VWAP Purchase Notice to effect an Intraday VWAP Purchase on the same Purchase Date as a regular VWAP Purchase. The terms and limitations that will apply to each Intraday VWAP Purchase effected on the same Purchase Date will be the same as those applicable to any earlier regular VWAP Purchase (as applicable) effected on the same Purchase Date as such Intraday VWAP Purchase, and the per share purchase price for the shares of Common Stock that we elect to sell to Chardan in each Intraday VWAP Purchase effected on the same Purchase Date as an earlier regular VWAP Purchase (as applicable) effected on such Purchase Date will be calculated in the same manner as in the case of such earlier regular VWAP Purchase (as applicable) effected on the same Purchase Date as such Intraday VWAP Purchase, with the exception that the Intraday VWAP Purchase Period for each Intraday VWAP Purchase will begin and end at different times (and may vary in duration) during the regular trading session on such Purchase Date, in each case as determined in accordance with the Purchase Agreement.

The maximum number of shares of Common Stock that Chardan is required to purchase on any one trading day pursuant to a VWAP Purchase Notice and an Intraday VWAP Purchase Notice, as applicable, under the Purchase Agreement, is equal to the lesser of:

- a number of shares of Common Stock which, when aggregated with all other shares of Common Stock then beneficially owned by Chardan and its affiliates (as calculated pursuant to Section 13(d) of the Exchange Act and Rule 13d-3 promulgated thereunder), would result in the beneficial ownership by Chardan of more than the Beneficial Ownership Limitation; and
- a number of shares of Common Stock which would result in the total aggregate VWAP Purchase Price to be paid by Chardan in any VWAP Purchase, together with, if applicable, any Intraday VWAP Purchase, made on one Purchase Date, exceeding \$5,000,000; and
- a number of shares of Common Stock equal to (a) twenty percent (20%) multiplied by (b) the total number (or volume) of shares of Common Stock traded on The Nasdaq Capital Market (or successor Principal Market) during the applicable VWAP Purchase Period or Intraday VWAP Purchase Period (as applicable) on the applicable VWAP Purchase Date for such VWAP Purchase or Intraday VWAP Purchase; and
- the VWAP Purchase Share Amount (for a VWAP Purchase) or the Intraday VWAP Purchase Share Amount (for an Intraday VWAP Purchase).

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The per share purchase price for the Common Stock that we elect to sell to Chardan in a VWAP Purchase or Intraday VWAP Purchase pursuant to the Purchase Agreement, if any, will be equal to ninety-six percent (96%) of the VWAP on such VWAP Purchase Date for such VWAP Purchase or Intraday VWAP Purchase (such price, the “**VWAP Purchase Price**”), subject to certain adjustments.

We define “VWAP” as, for the Common Stock for a specified period, the dollar volume-weighted average price for the Common Stock on the Principal Market, for such period, as reported by Bloomberg through its “VWAP” function. All such determinations shall be appropriately adjusted for any sales of shares of Common Stock through certain block transactions, any reorganization, non-cash dividend, stock split, reverse stock split, stock combination, recapitalization or other similar transaction during such period. There is no upper limit on the price per share that Chardan could be obligated to pay for Common Stock we elect to sell to Chardan in any VWAP Purchase or Intraday VWAP Purchase under the Purchase Agreement.

At or prior to 5:30 p.m., New York City time, on the VWAP Purchase Date for each VWAP Purchase and each Intraday VWAP Purchase, if applicable, Chardan will provide us and the Transfer Agent with a written confirmation for such VWAP Purchase or Intraday VWAP Purchase setting forth, among other things, the applicable VWAP Purchase Price for such trading day, the total number of shares of Common Stock being purchased by Chardan in such VWAP Purchase or Intraday VWAP Purchase, the total aggregate VWAP Purchase Price to be paid by Chardan for such VWAP Purchase or Intraday VWAP Purchase, the VWAP Purchase Period and (if applicable) the Intraday VWAP Purchase Period, and, if Chardan is purchasing a number of shares of Common Stock less than the VWAP Purchase Share Amount or Intraday VWAP Purchase Share Amount, Chardan’s calculation of the VWAP Purchase Commitment Amount (as defined in the Purchase Agreement).

The Common Stock purchased by Chardan in an applicable VWAP Purchase or Intraday VWAP Purchase shall be delivered to Chardan not later than 1:00 p.m., New York City time, on the trading day immediately following the applicable VWAP Purchase Date for such VWAP Purchase or Intraday VWAP Purchase (the “**VWAP Purchase Share Delivery Date**”). The payment for, against delivery of, Common Stock purchased by Chardan in a VWAP Purchase or Intraday VWAP Purchase under the Purchase Agreement

is required to be fully settled not later than 5:00 p.m., New York City time, on the trading day immediately following the applicable VWAP Purchase Share Delivery Date for such VWAP Purchase or Intraday VWAP Purchase, as set forth in the Purchase Agreement.

Conditions Precedent to Commencement and Each VWAP Purchase and Intraday VWAP Purchase

Our right to commence delivering VWAP Purchase Notices and Intraday VWAP Purchase Notices under the Purchase Agreement and Chardan's obligation to accept VWAP Purchase Notices and Intraday VWAP Purchase Notices that are timely delivered by us under the Purchase Agreement and to purchase shares of our Common Stock in VWAP Purchases and Intraday VWAP Purchases under the Purchase Agreement, are subject to the initial satisfaction, at the Commencement Date, of the conditions precedent thereto set forth in the Purchase Agreement, which conditions include, among others, the following:

- the accuracy in all material respects of the representations and warranties of the Company included in the Purchase Agreement;
- us having performed, satisfied and complied in all material respects with all covenants, agreements and conditions required by the Purchase Agreement and the Chardan Registration Rights Agreement to be performed, satisfied or complied with by us;
- the registration statement that includes this prospectus having been declared effective under the Securities Act, and Chardan being able to utilize this prospectus to resell all of the Common Stock included in this prospectus;

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- the absence of any material misstatement or omission in the registration statement that includes this prospectus;
- this prospectus, the Current Report, and all reports, schedules, registrations, forms, statements, information and other documents required to have been filed by the Company with the SEC pursuant to the reporting requirements of the Exchange Act having been filed with the SEC;
- the Common Stock not having been suspended by the SEC, the Principal Market or FINRA and there not having been imposed any suspension of, or restriction on, accepting additional deposits of Common Stock by the depository;
- no condition, occurrence, state of facts or event constituting a Material Adverse Effect (as such term is defined in the Purchase Agreement) shall have occurred and be continuing;
- shares of Common Stock issuable pursuant to the Facility were submitted for listing on Nasdaq;
- customary compliance with laws and bankruptcy-related conditions; and
- the receipt by Chardan of customary legal opinions, auditor comfort letters and bring-down legal opinions, as required under the Purchase Agreement.

Termination of the Purchase Agreement

Unless earlier terminated as provided in the Purchase Agreement, the Purchase Agreement will terminate automatically on the earliest to occur of:

- the 36-month anniversary of the effective date of the registration statement of which this prospectus forms a part;
- the date on which Chardan has purchased the Total Commitment pursuant to the Purchase Agreement;
- the date on which our Common Stock fails to be listed or quoted on The Nasdaq Capital Market or any successor market; and
- the date on which, pursuant to or within the meaning of any bankruptcy law, we commence a voluntary case or any person or entity commences a proceeding against us, a custodian is appointed for us or for all or substantially all of our property, or we make a general assignment for the benefit of our creditors.

We have the right to terminate the Purchase Agreement at any time after Commencement, at no cost or penalty, upon ten (10) trading days' prior written notice to Chardan. We and Chardan may also terminate the Purchase Agreement at any time by mutual written consent. Chardan also has the right to terminate the Purchase Agreement upon ten (10) trading days' prior written notice to us, but only upon the occurrence of certain customary events as listed in the Purchase Agreement. No termination of the Purchase Agreement by us or by Chardan will become effective prior to the second trading day immediately following the date on which any pending (or not fully settled) VWAP Purchase or Intraday VWAP Purchase has been fully settled in accordance with the terms and conditions of the Purchase Agreement, and will not affect any of our respective rights and obligations under the Purchase Agreement with respect to any pending (or not fully settled) VWAP Purchase or Intraday VWAP Purchase, and both we and Chardan have agreed to complete our respective obligations with respect to any such pending (or not fully settled) VWAP Purchase or Intraday VWAP Purchase under the Purchase Agreement. Furthermore, no termination of the Purchase Agreement will affect our or Chardan's respective rights or obligations under the Chardan Registration Rights Agreement, which will survive any termination of the Purchase Agreement.

No Short-Selling or Hedging by Chardan

Chardan has agreed that neither it nor any entity managed or controlled by it, will engage in, directly or indirectly, any (i) "short sale" (as such term is defined in Rule 200 of Regulation SHO of the Exchange Act) of the Common Stock or (ii) hedging transaction, which, with respect to items (i) and (ii), establishes a net short position with respect to the Common Stock, during the term of the Purchase Agreement.

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Effect of Sales of our Common Stock under the Purchase Agreement on our Stockholders

The Common Stock being registered for resale in this offering may be issued and sold by us to Chardan from time to time at our discretion over a period until the earliest to occur of the Termination Provisions. The resale by Chardan of a significant quantity of shares registered for resale in this offering at any given time, or the perception that these sales may occur, could cause the market price of our Common Stock to decline and to be highly volatile. Sales of our Common Stock, if any, to Chardan under the Purchase Agreement will be determined by us in our sole discretion, subject to the satisfaction of certain conditions in the Purchase Agreement, and will depend upon market conditions and other factors. We may ultimately decide to sell to Chardan all, some or none of the Common Stock that may be available for us to sell to Chardan pursuant to the Purchase Agreement. If we elect to sell Common Stock to Chardan pursuant to the Purchase Agreement, after Chardan has acquired such shares, Chardan may resell all, some or none of such Common Stock at any time or from time to time in its discretion and at different prices. As a result, investors who purchase Common Stock from Chardan in this offering at different times will likely pay different prices for those shares of Common Stock, and so may experience different levels of dilution and in some cases substantial dilution and different outcomes in their investment results. See "*Risk Factors — Risks Related to the Facility — Investors who buy Common Stock from Chardan at different times will likely pay different prices.*"

Investors may experience a decline in the value of the Common Stock they purchase from Chardan in this offering as a result of future sales made by us to Chardan at prices lower than the prices such investors paid for their shares in this offering. In addition, if we sell a substantial number of shares of Common Stock to Chardan under the Purchase Agreement, or if investors expect that we will do so, the actual sales of Common Stock or the mere existence of our arrangement with Chardan may make it more difficult for us to sell equity or equity-related securities in the future at a time and at a price that we might otherwise wish to effect such sales.

Because the purchase price per share to be paid by Chardan for the Common Stock that we may elect to sell to Chardan under the Purchase Agreement, if any, will fluctuate based on the market prices of our Common Stock during the applicable period for each VWAP Purchase or Intraday VWAP Purchase made pursuant to the Purchase Agreement, if any, as of the date of this prospectus it is not possible for us to predict the number of shares of Common Stock that we will sell to Chardan under the Purchase Agreement, the actual purchase price per share to be paid by Chardan for those shares of Common Stock, or the actual gross proceeds to be raised by us from those sales, if any. As of January 29, 2025, there were 3,050,105 shares of our Common Stock outstanding. As of January 29, 2025, 62,976 shares have been issued pursuant to the Purchase Agreement for aggregate net proceeds to us of \$0.2 million. Assuming all of the 2,000,000 shares of our Common Stock offered for resale by Chardan under this prospectus were issued and outstanding as of January 29, 2025, such shares would represent approximately 40% of total number of shares of our Common Stock outstanding after such issuance. The actual number of shares of our Common Stock issuable will vary depending on the then current market price of shares of our Common Stock sold to Chardan in this offering.

The number of shares of Common Stock ultimately offered for sale by Chardan for resale under this prospectus is dependent upon the number of shares of Common Stock, if any, we ultimately sell to Chardan under the Purchase Agreement. Further, if and when we elect to sell shares of Common Stock to Chardan pursuant to the Purchase Agreement, after Chardan has acquired such shares, Chardan may resell all, some or none of such shares of Common Stock at any time or from time to time in its discretion and at different prices.

The issuance of our shares of Common Stock to Chardan pursuant to the Purchase Agreement will not affect the rights or privileges of our existing stockholders, except that the economic and voting interests of each of our existing stockholders will be diluted. Although the number of shares of Common Stock that our existing stockholders own will not decrease, the shares of Common Stock owned by our existing stockholders will represent a smaller percentage of our total outstanding shares of Common Stock after any such issuance.

The following table sets forth information at varying purchase prices assuming we sell all 2,000,000 Purchase Shares being registered for resale under this prospectus to Chardan under the Purchase Agreement:

Assumed Trading Price of Common Stock		Purchase Price for Common Stock Sold Under the Facility (1)(3)	
\$	1.50	\$	2,880,000
\$	1.55	\$	2,976,000
\$	1.60	\$	3,072,000
\$	1.69(2)		3,244,800
\$	1.70	\$	3,264,000

- (1) Purchase prices represent the illustrative aggregate purchase price to be received from the sale of all of the shares of Common Stock issued and sold to Chardan under the Facility, multiplied by the VWAP Purchase Price (or Intraday VWAP Purchase Price), assuming for illustrative purposes that the VWAP Purchase Price (or Intraday VWAP Purchase Price) is equal to 96% of the assumed trading price of Common Stock listed in the first column.
- (2) Represents the closing price of our Common Stock on The Nasdaq Capital Market on January 29, 2025.
- (3) As of January 29, 2025, 62,976 shares have been issued pursuant to the Purchase Agreement for aggregate net proceeds to us of \$0.2 million. The number of shares of our Common Stock offered by this prospectus will likely not cover all the shares of our Common Stock we ultimately may sell to Chardan under the Purchase Agreement. We have included in this column only those shares of our Common Stock being offered for resale by Chardan under this prospectus, without regard to the Beneficial Ownership Limitation.

USE OF PROCEEDS

All of the shares of our Common Stock offered by Chardan will be solely for Chardan's account. We will not receive any of the proceeds from these sales. We may receive up to \$25.0 million in aggregate gross proceeds from Chardan under the Purchase Agreement in connection with sales of our shares of our Common Stock to Chardan pursuant to the Purchase Agreement from time to time after the date of this prospectus. However, the actual proceeds we receive may be less than this amount (before being reduced for the discount to Chardan) depending on the number of share of our shares of our Common Stock sold and the price at which the shares of our Common Stock are sold.

We intend to use any net proceeds from any sales of shares of our Common Stock to Chardan under the Facility, together with our existing cash and cash equivalents, for research and development, including clinical trials, working capital, the repayment of all or a portion of our liabilities, and general corporate purposes. We will have broad discretion in the way we use these proceeds. See "*Risk Factors — Risks Related to the Facility — We may use proceeds from sales of our Common Stock made pursuant to the Purchase Agreement in ways with which you may not agree or in ways which may not yield a significant return.*"

Chardan will pay any underwriting fees, discounts, selling commissions, stock transfer taxes and certain legal expenses incurred by Chardan in disposing of its shares of Common Stock, and we will bear all other costs, fees and expenses incurred in effecting the registration of such securities covered by this prospectus, including, without limitation, all registration and filing fees, Nasdaq listing fees and fees and expenses of our counsel and our independent registered public accountants.

DETERMINATION OF OFFERING PRICE

We cannot currently determine the price or prices at which the shares of our Common Stock may be sold by Chardan under this prospectus. Our Common Stock is listed on The Nasdaq Capital Market under the symbol "SONN."

SELLING SECURITYHOLDER

This prospectus relates to the possible offer and resale from time to time by Chardan of up to 2,000,000 shares of our Common Stock that have been or may be issued by us to Chardan pursuant to the Purchase Agreement upon the terms and subject to the conditions and limitations of the Purchase Agreement. For additional information regarding the issuance of the shares of Common Stock to be offered by Chardan included in this prospectus, see the section titled "*Committed Equity Financing.*" We are registering the

shares of Common Stock included in this prospectus pursuant to the provisions of the Chardan Registration Rights Agreement in order to permit Chardan to offer the shares of Common Stock for resale from time to time. Except for the transactions contemplated by the Purchase Agreement and as set forth in the section titled “*Plan of Distribution (Conflicts of Interest)*” in this prospectus, Chardan has not had any material relationship with us or any of our affiliates within the past three years.

The following table is prepared based on information provided to us by Chardan. It sets forth the name and address of Chardan, the aggregate number of shares of our Common Stock that Chardan may offer pursuant to this prospectus, and the beneficial ownership of Chardan both before and after the offering. We have based percentage ownership after this offering on 3,050,105 shares of Common Stock outstanding as of January 29, 2025.

We cannot advise you as to whether Chardan will in fact sell any or all of such shares of our Common Stock or how long Chardan will hold any shares of our Common Stock before selling them. In addition, Chardan may sell, transfer or otherwise dispose of, at any time and from time to time, the shares of our Common Stock in transactions exempt from the registration requirements of the Securities Act after the date of this prospectus. Because the purchase price of the shares of our Common Stock that may be issued under the Purchase Agreement is determined on each purchase date with respect to each purchase, the number of shares of our Common Stock that we may actually sell to Chardan under the Purchase Agreement may be fewer than or more than the number of shares of our Common Stock being offered by this prospectus. For purposes of this table, we have assumed that Chardan will have sold all of the securities covered by this prospectus upon the completion of the offering. Any changed or new information given to us by Chardan, including regarding the identity of, and the securities held by, Chardan will be set forth in a prospectus supplement or amendments to the registration statement of which this prospectus is a part, if and when necessary.

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Please see the section entitled “*Plan of Distribution (Conflicts of Interest)*” for further information regarding Chardan’s method of distributing these securities.

Name of Selling Securityholder	Common Stock Beneficially Owned Prior to this Offering		Maximum Number of Common Stock to be Offered Pursuant to this Prospectus	Common Stock Owned After this Offering ⁽²⁾	
	Number of Shares	Percent		Number of Shares	Percent
Chardan Capital Markets LLC ⁽¹⁾	0	0.00%	2,000,000	—	—

(1) In accordance with Rule 13d-3(d) under the Exchange Act, we have excluded from the number of shares beneficially owned prior to the offering all of the shares that Chardan may be required to purchase upon the terms and subject to the conditions and limitations of the Purchase Agreement, because the issuance of such shares of Common Stock is solely at our discretion and is subject to conditions and limitations contained in the Purchase Agreement, the satisfaction of which are entirely outside of Chardan’s control, including the registration statement that includes this prospectus becoming and remaining effective. Furthermore, the Purchase Agreement prohibits us from issuing and selling any shares of Common Stock to Chardan to the extent such shares of Common Stock, when aggregated with all other shares of our Common Stock then beneficially owned by Chardan, would cause Chardan’s beneficial ownership of our Common Stock to exceed 4.99%. The business address of Chardan is 1 Pennsylvania Plaza, Suite 4800, New York, New York 10119. Chardan is a broker-dealer and a member of the Financial Industry Regulatory Authority, Inc. Mr. Kerry Popper, Mr. Steven Urbach and Mr. Jonas Grossman, are Chardan’s Chairman, Chief Executive Officer and President, respectively, and are each Members and Managers of Chardan Securities LLC, which holds a controlling interest in Chardan. The foregoing should not be construed in and of itself as an admission by any of Mr. Popper, Mr. Urbach or Mr. Grossman as to beneficial ownership of the securities beneficially owned by Chardan. In our public underwritten offerings in November 2024 (the “**November 2024 Offering**”), in October 2023 (the “**October 2023 Offering**”), and in February 2023 (the “**February 2023 Offering**”), Chardan served as an underwriter, and was compensated as such in that capacity. In our registered direct and concurrent private placement offerings in December 2024 (the “**December 2024 Offering**”) and in June 2023 (the “**June 2023 Offering**”), Chardan served as a placement agent, and was compensated as such in that capacity.

(2) Assumes the sale of all shares being offered pursuant to this prospectus.

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DESCRIPTION OF CAPITAL STOCK

The following is a summary of information concerning our capital stock and does not purport to be complete. The summary is subject to, and qualified in its entirety by reference to, our certificate of incorporation, as amended (the “**Certificate of Incorporation**”), our amended and restated bylaws (the “**Bylaws**”) and the Delaware General Corporation Law (the “**DGCL**”). You are urged to read our Certificate of Incorporation, Bylaws and the applicable provisions of the DGCL for additional information.

General

Our authorized capital stock consists of:

- 125,000,000 shares of Common Stock, par value \$0.0001 per share; and
- 5,000,000 shares of preferred stock, par value \$0.0001 per share, of which, as of the date of this prospectus, none of which shares have been designated.

As of close of business on January 29, 2025, 3,050,105 shares of Common Stock were issued and outstanding and no shares of preferred stock were issued and outstanding.

The additional shares of our authorized stock available for issuance may be issued at times and under circumstances so as to have a dilutive effect on earnings per share and on the equity ownership of the holders of our Common Stock. The ability of our board of directors to issue additional shares of stock could enhance the board’s ability to negotiate on behalf of the stockholders in a takeover situation but could also be used by the board to make a change-in-control more difficult, thereby denying stockholders the potential to sell their shares at a premium and entrenching current management. The following description is a summary of the material provisions of our capital stock. You should refer to our Certificate of Incorporation, as amended (the “**Certificate of Incorporation**”) and Amended and Restated Bylaws (the “**Bylaws**”), both of which are on file with the SEC as exhibits to previous SEC filings, for additional information. The summary below is qualified by provisions of applicable law.

Common Stock

Holders of our Common Stock are each entitled to cast one vote for each share held of record on all matters presented to stockholders. Cumulative voting is not allowed; the holders of a majority of our outstanding shares of Common Stock may elect all directors. Holders of our Common Stock are entitled to receive such dividends as may be declared by our board of directors legally available and, in the event of liquidation, to share pro rata in any distribution of our assets after payment of liabilities. Our directors are not obligated to declare a dividend. It is not anticipated that we will pay dividends in the foreseeable future. Holders of our do not have preemptive rights to subscribe to any additional shares we may issue in the future. There are no conversion, redemption, sinking fund or similar provisions regarding the Common Stock. All outstanding shares of Common Stock are fully paid and nonassessable.

The rights, preferences and privileges of holders of Common Stock are subject to the rights of the holders of any outstanding shares of preferred stock.

Preferred Stock

We are authorized to issue up to 5,000,000 shares of preferred stock, all of which are undesignated. Our board of directors has the authority to issue preferred stock in one or more classes or series and to fix the designations, powers, preferences and rights, and the qualifications, limitations or restrictions thereof, including dividend rights, conversion right, voting rights, terms of redemption, liquidation preferences and the number of shares constituting any class or series, without further vote or action by the stockholders. Although we have no present plans to issue any other shares of preferred stock, the issuance of shares of preferred stock, or the issuance of rights to purchase such shares, could decrease the amount of earnings and assets available for distribution to the holders of Common Stock, could adversely affect the rights and powers, including voting rights, of the Common Stock, and could have the effect of delaying, deterring or preventing a change of control of us or an unsolicited acquisition proposal. The preferred stock may provide for an adjustment of the conversion price in the event of an issuance or deemed issuance at a price less than the applicable conversion price, subject to certain exceptions.

If we offer a specific series of preferred stock under this prospectus, we will describe the terms of the preferred stock in the prospectus supplement for such offering and will file a copy of the certificate establishing the terms of the preferred stock with the SEC. To the extent required, this description will include:

- the title and stated value;

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- the number of shares offered, the liquidation preference per share and the purchase price;
- the dividend rate(s), period(s) and/or payment date(s), or method(s) of calculation for such dividends;
- whether dividends will be cumulative or non-cumulative and, if cumulative, the date from which dividends will accumulate;
- the procedures for any auction and remarketing, if any;
- the provisions for a sinking fund, if any;
- the provisions for redemption, if applicable;
- any listing of the preferred stock on any securities exchange or market;
- whether the preferred stock will be convertible into our Common Stock, and, if applicable, the conversion price (or how it will be calculated) and conversion period;
- whether the preferred stock will be exchangeable into debt securities, and, if applicable, the exchange price (or how it will be calculated) and exchange period;
- voting rights, if any, of the preferred stock;
- a discussion of any material and/or special U.S. federal income tax considerations applicable to the preferred stock;
- the relative ranking and preferences of the preferred stock as to dividend rights and rights upon liquidation, dissolution or winding up of our affairs; and
- any material limitations on issuance of any class or series of preferred stock ranking senior to or on a parity with the series of preferred stock as to dividend rights and rights upon liquidation, dissolution or winding up of our affairs.

Anti-takeover Effects of Delaware Law and our Certificate of Incorporation and Bylaws

Our Certificate of Incorporation and Bylaws contain provisions that could have the effect of discouraging potential acquisition proposals or tender offers or delaying or preventing a change of control. These provisions are as follows:

- they provide that special meetings of stockholders may be called by the President, the board of directors or at the request by stockholders of record owning at least thirty-three and one-third percent (33 1/3%) of the issued and outstanding voting shares of our Common Stock;
- they do not include a provision for cumulative voting in the election of directors. Under cumulative voting, a minority stockholder holding a sufficient number of shares may be able to ensure the election of one or more directors. The absence of cumulative voting may have the effect of limiting the ability of minority stockholders to effect changes in our board of directors; and

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- they allow us to issue, without stockholder approval, up to 5,000,000 shares of preferred stock that could adversely affect the rights and powers of the holders of our Common Stock.

We are subject to the provisions of Section 203 of the Delaware General Corporation Law, an anti-takeover law. Subject to certain exceptions, the statute prohibits a publicly held Delaware corporation from engaging in a “business combination” with an “interested stockholder” for a period of three years after the date of the transaction in which the person became an interested stockholder unless:

- prior to such date, the board of directors of the corporation approved either the business combination or the transaction which resulted in the stockholder becoming an interested stockholder;
- upon consummation of the transaction which resulted in the stockholder becoming an interested stockholder, the interested stockholder owned at least eighty-five percent (85%) of the voting stock of the corporation outstanding at the time the transaction commenced, excluding for purposes of determining the number of shares outstanding those shares owned (1) by persons who are directors and also officers and (2) by employee stock plans in which employee participants do not have the right to determine confidentially whether shares held subject to the plan will be tendered in a tender or exchange offer; or
- on or after such date, the business combination is approved by the board of directors and authorized at an annual or special meeting of stockholders, and not by written consent, by the affirmative vote of at least sixty-six and two-thirds percent (66 2/3%) of the outstanding voting stock that is not owned by the interested stockholder.

Generally, for purposes of Section 203, a “business combination” includes a merger, asset or stock sale, or other transaction resulting in a financial benefit to the interested stockholder. An “interested stockholder” is a person who, together with affiliates and associates, owns or, within three (3) years prior to the determination of interested

stockholder status, owned fifteen percent (15%) or more of a corporation's outstanding voting securities.

Potential Effects of Authorized but Unissued Stock

We have shares of Common Stock and preferred stock available for future issuance without stockholder approval. We may utilize these additional shares for a variety of corporate purposes, including future public offerings to raise additional capital, to facilitate corporate acquisitions or payment as a dividend on the capital stock.

The existence of unissued and unreserved Common Stock and preferred stock may enable our board of directors to issue shares to persons friendly to current management or to issue preferred stock with terms that could render more difficult or discourage a third-party attempt to obtain control of us by means of a merger, tender offer, proxy contest or otherwise, thereby protecting the continuity of our management. In addition, the board of directors has the discretion to determine designations, rights, preferences, privileges and restrictions, including voting rights, dividend rights, conversion rights, redemption privileges and liquidation preferences of each series of preferred stock, all to the fullest extent permissible under the DGCL and subject to any limitations set forth in our Certificate of Incorporation. The purpose of authorizing the board of directors to issue preferred stock and to determine the rights and preferences applicable to such preferred stock is to eliminate delays associated with a stockholder vote on specific issuances. The issuance of preferred stock, while providing desirable flexibility in connection with possible financings, acquisitions and other corporate purposes, could have the effect of making it more difficult for a third-party to acquire, or could discourage a third-party from acquiring, a majority of our outstanding voting stock.

Transfer Agent and Registrar

The transfer agent and registrar for our Common Stock is Securities Transfer Corporation. The transfer agent address is Securities Transfer Corporation, 2901 N Dallas Parkway, Suite 380, Plano, TX 75093, (469) 633-0101. The transfer agent and registrar for any series or class of preferred stock will be set forth in each applicable prospectus supplement.

PLAN OF DISTRIBUTION (CONFLICTS OF INTEREST)

We are registering the resale by Chardan of up to 2,000,000 shares of our Common Stock. Although the Purchase Agreement provides that we may sell up to an aggregate of \$25.0 million of shares of our Common Stock to the Selling Securityholder, only 2,000,000 shares of our Common Stock issuable under the Facility are being registered for resale under the registration statement that includes this prospectus. The actual number of shares of our Common Stock issuable will vary depending on the then current market price of shares of our Common Stock sold to Chardan in this offering.

We will not receive any of the proceeds from the sale of the securities by Chardan. However, we may receive up to \$25.0 million in aggregate gross proceeds from Chardan under the Purchase Agreement in connection with sales of shares of our Common Stock to Chardan pursuant to the Purchase Agreement after the date of this prospectus. The aggregate proceeds to Chardan will be the purchase price of the securities less any discounts and commissions borne by Chardan.

Once issued and upon effectiveness of the registration statement of which this prospectus forms a part, the securities beneficially owned by Chardan covered by this prospectus may be offered and sold from time to time by Chardan, including any donees, pledgees, transferees or other successors in interest selling securities received after the date of this prospectus from Chardan as a gift, pledge, partnership distribution or other transfer. Chardan will act independently of us in making decisions with respect to the timing, manner and size of each sale. Such sales may be made on one or more exchanges or in the over-the-counter market or otherwise, at prices and under terms then prevailing or at prices related to the then current market price or in negotiated transactions. Chardan reserves the right to accept and, together with its respective agents, to reject, any proposed purchase of securities to be made directly or through agents. Chardan and any of its permitted transferees may sell their securities offered by this prospectus on any stock exchange, market or trading facility on which the securities are traded or in private transactions.

Subject to any limitations set forth in any applicable agreement that provides for registration rights, Chardan may use any one or more of the following methods when selling the securities offered by this prospectus:

- purchases by a broker-dealer as principal and resale by such broker-dealer for its own account pursuant to this prospectus;
- ordinary brokerage transactions and transactions in which the broker solicits purchasers;
- one or more underwritten offerings;
- block trades in which the broker-dealer so engaged will attempt to sell the securities as agent, but may position and resell a portion of the block as principal to facilitate the transaction;
- an exchange distribution in accordance with the rules of the applicable exchange;
- in market transactions, including transactions on a national securities exchange or quotations service or over-the-counter market;
- distributions to their members, partners or stockholders;
- agreements with broker-dealers to sell a specified number of the securities at a stipulated price per share;
- in "at the market" offerings, as defined in Rule 415 under the Securities Act, at negotiated prices, at prices prevailing at the time of sale or at prices related to such prevailing market prices, including sales made directly on a national securities exchange or sales made through a market maker other than on an exchange or other similar offerings through sales agents;
- directly to purchasers, including through a specific bidding, auction or other process or in privately negotiated transactions;

- through the writing or settlement of options or other hedging transactions, whether through an options exchange or otherwise;
- through a combination of any of the above methods of sale; or
- any other method permitted pursuant to applicable law.

We are required to pay all fees and expenses incident to the registration of shares of our Common Stock to be offered and sold pursuant to this prospectus.

Chardan is a selling securityholder and is an "underwriter" within the meaning of Section 2(a)(11) of the Securities Act. Chardan is a registered broker-dealer and FINRA

member and has informed us that it presently anticipates effectuating resales, if any, of our common shares that it may acquire from us pursuant to the Purchase Agreement, and that it may also engage one or more other registered broker-dealers to effectuate resales, if any, of such shares that it may acquire from us. Such sales will be made at prices and at terms then prevailing or at prices related to the then current market price. Each such registered broker-dealer will be an underwriter within the meaning of Section 2(a)(11) of the Securities Act. Chardan has informed us that each such broker-dealer (excluding Chardan), may receive commissions from Chardan for executing such sales for Chardan and, if so, such commissions will not exceed customary brokerage commissions. In our November 2024 Offering, our October 2023 Offering and our February 2023 Offering, Chardan served as an underwriter, and was compensated as such in that capacity. In our December 2024 Offering and our June 2023 Offering, Chardan served as a placement agent, and was compensated as such in that capacity.

The purchase price of the shares of our Common Stock that we elect to sell to Chardan pursuant to the Purchase Agreement will be determined by reference to the VWAP of the Common Stock during the applicable purchase date on which we have timely delivered written notice to Chardan directing it to purchase shares of our Common Stock under the Purchase Agreement, less a fixed 4.0% discount. This 4.0% discount will be deemed to be underwriting compensation in connection with sales of the shares of our Common Stock by Chardan to the public.

As consideration for its irrevocable commitment to, at our request, purchase our shares of Common Stock under the Purchase Agreement, upon the mutual agreement of the parties, we have paid Chardan the Commitment Fee equal to \$100,000 (the “**Commitment Fee**”). In accordance with FINRA Rule 5110, the Commitment Fee will be deemed underwriting compensation in connection with sales of the shares of Common Stock by Chardan to the public. We also paid Chardan the Documentation Fee, consisting of \$25,000 in connection with the preparation of the Purchase Agreement. In accordance with FINRA Rule 5110, the Documentation Fee is a deemed underwriting compensation in connection with sales of shares of Common Stock by Chardan to the public. Further, we agreed to reimburse Chardan for its fees and expenses (including fees and disbursements of its counsel) (i) for initial diligence and documentation related to the Facility in an amount up to \$75,000, provided, however, that any amount of reimbursement exceeding \$75,000 will reduce, on a dollar-for-dollar basis, the **Commitment Fee**, and (ii) up to \$20,000 per fiscal quarter during which the Facility is active and not suspended for its reasonable and documented fees and expenses related to ongoing diligence of the Company except for any quarter in which additional diligence is reasonably required because of a material amendment or restatement to the registration statement, in which such amount shall not exceed \$25,000 per quarter, absent unusual circumstances, provided, that such amount is not to exceed \$300,000 in the aggregate during the term of the Purchase Agreement. Any amounts described in this paragraph that remain due to Chardan within 30 days of the original due date for such expense shall be subject to an increase equal to three percent (3%) on a monthly basis from the original due date for such expense. In accordance with FINRA Rule 5110, these reimbursed fees and expenses are deemed underwriting compensation in connection with sales of shares of Common Stock by Chardan to the public.

The total underwriting compensation to be received in connection with sales of shares of our Common Stock by Chardan to the public, as determined under FINRA Rule 5110, will not exceed eight percent (8%) of the maximum dollar amount of shares of Common Stock to be sold to the public that have been or will be acquired by Chardan under the Facility.

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We also have agreed to indemnify Chardan and certain other persons against certain liabilities in connection with the offering of shares of our Common Stock offered hereby, including liabilities arising under the Securities Act or, if such indemnity is unavailable, to contribute amounts required to be paid in respect of such liabilities. Chardan has agreed to indemnify us against liabilities under the Securities Act that may arise from certain written information furnished to us by Chardan specifically for use in this prospectus or, if such indemnity is unavailable, to contribute amounts required to be paid in respect of such liabilities. Insofar as indemnification for liabilities arising under the Securities Act may be permitted to our directors, officers, and controlling persons, we have been advised that in the opinion of the SEC this indemnification is against public policy as expressed in the Securities Act and is therefore, unenforceable.

Chardan has agreed that neither it nor any entity managed or controlled by it, will engage in, directly or indirectly, any (i) “short sale” (as such term is defined in Rule 200 of Regulation SHO of the Exchange Act) of the Common Stock or (ii) hedging transaction, which, with respect to items (i) and (ii), establishes a net short position with respect to the Common Stock, during the term of the Purchase Agreement.

To the extent required, this prospectus may be amended or supplemented from time to time to describe a specific plan of distribution. In connection with distributions of the shares or otherwise, Chardan may enter into hedging transactions with broker-dealers or other financial institutions, subject to the limitations in the Purchase Agreement. In connection with such transactions, broker-dealers or other financial institutions may engage in short sales of shares of Common Stock in the course of hedging transactions, and broker-dealers or other financial institutions may engage in short sales of shares of Common Stock in the course of hedging the positions they assume with Chardan. Chardan may also sell shares of Common Stock short and redeliver the shares to close out such short positions. Chardan may also enter into option or other transactions with broker-dealers or other financial institutions which require the delivery to such broker-dealer or other financial institution of shares offered by this prospectus, which shares such broker-dealer or other financial institution may resell pursuant to this prospectus (as supplemented or amended to reflect such transaction). Chardan may also pledge shares to a broker-dealer or other financial institution, and, upon a default, such broker-dealer or other financial institution may effect sales of the pledged shares pursuant to this prospectus (as supplemented or amended to reflect such transaction).

Chardan may enter into derivative transactions with third parties, or sell securities not covered by this prospectus to third parties in privately negotiated transactions. If the applicable prospectus supplement indicates, in connection with those derivatives, the third parties may sell securities covered by this prospectus and the applicable prospectus supplement, including in short sale transactions. If so, the third party may use securities pledged by any stockholder or borrowed from any stockholder or others to settle those sales or to close out any related open borrowings of stock, and may use securities received from any Shareholder in settlement of those derivatives to close out any related open borrowings of stock. The third party in such sale transactions will be an underwriter and will be identified in the applicable prospectus supplement (or a post-effective amendment). In addition, any stockholder may otherwise loan or pledge securities to a financial institution or other third party that in turn may sell the securities short using this prospectus. Such financial institution or other third party may transfer its economic short position to investors in our securities or in connection with a concurrent offering of other securities.

In effecting sales, broker-dealers or agents engaged by Chardan may arrange for other broker-dealers to participate. Broker-dealers or agents may receive commissions, discounts or concessions from Chardan in amounts to be negotiated immediately prior to the sale.

In order to comply with the securities laws of certain states, if applicable, the shares must be sold in such jurisdictions only through registered or licensed brokers or dealers. In addition, in certain states the shares may not be sold unless they have been registered or qualified for sale in the applicable state or an exemption from the registration or qualification requirement is available and is complied with.

We have advised Chardan that the anti-manipulation rules of Regulation M under the Exchange Act may apply to sales of shares in the market and to the activities of Chardan and its affiliates. In addition, we will make copies of this prospectus available to Chardan for the purpose of satisfying the prospectus delivery requirements of the Securities Act. Chardan may indemnify any broker-dealer that participates in transactions involving the sale of the shares against certain liabilities, including liabilities arising under the Securities Act.

At the time a particular offer of shares is made, if required, a prospectus supplement will be distributed that will set forth the number of shares being offered and the terms of the offering, including the name of any underwriter, dealer or agent, the purchase price paid by any underwriter, any discount, commission and other item constituting compensation, any discount, commission or concession allowed or reallocated or paid to any dealer, and the proposed selling price to the public.

We know of no existing arrangements between Chardan or any other stockholder, broker, dealer, underwriter or agent relating to the sale or distribution of the shares of Common Stock offered by this prospectus.

Our Common Stock is listed on The Nasdaq Capital Market under the symbol “SONN.”

Conflicts of Interest

Chardan is a member of FINRA and is expected to act as an executing broker for the resale of the shares of Common Stock in this offering. The receipt by Chardan of all the proceeds from resales of shares of Common Stock results in a “conflict of interest” under FINRA Rule 5121. Accordingly, such resales will be conducted in compliance with FINRA Rule 5121. To the extent that the shares of Common Stock do not have a “bona fide public market”, as defined in FINRA Rule 5121, a qualified independent underwriter will participate in the preparation of, and exercise the usual standards of “due diligence” with respect to, the registration statement. LifeSci Capital, LLC has agreed to act as qualified independent underwriter for this offering and will receive a quarterly fee of \$20,000 to be paid on the first business day of each quarter following the effectiveness of this Registration Statement for so long as the Purchase Agreement remains in effect, up to an aggregate amount of \$200,000 for doing so. Pursuant to FINRA Rule 5121, Chardan will not confirm resales of shares of Common Stock to any account over which it exercises discretionary authority without the prior written approval of the customer.

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INFORMATION INCORPORATED BY REFERENCE

The SEC allows us to “incorporate by reference” information into this document, which means that we can disclose important information to you by referring you to another document filed separately with the SEC. The information incorporated by reference is an important part of this prospectus, and information that we file later with the SEC will automatically update and supersede this information.

We incorporate by reference the following documents or information that we have filed with the SEC:

- our Annual Report on [Form 10-K](#) (the “Form 10-K”) for the year ended September 30, 2024, filed with the SEC on December 17, 2024;
- our Current Reports on Form 8-K filed with the SEC on [October 9, 2024](#), [October 17, 2024](#), [November 6, 2024](#), [November 8, 2024](#), [December 4, 2024](#), [December 9, 2024](#), [December 10, 2024](#), [December 17, 2024](#), [January 21, 2025](#) and [January 28, 2025](#) (other than any portions thereof deemed furnished and not filed); and
- the description of Common Stock of the Company contained in our Registration Statement on [Form 8-A](#), filed on June 7, 2012 under Section 12(b) of the Exchange Act including any amendments or reports filed for the purpose of updating such description, including Exhibit 4.8 to the Form 10-K.

All reports and other documents that we file with the SEC under Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act after the date that this registration statement becomes effective and after the date of this prospectus but before the termination of the offering of the securities hereunder will also be considered to be incorporated by reference into this prospectus from the date of the filing of these reports and documents, and will supersede the information herein; provided, however, that all reports, exhibits and other information that we “furnish” to the SEC will not be considered incorporated by reference into this prospectus. We undertake to provide without charge to each person (including any beneficial owner) who receives a copy of this prospectus, upon written or oral request, a copy of all of the preceding documents that are incorporated by reference (other than exhibits, unless the exhibits are specifically incorporated by reference into these documents).

You may request a copy of these filings at no cost, by writing or telephoning us at the following address:

Sonnet BioTherapeutics Holdings, Inc.
Attn: Pankaj Mohan, Ph.D., CEO and Chairman
100 Overlook Center, Suite 102
Princeton, New Jersey 08540
(609) 375-2227

You may also access these filings on our website at www.sonnetbio.com. You should rely only on the information incorporated by reference or provided in this prospectus. We have not authorized anyone else to provide different or additional information on our behalf. An offer of these securities is not being made in any jurisdiction where the offer or sale is not permitted. You should not assume that the information in this prospectus is accurate as of any date other than the date of those respective documents.

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WHERE YOU CAN FIND MORE INFORMATION

This prospectus is part of a registration statement 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. For further information with respect to us and the securities 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. You should rely only on the information contained in this prospectus or incorporated by reference into this prospectus. We have not authorized anyone else to provide you with different information. We are not making an offer of these securities in any jurisdiction where the offer is not permitted. You should assume that the information contained in this prospectus, or any document incorporated by reference in this prospectus, is accurate only as of the date of those respective documents, regardless of the time of delivery of this prospectus or any sale of our securities.

We file annual, quarterly and current reports, proxy statements and other information with the SEC. Our SEC filings are available to the public from commercial document retrieval services and over the Internet at the SEC’s website at <http://www.sec.gov>.

We maintain a website at www.sonnetbio.com. You may access our annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K and amendments to those reports filed or furnished pursuant to Section 13(a) or 15(d) of the Exchange Act with the SEC free of charge at our website as soon as reasonably practicable after such material is electronically filed with, or furnished to, the SEC. The information contained in, or that can be accessed through, our website is not incorporated by reference into, and is not part of, this prospectus.

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LEGAL MATTERS

The validity of the Common Stock and certain other legal matters will be passed upon for us by Lowenstein Sandler LLP, New York, New York.

EXPERTS

The consolidated financial statements of Sonnet BioTherapeutics Holdings, Inc. as of September 30, 2024 and 2023 and for the years then ended have been incorporated by reference herein in reliance upon the report of KPMG LLP, independent registered public accounting firm, incorporated by reference herein, and upon the authority of said firm

as experts in accounting and auditing. The audit report covering the September 30, 2024 consolidated financial statements contains an explanatory paragraph that states that Sonnet BioTherapeutics Holdings, Inc. has incurred recurring losses and negative cash flows from operations since inception and will require substantial additional financing to continue to fund its research and development activities that raise substantial doubt about its ability to continue as a going concern. The consolidated financial statements do not include any adjustments that might result from the outcome of this uncertainty.



Up to 2,000,000 Shares of Common Stock

PROSPECTUS

, 2025

PART II

INFORMATION NOT REQUIRED IN PROSPECTUS

Item 13. Other Expenses of Issuance and Distribution.

The following table sets forth the estimated expenses to be borne by the registrant in connection with the securities being registered hereby.

Expense	Estimated Amount
SEC registration fee*	\$ 465.42
FINRA filing fee*	3,000.00
Legal fees and expenses	50,000.00
Accounting fees and expenses	60,000.00
Financial Printing and Miscellaneous expenses	6,534.58
Total	\$ 120,000.00

*Previously paid.

Item 14. Indemnification of Directors and Officers

Section 145 of the Delaware General Corporation Law (the "DGCL") provides, in general, that a corporation incorporated under the laws of the State of Delaware, as we are, may indemnify any person who was or is a party or is threatened to be made a party to any threatened, pending or completed action, suit or proceeding (other than a derivative action by or in the right of the corporation) by reason of the fact that such person is or was a director, officer, employee or agent of the corporation, or is or was serving at the request of the corporation as a director, officer, employee or agent of another enterprise, against expenses (including attorneys' fees), judgments, fines and amounts paid in settlement actually and reasonably incurred by such person in connection with such action, suit or proceeding if such person acted in good faith and in a manner such person reasonably believed to be in or not opposed to the best interests of the corporation and, with respect to any criminal action or proceeding, had no reasonable cause to believe such person's conduct was unlawful. In the case of a derivative action, a Delaware corporation may indemnify any such person against expenses (including attorneys' fees) actually and reasonably incurred by such person in connection with the defense or settlement of such action or suit if such person acted in good faith and in a manner such person reasonably believed to be in or not opposed to the best interests of the corporation, except that no indemnification will be made in respect of any claim, issue or matter as to which such person will have been adjudged to be liable to the corporation unless and only to the extent that the Court of Chancery of the State of Delaware or any other court in which such action was brought determines such person is fairly and reasonably entitled to indemnity for such expenses.

Article X of our Certificate of Incorporation states that to the fullest extent permitted by the DGCL, a director of the corporation shall not be liable to the corporation or its stockholders for monetary damages for breach of fiduciary duty as a director.

Under Article VI of our Bylaws, any director, officer, employee or agent of the Company who was or is made or is threatened to be made a party or is otherwise involved in any action, suit or proceeding, whether civil, criminal, administrative or investigative (a "Proceeding") by reason of the fact that such director, officer, employee or agent or a person for whom such director, officer, employee or agent is the legal representative, is or was a director or officer of the Company or, while serving as a director, officer, employee or agent of the Company, is or was serving at the request of the Company as a director, officer, employee or agent of another corporation or of a partnership, joint venture, trust, enterprise or non-profit entity, including service with respect to employee benefit plans (an "Indemnification Covered Person"), against all liability and loss suffered and expenses (including attorneys' fees, judgments, fines ERISA excise taxes or penalties and amounts paid in settlement) reasonably incurred by such person in connection with any such Proceeding.

We maintain a general liability insurance policy that covers certain liabilities of directors and officers of our corporation arising out of claims based on acts or omissions in their capacities as directors or officers.

Insofar as indemnification for liabilities arising under the Securities Act may be permitted to our directors, officers and controlling persons pursuant to the foregoing provisions, or otherwise, we have 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.

Item 15. Recent Sales of Unregistered Securities.

In the three years preceding the filing of this registration statement, the Company made sales of the following unregistered securities:

August 2022 Offering

In August 2022, we entered into a securities purchase agreement (the “**Preferred SPA**”) with several accredited investors for the issuance and sale of (i) an aggregate of 22,275 shares of our Series 3 convertible preferred stock, stated value \$100 per share (the “**Series 3 Stock**”), (ii) 225 shares of our Series 4 convertible preferred stock, stated value \$100 per share (the “**Series 4 Stock**”), and (iii) Series 3 warrants (the “**Series 3 Warrants**”) to purchase up to 1,566 shares of Common Stock in a private placement for aggregate gross proceeds of \$2.3 million, with \$0.1 million of issuance costs for net proceeds of \$2.1 million. The shares of Series 3 Stock were convertible into an aggregate of 3,106 shares of Common Stock and the shares of Series 4 Stock were convertible into an aggregate of 31 shares of Common Stock, in each case, at a conversion price of \$717.024 per share. The Series 3 Warrants have an exercise price of \$717.024 per share, are exercisable commencing six months after issuance, and will expire five years from the issuance date. In September 2022, all shares of Series 3 Stock and Series 4 Stock issued in connection with the Preferred SPA were converted into shares of Common Stock.

The shares of Series 3 Stock and Series 4 Stock and the shares of Common Stock issuable upon the conversion of the Series 3 Stock and the Series 4 Stock and the exercise of the Series 3 Warrants were offered pursuant to an exemption from the registration requirement of the Securities Act provided in Section 4(a)(2) of the Securities Act and/or Rule 506 promulgated under Regulation D of the Securities Act.

June 2023 Offering

In connection with a registered direct offering of our shares of Common Stock and pre-funded warrants to purchase shares of Common Stock, on June 28, 2023, we entered into a securities purchase agreement with certain institutional investors, pursuant to which, among other things, we sold to such investors warrants (the “**June 2023 Private Warrants**”) to purchase up to 28,409 shares of Common Stock in a private placement. No separate consideration was paid for the issuance of the June 2023 Private Warrants. In addition, we issued to Chardan or its designees, warrants (the “**June 2023 PA Warrants**” and together with the June 2023 Private Warrants, the “**June 2023 Warrants**”) to purchase up to 852 shares of Common Stock. The June 2023 Warrants are currently exercisable, have a term of exercise equal to five years from the date of the securities purchase agreement and have an exercise price equal to \$118.7824 per share.

The June 2023 Warrants and the shares of Common Stock issuable upon exercise of the June 2023 Warrants were offered pursuant to an exemption from the registration requirement of the Securities Act provided in Section 4(a)(2) of the Securities Act and/or Rule 506 promulgated under Regulation D of the Securities Act.

June 2024 Warrant Inducement Offering

On June 19, 2024, we entered into inducement offer letter agreements with holders of certain existing warrants issued in October 2023 having an original exercise price of \$12.80 per share to purchase up to an aggregate of 353,562 shares of Common Stock at a reduced exercise price of \$9.60 per share (the “**Warrant Inducement Offering**”). The Warrant Inducement Offering closed on June 21, 2024, resulting in gross proceeds to us of \$3.4 million and net proceeds of \$2.9 million. Also, in connection with the Warrant Inducement Offering, we (i) issued to holders who participated in the transaction new Common Stock warrants to purchase an aggregate of 703,125 shares of Common Stock, (ii) reduced the exercise price of existing warrants to purchase 354,994 shares of Common Stock for those holders who did not exercise warrants in the transaction from \$12.80 per share to \$9.60 per share for the remaining term of the warrants, and (iii) reduced the exercise price of certain existing warrants issued in June 2023 to purchase 28,409 shares of Common Stock from \$118.7824 per share to \$12.40 per share and extended the expiration date of these warrants from December 30, 2026 to June 21, 2029. The new Common Stock warrants are immediately exercisable at a price of \$12.40 per share and expire five years from the date of issuance. Warrants to purchase 14,142 shares of Common Stock were issued as compensation to Ladenburg Thalmann & Co. Inc. for its services as the placement agent related for the Warrant Inducement Offering. These Common Stock warrants are immediately exercisable at a price of \$14.88 per share and expire five years from the date of issuance.

We issued the new Common Stock warrants to the holders in reliance on the exemption from registration provided for under Section 4(a)(2) of the Securities Act. We relied on this exemption from registration for private placements based in part on the representations made by the holders, including the representations with respect to each holder’s status as an “accredited investor,” as such term is defined in Rule 501(a) of the Securities Act, and each holder’s investment intent.

December 2024 Offering

On December 9, 2024, we entered into a securities purchase agreement for a registered direct offering, pursuant to which we sold an aggregate of (i) 768,000 shares of Common Stock, and (ii) pre-funded warrants to purchase up to an aggregate of 317,325 shares of Common Stock. Pursuant to the registered direct purchase agreement, in a concurrent private placement, we also sold warrants to purchase up to 1,085,325 shares of Common Stock (the “**Registered Direct Common Warrants**”). Each registered direct share (or registered direct pre-funded warrant in lieu thereof) was sold in the registered direct offering together with one registered direct common warrant at a combined offering price of \$2.23, priced at-the-market under the rules of the Nasdaq Stock Market. The registered direct pre-funded warrants had an exercise price of \$0.0001 per share, were immediately exercisable and were exercised in full on December 10, 2024. The Registered Direct Warrants have an exercise price of \$2.10 per share, are immediately exercisable and will expire five years from the date of issuance.

On December 9, 2024, we also entered into a securities purchase agreement for a concurrent private placement with an existing securityholder, pursuant to which we sold an aggregate of (i) 127,500 shares of Common Stock (the “**Private Placement Shares**”), (ii) pre-funded warrants to purchase up to an aggregate of 545,500 shares of Common Stock (the “**Private Placement Pre-Funded Warrants**”), and (iii) common warrants to purchase up to an aggregate of 673,000 shares of Common Stock (the “**Private Placement Common Warrants**”) and, together with the Registered Direct Common Warrants, the “**December 2024 Common Warrants**”). Each private placement share (or private placement pre-funded warrant in lieu thereof) was sold in the private placement together with one private placement common warrant at a combined offering price of \$2.23, priced at-the-market under the rules of the Nasdaq Stock Market. The Private Placement Pre-Funded Warrants have an exercise price of \$0.0001 per share, are immediately exercisable and may be exercised at any time from the closing date of the private placement until all of the Private Placement Pre-Funded Warrants are exercised in full. The Private Placement Pre-Funded Warrants have an exercise price of \$2.10 per share, are immediately exercisable and will expire five years from the date of issuance.

The Private Placement Shares, the Private Placement Pre-Funded Warrants, the December 2024 Common Warrants and the shares of Common Stock issuable upon exercise of the Private Placement Pre-Funded Warrants and December 2024 Common Warrants were offered pursuant to an exemption from the registration requirement of the Securities Act provided in Section 4(a)(2) of the Securities Act and/or Rule 506 promulgated under Regulation D of the Securities Act.

Committed Equity Facility

On May 2, 2024, we entered into a ChEF Purchase Agreement (the “**Purchase Agreement**”) with Chardan Capital Markets LLC (“**Chardan**”), establishing a committed equity facility. Pursuant to the Purchase Agreement, we have the right from time to time at our option to sell to Chardan up to \$25.0 million in aggregate gross purchase price of shares of Common Stock. As of January 29, 2025, 62,976 shares have been issued to Chardan pursuant to the Purchase Agreement for aggregate net proceeds to us of \$0.2 million.

We issued the shares of Common Stock to Chardan in reliance on the exemption from registration provided for under Section 4(a)(2) of the Securities Act and/or Rule 506 promulgated under Regulation D of the Securities Act.

Item 16. Exhibits and Financial Statements Schedules

(a) Exhibits

The exhibits to the registration statement are listed in the Exhibit Index to this registration statement and are incorporated herein by reference.

(b) Financial Statement Schedules

All schedules have been omitted because either they are not required, are not applicable or the information is otherwise set forth in the financial statements and related notes thereto.

Item 17. Undertakings

- (a) The undersigned registrant hereby undertakes:
- (1) To file, during any period in which offers or sales are being made, a post-effective amendment to this registration statement:
 - (i) To include any prospectus required by Section 10(a)(3) of the Securities Act;
 - (ii) To reflect in the prospectus any facts or events arising after the effective date of the registration statement (or the most recent post-effective amendment thereof) which, individually or in the aggregate, represent a fundamental change in the information set forth in the registration statement. Notwithstanding the foregoing, any increase or decrease in volume of securities offered (if the total dollar value of securities offered would not exceed that which was registered) and any deviation from the low or high end of the estimated maximum offering range may be reflected in the form of prospectus filed with the SEC pursuant to Rule 424(b) if, in the aggregate, the changes in volume and price represent no more than twenty percent (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 (a)(1)(i), (a)(1)(ii), and (a)(1)(iii) above 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 SEC by the registrant pursuant to Section 13 or Section 15(d) of the Securities Exchange Act of 1934 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 purpose of determining any liability under the Securities Act, each such post-effective amendment shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial *bona fide* offering thereof.
 - (3) To remove from registration by means of a post-effective amendment any of the securities being registered which remain unsold at the termination of the offering.
 - (4) That, for the purpose of determining liability under the Securities Act to any purchaser, each prospectus filed pursuant to Rule 424(b) as part of a registration statement relating to an offering, other than registration statements relying on Rule 430B or other than prospectuses filed in reliance on Rule 430A, shall be deemed to be part of and included in the registration statement as of the date it is first used after effectiveness. Provided, however, that no statement made in a registration statement or prospectus that is part of the registration statement or made in a document incorporated or deemed incorporated by reference into the registration statement or prospectus that is part of the registration statement will, as to a purchaser with a time of contract of sale prior to such first use, supersede or modify any statement that was made in the registration statement or prospectus that was part of the registration statement or made in any such document immediately prior to such date of first use.
 - (5) That, for the purpose of determining liability of the registrant under the Securities Act to any purchaser in the initial distribution of the securities, the undersigned registrant hereby 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.
- (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 Section 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.
- (c) 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 foregoing provisions, 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 City of Princeton, State of New Jersey, on January 30, 2025.

SONNET BIOTHERAPEUTICS HOLDINGS, INC.

By: /s/ Pankaj Mohan
 Name: Pankaj Mohan
 Title: Chief Executive Officer

Pursuant to the requirements of the Securities Act of 1933, this Registration Statement has been signed by the following persons on January 30, 2025 in the capacities and on the dates indicated.

Signature

Title

<i>/s/ Pankaj Mohan</i> Pankaj Mohan	Chief Executive Officer and Chairman <i>(Principal Executive Officer)</i>
*	
Jay Cross	Chief Financial Officer <i>(Principal Financial and Accounting Officer)</i>
*	
Nailesh Bhatt	Director
*	
Albert Dymness	Director
*	
Donald Griffith	Director
*	
Raghu Rao	Director
*	
Lori McNeill	Director

*By */s/ Pankaj Mohan, Attorney-in-Fact*

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EXHIBIT INDEX

Exhibit No.	Description
2.1#	<u>Agreement and Plan of Merger, dated October 10, 2019, by and among the Company, Sonnet Sub. and Merger Sub (incorporated by reference to Exhibit 2.1 to the Company's Current Report on Form 8-K, filed with the SEC on October 11, 2019).</u>
2.2	<u>Amendment No. 1 to Agreement and Plan of Merger, dated February 7, 2020, by and among the Company, Sonnet Sub and Merger Sub (incorporated by reference to Exhibit 2.1 to the Company's Current Report on Form 8-K, filed with the SEC on February 7, 2020).</u>
2.3#	<u>Share Exchange Agreement, between Sonnet BioTherapeutics, Inc. and Relief Therapeutics Holding SA, dated August 9, 2019 (incorporated by reference to Exhibit 2.10 to the Company's Registration Statement on Form S-4 filed with the SEC on November 27, 2019).</u>
3.1	<u>Certificate of Incorporation, as amended, of Sonnet BioTherapeutics Holdings, Inc. (incorporated by reference to Exhibit 3.1 to the Company's Annual Report on Form 10-K filed with the SEC on December 17, 2020).</u>
3.2	<u>Certificate of Designation of Preferences, Rights and Limitations of Series 3 Preferred Stock (incorporated by reference to Exhibit 3.1 to the Company's Current Report on Form 8-K, filed with the SEC on August 15, 2022).</u>
3.3	<u>Certificate of Designation of Preferences, Rights and Limitations of Series 4 Preferred Stock (incorporated by reference to Exhibit 3.2 to the Company's Current Report on Form 8-K, filed with the SEC on August 15, 2022).</u>
3.4	<u>Certificate of Amendment of Certificate of Incorporation, as amended, of Sonnet BioTherapeutics Holdings, Inc., dated September 16, 2022 (incorporated by reference to Exhibit 3.1 to the Company's Current Report on Form 8-K, filed with the SEC on September 19, 2022).</u>
3.5	<u>Certificate of Amendment of Certificate of Incorporation, as amended, of Sonnet BioTherapeutics Holdings, Inc., dated August 31, 2023 (incorporated by reference to Exhibit 3.1 to the Company's Current Report on Form 8-K, filed with the SEC on September 1, 2023).</u>
3.6	<u>Certificate of Amendment of Certificate of Incorporation, as amended, of Sonnet BioTherapeutics Holdings, Inc., dated September 25, 2024 (incorporated by reference to Exhibit 3.1 to the Company's Current Report on Form 8-K, filed with the SEC on September 30, 2024).</u>
3.7	<u>Amended and Restated Bylaws, of Sonnet BioTherapeutics Holdings, Inc. (incorporated by reference to Exhibit 3.3 to the Company's Current Report on Form 8-K, filed with the SEC on August 15, 2022).</u>
4.1	<u>Form of Common Stock Certificate (Incorporated by reference to Exhibit 4.1 to the Company's Registration Statement on Form S-1 (Registration No. 333-178307) filed with the SEC on December 2, 2011).</u>
4.2	<u>Form of Warrant dated May 4, 2017 (incorporated by reference to Exhibit 4.2 to the Company's Current Report on Form 8-K filed with the SEC on May 5, 2017).</u>
4.3	<u>Spin-Off Entity Warrant, dated April 1, 2020 (incorporated by reference to Exhibit 4.1 to the Company's Current Report on Form 8-K filed with the SEC on April 3, 2020).</u>
4.4	<u>Form of Sonnet BioTherapeutics, Inc. Converted Warrant (incorporated by reference to Exhibit 4.2 to the Company's Quarterly Report on Form 10-Q filed with the SEC on August 14, 2020).</u>
4.5	<u>Form of Series A/B Warrants (incorporated by reference to Exhibit 4.16 to the Company's Registration Statement on Form S-4/A filed with the SEC on February 7, 2020).</u>
4.6	<u>Form of Series C Warrant (incorporated by reference to Exhibit 4.1 to the Company's Current Report on Form 8-K filed with the SEC on August 4, 2020).</u>

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4.7 [Registration Rights Agreement, dated February 7, 2020, by and between the Company and certain investors named therein \(incorporated by reference to Exhibit 4.17 to the Company's Registration Statement on Form S-4/A filed with the SEC on February 7, 2020\).](#)

- 4.8 [Form of Pre-Funded Warrant, dated August 24, 2021 \(incorporated by reference to Exhibit 4.2 to the Company's Current Report on Form 8-K filed with the SEC August 25, 2021\).](#)
- 4.9 [Form of Underwriter Warrant, dated August 24, 2021 \(incorporated by reference to Exhibit 4.9 to the Company's Registration Statement on Form S-1/A filed with the SEC on August 16, 2021\).](#)
- 4.10 [Form of Common Warrant, dated August 24, 2021 \(incorporated by reference to Exhibit 4.4 to the Company's Current Report on Form 8-K filed with the SEC August 25, 2021\).](#)
- 4.11 [Form of Pre-Funded Warrant dated February 10, 2023 \(incorporated by reference to Exhibit 4.2 to the Company's Current Report on Form 8-K filed with the SEC on February 13, 2023\).](#)
- 4.12 [Form of Underwriter Warrant dated February 10, 2023 \(incorporated by reference to Exhibit 4.3 to our Current Report on Form 8-K filed with the SEC on February 13, 2023\).](#)
- 4.13 [Form of Common Warrant dated February 10, 2023 \(incorporated by reference to Exhibit 4.4 to the Company's Current Report on Form 8-K filed with the SEC on February 13, 2023\).](#)
- 4.14 [Form of Pre-Funded Warrant dated June 30, 2023 \(incorporated by reference to Exhibit 4.1 to the Company's Current Report on Form 8-K, filed with the SEC on June 30, 2023\).](#)
- 4.15 [Form of Warrant dated June 30, 2023 \(incorporated by reference to Exhibit 4.2 to the Company's Current Report on Form 8-K, filed with the SEC on June 30, 2023\).](#)
- 4.16 [Form of Placement Agent Warrant dated June 30, 2023 \(incorporated by reference to Exhibit 4.3 to the Company's Current Report on Form 8-K, filed with the SEC on June 30, 2023\).](#)
- 4.17 [Form of Pre-Funded Warrant \(incorporated by reference to Exhibit 4.14 to the Company's Registration Statement on Form S-1/A as filed on September 28, 2023\).](#)
- 4.18 [Form of Underwriter Warrant \(incorporated by reference to Exhibit 4.15 to the Company's Registration Statement on Form S-1/A as filed on September 28, 2023\).](#)
- 4.19 [Form of Common Warrant \(incorporated by reference to Exhibit 4.16 to the Company's Registration Statement on Form S-1/A as filed on September 28, 2023\).](#)
- 4.20 [Form of Common Warrant \(incorporated by reference to Exhibit 4.1 to the Company's Current Report on Form 8-K filed with the SEC on June 20, 2024\).](#)
- 4.21 [Form of Placement Agent Warrant \(incorporated by reference to Exhibit 4.2 of the Company's Current Report on Form 8-K filed with the SEC on June 20, 2024\).](#)
- 4.22 [Form of Common Warrant \(incorporated by reference to Exhibit 4.22 of the Company's Registration Statement on Form S-1/A filed with the SEC on November 6, 2024\).](#)
- 4.23 [Form of Pre-Funded Warrant \(incorporated by reference to Exhibit 4.23 to the Company's Registration Statement on Form S-1/A filed with the SEC on November 6, 2024\).](#)
- 4.24 [Form of Registered Direct Pre-Funded Warrant \(incorporated by reference to Exhibit 4.1 to the Company's Current Report on Form 8-K filed with the SEC on December 10, 2024\).](#)
- 4.25 [Form of Private Placement Pre-Funded Warrant \(incorporated by reference to Exhibit 4.2 to the Company's Current Report on Form 8-K filed with the SEC on December 10, 2024\).](#)
- 4.26 [Form of Common Warrant \(incorporated by reference to Exhibit 4.3 to the Company's Current Report on Form 8-K filed with the SEC on December 10, 2024\).](#)
- 5.1*** [Opinion of Lowenstein Sandler LLP.](#)
- 10.1 [Common Stock Purchase Agreement, between GEM Global Yield Fund LLC SCS and Sonnet BioTherapeutics, Inc., dated August 6, 2019 \(incorporated by reference to Exhibit 10.54 to the Company's Registration Statement on Form S-4 filed with the SEC on November 27, 2019\).](#)
- 10.2 [Amendment to Common Stock Purchase Agreement, between GEM Global Yield Fund LLC SCS and Sonnet BioTherapeutics, Inc., dated September 25, 2019 \(incorporated by reference to Exhibit 10.55 to the Company's Registration Statement on Form S-4 filed with the SEC on November 27, 2019\).](#)
- 10.3 [Side Letter and Amendment No. 2 to Common Stock Purchase Agreement, between GEM Global Yield Fund LLC SCS, Sonnet BioTherapeutics, Inc. and Chanticleer Holdings, Inc., dated February 7, 2020 \(incorporated by reference to Exhibit 10.60 to the Company's Registration Statement on Form S-4 filed with the SEC on February 7, 2020\).](#)

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- 10.4† [Employment Agreement, between Pankaj Mohan and Sonnet BioTherapeutics, Inc., dated December 31, 2018 \(incorporated by reference to Exhibit 10.56 to the Company's Registration Statement on Form S-4 filed with the SEC on February 7, 2020\).](#)
- 10.5† [Employment Agreement, between John Cini and Sonnet BioTherapeutics, Inc., dated January 10, 2020 \(incorporated by reference to Exhibit 10.58 to the Company's Registration Statement on Form S-4 filed with the SEC on February 7, 2020\).](#)
- 10.6† [Employment Agreement, between Jay Cross and Sonnet BioTherapeutics, Inc., dated January 10, 2020 \(incorporated by reference to Exhibit 10.57 to the Company's Registration Statement on Form S-4 filed with the SEC on February 7, 2020\).](#)
- 10.7† [Employment Agreement, between Susan Dexter and the Company, dated April 1, 2020 \(incorporated by reference to Exhibit 10.7 to the Company's Current Report on Form 8-K filed with the SEC on April 3, 2020\).](#)
- 10.8† [Offer Letter, between Donald Griffith and Sonnet BioTherapeutics, Inc., dated January 1, 2019 \(incorporated by reference to Exhibit 10.59 to the Company's Registration Statement on Form S-4 filed with the SEC on February 7, 2020\).](#)
- 10.9† [Sonnet BioTherapeutics Holdings, Inc. 2020 Omnibus Equity Incentive Plan \(incorporated by reference to Exhibit 4.2 to the Company's Registration Statement on Form S-8 filed with the SEC on May 20, 2020\).](#)

- 10.10† [Form of Restricted Stock Unit Award \(incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed with the SEC on July 9, 2020\).](#)
- 10.11** [License Agreement, between Ares Trading SA and Relief Therapeutics SA, dated August 28, 2015 \(incorporated by reference to Exhibit 10.51 to the Company's Registration Statement on Form S-4 filed with the SEC on February 7, 2020\).](#)
- 10.12** [Discovery Collaboration Agreement, between XOMA \(US\) LLC and Oncobiologics, Inc., dated July 23, 2012 \(incorporated by reference to Exhibit 10.52 to the Company's Registration Statement on Form S-4 filed with the SEC on February 7, 2020\).](#)
- 10.13** [Amendment of Discovery Collaboration Agreement, between XOMA \(US\) LLC and Sonnet BioTherapeutics, Inc., dated May 7, 2019 \(incorporated by reference to Exhibit 10.53 to the Company's Registration Statement on Form S-4 filed with the SEC on February 7, 2020\).](#)
- 10.14 [Securities Purchase Agreement, dated as of February 7, 2020, by and among Chanticleer Holdings, Inc., Sonnet BioTherapeutics, Inc. and the investors party thereto \(incorporated by reference to Exhibit 10.64 to the Company's Registration Statement on Form S-4 filed with the SEC on February 7, 2020\).](#)
- 10.15 [Form of Warrant Exercise and Omnibus Amendment Agreement, dated as of August 3, 2020, by and between Sonnet BioTherapeutics Holdings, Inc. and the Holders \(incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed with the SEC on August 4, 2020\).](#)
- 10.16† [Assignment and Assumption Employment Agreements by Sonnet BioTherapeutics Holdings, Inc., effective April 1, 2020 \(incorporated by reference to Exhibit 10.16 to the Company's Annual Report on Form 10-K filed with the SEC on December 17, 2020\).](#)
- 10.17† [Amendment No. 1 to Executive Employment Agreement, between Pankaj Mohan and the Company, dated November 23, 2020 \(incorporated by reference to Exhibit 10.17 to the Company's Annual Report on Form 10-K filed with the SEC on December 17, 2020\).](#)

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- 10.18† [Amendment No. 1 to Executive Employment Agreement, between John Cini and the Company, dated November 23, 2020 \(incorporated by reference to Exhibit 10.18 to the Company's Annual Report on Form 10-K filed with the SEC on December 17, 2020\).](#)
- 10.19† [Form of Indemnification Agreement \(incorporated by reference to Exhibit 10.19 to the Company's Annual Report on Form 10-K filed with the SEC on December 17, 2020\).](#)
- 10.20 [At-The-Market Sales Agreement, dated February 5, 2020, between the Company and BTIG \(incorporated by reference to Exhibit 1.1 to the Company's Current Report on Form 8-K filed with the SEC on February 5, 2021\).](#)
- 10.21 [License Agreement, dated May 2, 2021, between Sonnet BioTherapeutics, Inc. and New Life Therapeutics PTE, LTD \(incorporated by reference to Exhibit 10.1 to the Company's Quarterly Report on Form 10-Q filed with the SEC on May 17, 2021\).](#)
- 10.22 [First Amendment to License Agreement, dated June 11, 2021, between Sonnet BioTherapeutics, Inc. and New Life Therapeutics PTE, LTD \(incorporated by reference to Exhibit 10.22 to the Company's Annual Report on Form 10-K filed with the SEC on December 17, 2021\).](#)
- 10.23 [Second Amendment to License Agreement, dated July 7, 2021, among Sonnet Biotherapeutics CH SA, Sonnet BioTherapeutics, Inc. and New Life Therapeutics PTE, Ltd. \(incorporated by reference to Exhibit 10.23 to the Company's Annual Report on Form 10-K filed with the SEC on December 17, 2021\).](#)
- 10.24 [Amendment to License Agreement and Settlement, dated November 1, 2021, between ARES TRADING SA and Sonnet BioTherapeutics CH SA \(incorporated by reference to Exhibit 10.24 to the Company's Annual Report on Form 10-K, filed with the SEC on December 17, 2021\).](#)
- 10.25 [At-The-Market Sales Agreement, dated August 15, 2022, between the Company and BTIG \(incorporated by reference to Exhibit 1.1 to the Company's Current Report on Form 8-K filed with the SEC on August 15, 2022\).](#)
- 10.26 [Underwriting Agreement, dated February 8, 2023, between the Company and Chardan Capital Markets, LLC \(incorporated by reference to Exhibit 1.1 to the Company's Current Report on Form 8-K filed with the SEC on February 13, 2023\).](#)
- 10.27 [Form of Securities Purchase Agreement, dated June 28, 2023, by and between the Company and the Purchaser \(incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed with the SEC on June 30, 2023\).](#)
- 10.28 [ChEF Purchase Agreement, dated as of May 2, 2024, by and between Sonnet BioTherapeutics Holdings, Inc. and Chardan Capital Markets, LLC \(incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed with the SEC on May 3, 2024\).](#)
- 10.29 [Registration Rights Agreement, dated as of May 2, 2024, by and between Sonnet BioTherapeutics Holdings, Inc. and Chardan Capital Markets, LLC \(incorporated by reference to Exhibit 10.2 to the Company's Current Report on Form 8-K filed with the SEC on May 3, 2024\).](#)
- 10.30 [Form of Inducement Letter \(incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed with the SEC on June 20, 2024\).](#)
- 10.31 [License Agreement, dated October 8, 2024, between Sonnet BioTherapeutics, Inc., Sonnet BioTherapeutics CH SA and Alkem Laboratories Limited \(incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed with the SEC on October 9, 2024\).](#)
- 10.32 [Underwriting Agreement, dated November 6, 2024, between the Company and Chardan Capital Markets, LLC \(incorporated by reference to Exhibit 1.1 to the Company's Current Report on Form 8-K filed with the SEC on November 8, 2024\).](#)
- 10.33 [Form of Registered Direct Securities Purchase Agreement, dated December 9, 2024, by and between the Company and the Purchasers \(incorporated by reference to Exhibit 10.1 of the Company's Current Report on Form 8-K filed with the SEC on December 10, 2024\).](#)
- 10.34 [Form of Private Placement Securities Purchase Agreement, dated December 9, 2024, by and between the Company and the Purchasers \(incorporated by reference to Exhibit 10.2 of the Company's Current Report on Form 8-K filed with the SEC on December 10, 2024\).](#)
- 21.1 [Subsidiaries of the Company \(incorporated by reference to Exhibit 21.1 to the Company's Annual Report on Form 10-K filed with the SEC on December 14, 2023\).](#)
- 23.1*** [Consent of KPMG LLP.](#)
- 23.2*** [Consent of Lowenstein Sandler LLP \(included as part of Exhibit 5.1\).](#)

24.1*** [Power of Attorney \(included in the signature page\).](#)

101.INS* Inline XBRL Instance Document.

101.SCH* Inline XBRL Taxonomy Extension Schema Document.

101.CAL* Inline XBRL Taxonomy Extension Calculation Linkbase Document.

101.DEF* Inline XBRL Taxonomy Extension Definition Linkbase Document.

101.LAB* Inline Taxonomy Extension Label Linkbase Document.

101.PRE* Inline XBRL Taxonomy Extension Presentation Linkbase Document.

104* Cover Page Interactive Data File (embedded within the Inline XBRL document).

107*** [Filing Fee Table.](#)

* Filed herewith.

** Portions of the exhibit have been omitted pursuant to Item 601(b)(10) of Regulation S-K. A copy of any omitted portions will be furnished to the Securities and Exchange Commission upon request.

*** Previously filed.

The schedules and exhibits to this agreement have been omitted pursuant to Item 601(b)(2) of Regulation S-K. A copy of any omitted schedule and/or exhibit will be furnished to the Securities and Exchange Commission upon request.

† Indicates a management contract or compensation plan, contract or arrangement.