

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

**FORM S-1**  
**REGISTRATION STATEMENT**

*UNDER*  
*THE SECURITIES ACT OF 1933*

**DERMATA THERAPEUTICS, 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)

86-3218736

(I.R.S. Employer  
Identification No.)

**3525 Del Mar Heights Rd., #322**  
**San Diego, CA 92130**

**Telephone: (858) 800-2543**

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

**Gerald T. Proehl**

**President and Chief Executive Officer**

**3525 Del Mar Heights Rd., #322**

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*Copies to:*

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**Approximate date of commencement of proposed sale to the public:** From time to time after the effective date of this registration statement.

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

If this Form is filed to register additional securities for an offering pursuant to Rule 462(b) under the Securities Act, 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 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, or a smaller reporting company. See the definitions of "large accelerated filer," "accelerated filer" and "smaller reporting company" in Rule 12b-2 under the Securities Exchange Act of 1934. (Check one):

Large Accelerated Filer

Accelerated Filer

Non-accelerated Filer

Smaller Reporting Company

Emerging Growth Company

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

**The Registrant hereby amends this registration statement on such date or dates as may be necessary to delay its effective date until the Registrant shall file a further amendment that specifically states that this registration statement shall thereafter become effective in accordance with Section 8(a) of the Securities Act of 1933, as amended, or until the 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 prospectus is not complete and may be changed. We may not sell these securities until the registration statement filed with the Securities and Exchange Commission is effective. This prospectus is not an offer to sell these securities and it is not soliciting an offer to buy these securities in any state where the offer or sale is not permitted.**

**SUBJECT TO COMPLETION, DATED JULY 7, 2023**

PRELIMINARY PROSPECTUS



**856,938 Shares of Common Stock**

**Issuable Upon Exercise of Outstanding Warrants**

This prospectus relates to the resale from time to time, by the selling stockholders identified in this prospectus under the caption “Selling Stockholders,” of up to 856,938 shares of our common stock, par value \$0.0001 per share (“Common Stock”), they may acquire upon the exercise of (i) outstanding warrants issued in a private placement (the “Private Warrants”) and (ii) up to 56,061 shares of Common Stock that are issuable upon the exercise of certain warrants issued to our placement agent (the “PA Warrants” and together with the Private Warrants, the “Warrants”). We issued the Warrants to the selling stockholders and the placement agent in connection with a private placement concurrent with a registered direct offering of 458,555 of our Common Stock and pre-funded warrants to purchase up to an aggregate of 342,322 shares of Common Stock, which was completed on March 26, 2023.

The selling stockholders may, from time to time, sell, transfer or otherwise dispose of any or all of their shares of Common Stock or interests in their shares of Common Stock on any stock exchange, market or trading facility on which the shares of Common Stock are traded or in private transactions. These dispositions may be at fixed prices, at prevailing market prices at the time of sale, at prices related to the prevailing market price, at varying prices determined at the time of sale, or at negotiated prices. See “Plan of Distribution” in this prospectus for more information. We will not receive any proceeds from the resale or other disposition of the shares of Common Stock by the selling stockholders. However, we will receive the proceeds of any cash exercise of the Warrants. See “Use of Proceeds” beginning on page 7 and “Plan of Distribution” beginning on page 13 of this prospectus for more information.

Our Common Stock and certain of our outstanding warrants (the “Public Warrants”) are listed on the Nasdaq Capital Market (“Nasdaq”) under the symbols “DRMA” and “DRMAW,” respectively. On July 6, 2023, the last reported sale price of our Common Stock and Public Warrants as reported on Nasdaq was \$1.61 and \$0.029, respectively.

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

**An investment in our securities involves a high degree of risk. Before deciding whether to invest in our securities, you should consider carefully the risks and uncertainties described in the section captioned “Risk Factors” contained in our Annual Report on Form 10-K for the fiscal year ended December 31, 2022, filed with the Securities and Exchange Commission, or the SEC, on February 21, 2023, as amended on March 28, 2023 and our other filings we make with the Securities and Exchange Commission from time to time, which are incorporated by reference herein in their entirety, together with other information in this prospectus and the information incorporated by reference herein.**

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

The date of this Prospectus is \_\_\_\_\_, 2023

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## ABOUT THIS PROSPECTUS

All references to the terms “Dermata,” the “Company,” “we,” “us” or “our” in this prospectus refer to Dermata Therapeutics, Inc., a Delaware corporation, unless the context requires otherwise.

We have not authorized anyone to provide you with information that is different from that contained in this prospectus or in any free writing prospectus we may authorize to be delivered or made available to you. When you make a decision about whether to invest in our securities, you should not rely upon any information other than the information in this prospectus or in any free writing prospectus that we may authorize to be delivered or made available to you. Neither the delivery of this prospectus nor the sale of our securities means that the information contained in this prospectus or any free writing prospectus is correct after the date of this prospectus or such free writing prospectus. This prospectus is not an offer to sell or the solicitation of an offer to buy our securities in any circumstances under which the offer or solicitation is unlawful.

This prospectus contain 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 full text of the actual documents, some of which have been filed or will be filed and incorporated by reference herein. See “Information Incorporated by Reference” and “Where You Can Find More Information” in this prospectus. We further note that the representations, warranties and covenants made by us in any agreement that is filed as an exhibit to any document that is incorporated by reference into this prospectus were made solely for the benefit of the parties to such agreement, including, in some cases, for the purpose of allocating risk among the parties to such agreements, and should not be deemed to be a representation, warranty or covenant to you. Moreover, such representations, warranties or covenants were accurate only as of the date when made. Accordingly, such representations, warranties and covenants should not be relied on as accurately representing the current state of our affairs.

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.

## SUMMARY

This summary highlights information contained elsewhere in this prospectus and the documents incorporated by reference herein. This summary does not contain all of the information that you should consider before deciding to invest in our securities. You should read this entire prospectus carefully, including the section entitled "Risk Factors" beginning on page 5, our consolidated financial statements and the related notes and the other information incorporated by reference into this prospectus before making an investment decision.

This prospectus and the information incorporated by reference herein contain references to trademarks, service marks and trade names owned by us or other companies. Solely for convenience, trademarks, service marks and trade names referred to in this prospectus and the information incorporated by reference herein, including logos, artwork, and other visual displays, may appear without the ® or ® symbols, but such references are not intended to indicate, in any way, that we will not assert, to the fullest extent under applicable law, our rights or the rights of the applicable licensor to these trademarks, service marks and trade names. We do not intend our use or display of other companies' trade names, service marks or trademarks to imply a relationship with, or endorsement or sponsorship of us by, any other companies. Other trademarks, trade names and service marks appearing in this prospectus and the documents incorporated by reference herein are the property of their respective owners.

### Corporate Overview

We are a clinical-stage medical dermatology company focused on identifying, developing, and commercializing innovative pharmaceutical product candidates for the treatment of medical and aesthetic skin conditions and diseases we believe represent significant market opportunities.

Dermatological diseases such as acne vulgaris (or acne), psoriasis vulgaris (or psoriasis), hyperhidrosis, and various aesthetic indications, affect millions of people worldwide each year which may negatively impact their quality of life and emotional well-being. While there are multiple current treatment options for these indications on the market, we believe that most have significant drawbacks, including underwhelming efficacy, cumbersome application regimens and varying negative side effects, all of which we believe lead to decreased patient compliance. A majority of these indications are first treated with topical therapy, however, many patients frequently switch treatments or discontinue treatment altogether due to patient dissatisfaction. This is primarily due to slow and modest response rates, early onset of negative side effects, daily application schedules and long duration of therapy. Given the limitations with current topical therapies, we believe there is a significant opportunity to address the needs of frustrated patients searching for topical products that satisfy their dermatological and lifestyle needs.

Our two product candidates, DMT310 and DMT410, both incorporate our proprietary, multifaceted, *Spongilla* technology to topically treat a variety of dermatological conditions. Our *Spongilla* technology is derived from a naturally grown freshwater sponge, *Spongilla lacustris* or *Spongilla*, which is processed into a powder that is mixed with a fluidizing agent immediately prior to application to form an easily applicable paste. *Spongilla* is a unique freshwater sponge that only grows in commercial quantities in select regions of the world and under specific environmental conditions, all of which give it its distinctive anti-microbial, anti-inflammatory, and mechanical properties. The combination of these environmental conditions, the proprietary harvesting protocols developed with our exclusive supplier, and our post-harvest processing procedures produce a pharmaceutical product candidate that optimizes the mechanical components as well as the chemical components of the sponge to create a product candidate with multiple mechanisms of action for the treatment of inflammatory skin conditions and aesthetic applications.

We believe our *Spongilla* technology platform will enable us to develop and formulate singular and combination products that are able to target the topical delivery of chemical compounds into the dermis for a variety of dermatology indications. We believe the combination of *Spongilla*'s mechanical and chemical components (which we believe have demonstrated, in-vitro, anti-microbial and anti-inflammatory properties), add to the versatility of our *Spongilla* technology platform's effectiveness as a singular product, in the treatment of a wide variety of medical skin diseases like acne and psoriasis. We also believe the mechanical properties of our *Spongilla* technology allows for the intradermal delivery of a variety of large molecules, like botulinum toxins, monoclonal antibodies, or dermal fillers, to target treatment sites, through topical application without the need for needles.

Our lead product candidate, DMT310, is intended to utilize our *Spongilla* technology for once weekly treatment of a variety of skin diseases, with our initial focus being the treatment of acne vulgaris, which has a U.S. market size of approximately 50 million patients. We have shown DMT310's ability to treat the multiple causes of acne in a Phase 2b study where we initially saw a 45% reduction in inflammatory lesions after four treatments, with statistically significant improvements at all time points for all three primary endpoints throughout the study (reduction in inflammatory lesions, reduction in non-inflammatory lesions, and improvement in Investigator Global Assessment). Based on this Phase 2b data we recently submitted an end of phase 2 meeting package to the FDA to agree on clinical development requirements for the Phase 3 acne program. We received feedback from the FDA in June 2023 and we plan to submit our Phase 3 protocols to the FDA for final approval in the second half of 2023. Once approved, we plan to initiate a Phase 3 program in the second half of 2023. In addition, based on the multiple mechanisms of action and anti-inflammatory effect seen with DMT310 acne trial, we completed a Phase 1b proof of concept, or POC, trial in psoriasis where we saw encouraging results warranting further investigation.

DMT310 consists of two grams of powder processed from the naturally grown freshwater sponge, *Spongilla lacustris*. The patient mixes the powder with a fluidizing agent (hydrogen peroxide) immediately prior to application by the patient to form an easy-to-apply paste. The paste is applied similar to a mud mask and is left on the skin for approximately ten to fifteen minutes, after which time it is washed off with water. Due to the unique combination of DMT310's mechanical components and chemical components, and based on our Phase 2 acne data, we believe patients will only need to apply DMT310 once-weekly to produce a desired treatment effect. The mechanical components of the *Spongilla* powder consist of many microscopic siliceous, needle-like spicules that, when massaged into the skin, penetrate the stratum corneum (the skin's outermost protective layer) and create microchannels into the dermis where pro-inflammatory cytokines and bacteria reside. We believe that the penetration of the spicules also leads to the opening of microchannels, which allow oxygen to enter pilosebaceous glands, helping to kill *C. acnes*, which grow in an anaerobic (without oxygen) environment (*C. acnes* is the bacteria that cause inflammatory lesions in acne patients). The spicules also cause rejuvenation of the top layer of dead skin, thereby increasing collagen production. Additionally, we believe the newly created microchannels provide a conduit for DMT310's naturally occurring chemical compounds to be delivered to the dermis and pilosebaceous glands, helping to kill the *C. acnes* and fight inflammation. In addition to these anti-microbial compounds, DMT310 also appears to have anti-inflammatory chemical compounds, as demonstrated in in vitro experiments, that inhibit inflammation through the reduction of *C. acnes* stimulated IL-8 production and by inhibiting IL-17A and IL-17F expression in human cell lines. Also, during in vitro studies of DMT310's organic compounds, we observed the inhibition of the lipogenesis of sebocytes, which may translate to a reduction in sebum (an oily and waxy substance produced by the human body's sebaceous glands) production and the oiliness of the skin in patients, which was observed by a number of clinical investigators in our Phase 2 acne studies. We believe the combination of these biological and mechanical effects could be important factors in treating multiple inflammatory skin diseases, as seen in our clinical trials.

Our second product candidate utilizing our *Spongilla* technology is DMT410, our combination treatment. DMT410 is intended to consist of one treatment of our proprietary sponge powder followed by one topical application of botulinum toxin for delivery into the dermis. Currently, botulinum toxin is only approved to be delivered to the dermis by intradermal injections, which can be painful for the patient and time-consuming for the physician. However, we believe DMT410's ability to topically deliver botulinum toxin into the dermis could have similar levels of efficacy to existing delivery techniques, with fewer tolerability issues, and a quicker application time, possibly replacing the need for intradermal injections. We first tested DMT410 in a Phase 1 POC trial of axillary hyperhidrosis patients, which saw 80% of patients achieve a reduction in gravimetric sweat production greater than 50% four weeks after a single treatment. With almost 40% of the hyperhidrosis market currently being treated with intradermal injections of botulinum toxin, we believe there could be significant opportunity for DMT410 to break into this market and replace intradermal injections of botulinum toxin. Based on DMT410's ability to effectively deliver botulinum toxin to the dermis as observed in the Phase 1 axillary hyperhidrosis trial, we also conducted a Phase 1 POC trial of DMT410 for the treatment of multiple aesthetic skin conditions, including reduction of pore size, sebum production, and fine lines, among others. In November 2021, we announced top-line results from this trial, where we saw promising data that we believe warrants further investigation of DMT410. We are currently in the process of discussing partnering opportunities with botulinum toxin companies to move the DMT410 program into Phase 2 studies.

## Recent Developments

### *Registered Direct Offering and Private Placement*

On May 23, 2023, we entered into a securities purchase agreement with certain of the selling stockholders for the issuance and sale of 458,555 shares of Common Stock and pre-funded warrants to purchase up to an aggregate of 342,322 shares of Common Stock in a registered direct offering (the “RD Offering”) and the Private Warrants to purchase up to 800,877 shares of Common Stock in a concurrent private placement (the “Private Placement” and together with the RD Offering, the “May 2023 Offering”). The public offering price was \$2.285 for each share of Common Stock and related Private Warrant and \$2.2849 for each pre-funded warrant and related Private Warrant. The Private Warrants have an exercise price of \$2.16 per share, were immediately exercisable upon issuance and have a term of exercise of five and one-half years from the date of issuance. The closing of the issuance and sale of these securities was consummated on May 26, 2023. The gross proceeds from the offering, prior to deducting offering expenses and placement agent fees and expenses payable by us, was approximately \$1.8 million.

Pursuant to a letter agreement dated as of November 27, 2022, as amended December 12, 2022, we engaged H.C. Wainwright & Co., LLC (“Wainwright”) to act as our exclusive placement agent in connection with the May 2023 Offering. We paid to Wainwright (i) a cash fee equal to 7.0% of the aggregate gross proceeds of the May 2023 Offering, excluding the proceeds, if any, from the exercise of the RD Warrants, (ii) a management fee of 1.0% of the aggregate gross proceeds of the May 2023 Offering, and (iii) reimbursed Wainwright for certain expenses and legal fees. In addition, we issued to Wainwright or its designees, PA Warrants to purchase up to 56,061 shares of Common Stock (the “PA Warrant Shares”). The PA Warrants were exercisable immediately upon issuance. The PA Warrants have substantially the same terms as the Private Warrants except that the PA Warrants have a term of exercise equal to five years from the date of the securities purchase agreement and have an exercise price equal to \$2.8563 per share.

This prospectus covers the resale or other disposition by the selling stockholders of the shares of Common Stock issuable upon the exercise of the Warrants.

## Corporate Information

We were formed as a Delaware limited liability company under the name Dermata Therapeutics, LLC in December 2014. On March 24, 2021, we converted into a Delaware corporation and changed our name to Dermata Therapeutics, Inc.

“Dermata” and our other common law trademarks, service marks or trade names appearing herein are the property of Dermata Therapeutics, Inc. We do not intend the use or display of other companies’ trademarks and trade names to imply a relationship with, or endorsement or sponsorship of us by, any other companies.

Our principal offices are located at 3525 Del Mar Heights Rd., #322, San Diego, CA, 92130 and our telephone number is (858) 800-2543. Our website address is [www.dermatarx.com](http://www.dermatarx.com).

Information contained in, or accessible through, our website does not constitute part of this prospectus or registration statement and inclusions of our website address in this prospectus or registration statement are inactive textual references only. You should not rely on any such information in making your decision whether to purchase our securities.

## The Offering

This prospectus relates to the resale or other disposition from time to time by the selling stockholders identified in this prospectus of up to 856,938 shares of Common Stock issuable upon exercise of the Warrants. None of the shares of Common Stock registered hereby are being offered for sale by us.

**Shares of Common Stock offered by the selling stockholders**

Up to 856,938 shares of Common Stock issuable upon exercise of the Warrants.

**Shares of Common Stock outstanding after this offering**

4,045,972 shares, assuming the exercise in full of the Warrants.

**Use of proceeds**

We will not receive any proceeds from the shares of Common Stock offered by the selling stockholders pursuant to this prospectus. However, we will receive the proceeds of any cash exercise of the Warrants. We intend to use the net proceeds from any cash exercise of the Warrants for working capital and general corporate purposes. Please see the section entitled see “Use of Proceeds” on page 7 of this prospectus for a more detailed discussion.

**National Securities Exchange Listing**

Our Common Stock and our Public Warrants are currently listed on Nasdaq under the symbols “DRMA” and “DRMAW,” respectively. There is no established public trading market for the Warrants and we do not expect a market to develop. In addition, we do not intend to apply to list the Warrants on any national securities exchange or other nationally recognized trading system. Without an active trading market, the liquidity of the Warrants will be limited.

**Risk Factors**

An investment in our securities involves a high degree of risk. Please see the section entitled “Risk Factors” beginning on page 5 of this prospectus. In addition before deciding whether to invest in our securities, you should consider carefully the risks and uncertainties described in the section captioned “Risk Factors” contained in our Annual Report on Form 10-K for the fiscal year ended December 31, 2022 filed with the SEC on February 21, 2023, as amended on March 28, 2023, and other filings we make with the SEC from time to time, which are incorporated by reference herein in their entirety, together with other information in this prospectus and the information incorporated by reference herein.

The number of shares of Common Stock to be outstanding upon completion of this offering is based on 3,189,034 of our shares of Common Stock outstanding as of July 6, 2023 and excludes, as of that date, the following:

- 102,074 shares of Common Stock issuable upon exercise of stock options, at a weighted-average exercise price of \$40.77 per share;
- 184,820 shares of Common Stock issuable upon exercise of Public Warrants issued in our initial public offering, at an exercise price of \$112.00 per share;
- 8,035 shares of Common Stock issuable upon exercise of warrants issued to the underwriters in our initial public offering, at an exercise price of \$128.80 per share;
- 235,849 shares of Common Stock issuable upon exercise of warrants issued in our April 2022 private placement offering, at an exercise price of \$2.82 per share;
- 8,398 shares of Common Stock issuable upon exercise of other warrants outstanding, at a weighted-average exercise price of \$213.35 per share;
- 1,618,123 shares of Common Stock issuable upon exercise of Series A Warrants issued in our March 2023 offering, at an exercise price of \$2.82 per share;
- 1,618,123 shares of Common Stock issuable upon exercise of Series B Warrants issued in our March 2023 offering, at an exercise price of \$2.82 per share;
- 113,269 shares of Common Stock issuable upon exercise of warrants issued to our placement agent in our March 2023 offering, at an exercise price of \$3.8625 per share; and
- 127 shares of our Common Stock that are available for future issuance under our 2021 Equity Incentive Plan (the “2021 Plan”) or shares that will become available under our 2021 Plan.

## **RISK FACTORS**

An investment in our securities involves a high degree of risk. Before deciding whether to invest in our securities, you should consider carefully the risks and uncertainties described in the section captioned “Risk Factors” contained in our Annual Report on Form 10-K for the fiscal year ended December 31, 2022 filed with the SEC on February 21, 2023, as amended March 28, 2023, and our other filings we make with the Securities and Exchange Commission from time to time, which are incorporated by reference herein in their entirety, together with other information in this prospectus and the information incorporated by reference herein. If any of these risks actually occurs, our business, financial condition, results of operations or cash flow could suffer materially. In such an event, the trading price of our shares of Common Stock could decline, and you might lose all or part of your investment.



## CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS

Except for historical information, this prospectus contains forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended, (the “Securities Act”) and Section 21E of the Exchange Act of 1934, as amended (the “Exchange Act”). Forward-looking statements include statements with respect to our beliefs, plans, objectives, goals, expectations, anticipations, assumptions, estimates, intentions and future performance, and involve known and unknown risks, uncertainties and other factors, which may be beyond our control, and which may cause our actual results, performance or achievements to be materially different from future results, performance or achievements expressed or implied by such forward-looking statements. All statements other than statements of historical fact are statements that could be forward-looking statements. You can identify these forward-looking statements through our use of words such as “may,” “can,” “anticipate,” “assume,” “should,” “indicate,” “would,” “believe,” “contemplate,” “expect,” “seek,” “estimate,” “continue,” “plan,” “point to,” “project,” “predict,” “could,” “intend,” “target,” “potential” and other similar words and expressions of the future.

There are a number of important factors that could cause the actual results to differ materially from those expressed in any forward-looking statement made by us. These factors include, but are not limited to:

- our lack of operating history;
- the expectation that we will incur significant operating losses for the foreseeable future and will need significant additional capital;
- our current and future capital requirements to support our development and commercialization efforts for our product candidates and our ability to satisfy our capital needs;
- our dependence on our product candidates, which are still in preclinical or early stages of clinical development;
- our ability to acquire sufficient quantities of raw material needed to manufacture our drug product;
- our, or that of our third-party manufacturers, ability to manufacture cGMP quantities of our product candidates as required for pre-clinical and clinical trials and, subsequently, our ability to manufacture commercial quantities of our product candidates;
- our ability to complete required clinical trials for our product candidates and obtain approval from the FDA or other regulatory agencies in different jurisdictions;
- our lack of a sales and marketing organization and our ability to commercialize our product candidates if we obtain regulatory approval;
- our dependence on third-parties to manufacture our product candidates;
- our reliance on third-party CROs to conduct our clinical trials;
- our ability to maintain or protect the validity of our intellectual property;
- 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 accuracy of our estimates regarding expenses and capital requirements;
- our ability to adequately support organizational and business growth; and
- other factors discussed under the section “Risk Factors” in this prospectus and in our most recent Annual Report on Form 10-K.

The foregoing does not represent an exhaustive list of matters that may be covered by the forward-looking statements contained herein or risk factors that we are faced with that may cause our actual results to differ from those anticipated in such forward-looking statements. The events and circumstances reflected in our forward-looking statements may not be achieved or occur and actual results could differ materially from those projected in the forward-looking statements. You should review the factors and risks and other information we describe in our most recent Annual Report on Form 10-K, as well as any amendments thereto reflected in subsequent reports we will file from time to time with the SEC.

All forward-looking statements are expressly qualified in their entirety by this cautionary note. You are cautioned to not place undue reliance on any forward-looking statements, which speak only as of the date of this prospectus or the date of the document incorporated by reference herein. You should read this prospectus and the documents that we incorporate by reference and have filed as exhibits to the registration statement, of which this prospectus is a part, completely and with the understanding that our actual future results may be materially different from what we expect. We have no obligation, and expressly disclaims any obligation, to update, revise or correct any of the forward-looking statements, whether as a result of new information, future events or otherwise. We have expressed our expectations, beliefs and projections in good faith and believe they have a reasonable basis. However, we cannot assure you that our expectations, beliefs or projections will result or be achieved or accomplished.

## USE OF PROCEEDS

We will not receive any proceeds from the sale of Common Stock offered by the selling stockholders under this prospectus. However, we will receive the proceeds of any cash exercise of the Warrants. If all of the Warrants were exercised for cash, we would receive aggregate proceeds of approximately \$1.9 million. We intend to use the net proceeds from any cash exercise of the Warrants for working capital and general corporate purposes.

This expected use of the net proceeds from this resale represents our intentions based upon our current plans and business conditions, and our management will retain broad discretion as to the ultimate allocation of the proceeds. We may temporarily invest funds that we do not immediately need for these purposes in investment securities or use them to make payments on our borrowings.

## SELLING STOCKHOLDERS

This prospectus covers the resale or other disposition by the selling stockholders identified in the table below of up to an aggregate of 856,938 shares of our Common Stock issuable upon the exercise of the Warrants.

The selling stockholders acquired their securities in the transaction described above under the heading “Summary – Recent Developments.”

The Warrants held by the selling stockholders contain limitations which prevent the holder from exercising such Warrants if such exercise would cause the selling stockholder, together with certain related parties, to beneficially own a number of shares of Common Stock which would exceed 4.99% of our then outstanding shares of Common Stock following such exercise, excluding for purposes of such determination, shares of Common Stock issuable upon exercise of the Warrants which have not been exercised.

The table below sets forth, as of July 6, 2023, the following information regarding the selling stockholders:

- the names of the selling stockholders;
- the number of shares of Common Stock owned by the selling stockholders prior to this offering, without regard to any beneficial ownership limitations contained in the Warrants;
- the number of shares of Common Stock to be offered by the selling stockholders in this offering;
- the number of shares of Common Stock to be owned by the selling stockholders assuming the sale of all of the shares of Common Stock covered by this prospectus; and
- the percentage of our issued and outstanding shares of Common Stock to be owned by the selling stockholders assuming the sale of all of the shares of Common Stock covered by this prospectus based on the number of shares of Common Stock issued and outstanding as of July 6, 2023.

Except as described above, the number of shares of Common Stock beneficially owned by the selling stockholder has been determined in accordance with Rule 13d-3 under the Exchange Act and includes, for such purpose, shares of Common Stock that the selling stockholder has the right to acquire within 60 days of July 6, 2023.

All information with respect to the common stock ownership of the selling stockholder has been furnished by or on behalf of the selling stockholder. We believe, based on information supplied by the selling stockholder, that except as may otherwise be indicated in the footnotes to the table below, the selling stockholder has sole voting and dispositive power with respect to the shares of Common Stock reported as beneficially owned by it. Because the selling stockholders identified in the table may sell some or all of the shares of Common Stock beneficially owned by them and covered by this prospectus, and because there are currently no agreements, arrangements or understandings with respect to the sale of any of the shares of Common Stock, no estimate can be given as to the number of shares of Common Stock available for resale hereby that will be held by the selling stockholders upon termination of this offering. In addition, the selling stockholders may have sold, transferred or otherwise disposed of, or may sell, transfer or otherwise dispose of, at any time and from time to time, the shares of Common Stock they beneficially own in transactions exempt from the registration requirements of the Securities Act after the date on which they provided the information set forth in the table below. We have, therefore, assumed for the purposes of the following table, that the selling stockholder will sell all of the shares of Common Stock owned beneficially by it that are covered by this prospectus, but will not sell any other shares of Common Stock that they presently own. The selling stockholders have not held any position or office, or have otherwise had a material relationship, with us or any of our subsidiaries within the past three years other than as a result of the ownership of our shares of Common Stock or other securities.

Name of Selling Stockholders	Shares Owned prior to Offering	Shares Offered by this Prospectus	Shares Owned after Offering	Percentage of Shares Beneficially Owned after Offering (1)
Armistice Capital, LLC (2)	4,097,917	625,822	3,490,095	4.99%
Intracoastal Capital LLC (3)	199,055	175,055	24,000	4.99%
Noam Rubinstein (4)	53,339	17,659	35,680	*
Craig Schwabe (4)	5,715	1,892	3,823	*
Michael Vasinkevich (4)	108,582	35,949	72,633	*
Charles Worthman (4)	1,694	561	1,133	*

\* Less than 1%

- (1) Percentage is based on 4,045,972 shares of Common Stock outstanding as of July 6, 2023, assuming the resale of all of the shares of Common Stock covered by this prospectus.
- (2) Consists of warrants to purchase shares of Common Stock (including Private Warrants to purchase up to 625,822 shares of Common Stock). The exercise of the warrants held by Armistice Capital Master Fund Ltd. (the “Master Fund”), including the Private Warrants, are subject to a 4.99% beneficial ownership limitation which prohibit Armistice (as defined below) from exercising any portion of those warrants to the extent that, following such exercise, the Master Fund would hold a number of our shares of Common Stock exceeding the applicable beneficial ownership limitation. The number of shares listed in the second and fourth columns are based on the number of shares of Common Stock and warrants held by the Master Fund, assuming exercise in full of the Private Warrants without regard to any limitations on exercise, but the percentage set forth in the fifth column is limited by the 4.99% beneficial ownership blocker in the Private Warrants. The securities are directly held by the Master Fund, a Cayman Islands exempted company, and may be deemed to be beneficially owned by Armistice Capital, LLC (“Armistice”), as the investment manager of the Master Fund; and (ii) Steven Boyd, as the Managing Member of Armistice. The address of Armistice Capital Master Fund Ltd. is c/o Armistice Capital, LLC, 510 Madison Avenue, 7<sup>th</sup> Floor, New York, NY 10022.
- (3) Consists of (i) Public Warrants to purchase up to 24,000 shares of Common Stock and (ii) Private Warrants to purchase up to 175,055 shares of Common Stock. The exercise of each of the Public Warrants and the Private Warrants held by Intracoastal Capital LLC (“Intracoastal”) is subject to a 4.99% beneficial ownership limitation, which prohibits Intracoastal from exercising any portion of those warrants to the extent that, following such exercise, Intracoastal would own a number of our shares of Common Stock exceeding the applicable beneficial ownership limitation. The number of shares listed in the second and fourth columns are based on the number of shares of Public Warrants and Private Warrants held by Intracoastal, assuming exercise in full of the Public Warrants and Private Warrants without regard to any limitations on exercise, but the percentage set forth in the fifth column is limited by the 4.99% beneficial ownership blocker in the Public Warrants and the Private Warrants. Mitchell P. Kopin (“Mr. Kopin”) and Daniel B. Asher (“Mr. Asher”), each of whom are managers of Intracoastal, have shared voting control and investment discretion over the securities reported herein that are held by Intracoastal. As a result, each of Mr. Kopin and Mr. Asher may be deemed to have beneficial ownership (as determined under Section 13(d) of the Securities Exchange Act of 1934, as amended (the “Exchange Act”)) of the securities reported herein that are held by Intracoastal. The address of Intracoastal Capital LLC is 245 Palm Trail, Delray Beach, Florida 33483.
- (4) Each of the selling stockholders is affiliated with H.C. Wainwright & Co., LLC, a registered broker dealer with a registered address of H.C. Wainwright & Co., LLC, 430 Park Ave, 3rd Floor, New York, NY 10022, and has sole voting and dispositive power over the securities held. The number of shares beneficially owned prior to this offering consist of shares of common stock issuable upon exercise of PA Warrants, which were received as compensation in connection with the May 2023 Offering and a registered direct offering consummated by us in March 2023. The selling stockholder acquired the PA Warrants in the ordinary course of business and, at the time the PA Warrants were acquired, the selling stockholder had no agreement or understanding, directly or indirectly, with any person to distribute such securities.

## DESCRIPTION OF SECURITIES

### Authorized Capitalization

We have 260,000,000 shares of capital stock authorized under our amended and restated certificate of incorporation, consisting of 250,000,000 shares of Common Stock with a par value of \$0.0001 per share and 10,000,000 shares of preferred stock with a par value of \$0.0001 per share. As of July 6, 2023, there were 3,189,034 shares of Common Stock outstanding and no shares of preferred stock outstanding. Our authorized but unissued shares of Common Stock and preferred stock are available for issuance without further action by our stockholders, unless such action is required by applicable law or the rules of any stock exchange or automated quotation system on which our securities may be listed or traded in the future.

### Common Stock

Holders of our Common Stock are entitled to such dividends as may be declared by our board of directors out of funds legally available for such purpose. The shares of Common Stock are neither redeemable nor convertible. Holders of Common Stock have no preemptive or subscription rights to purchase any of our securities.

Each holder of our Common Stock is entitled to one vote for each such share outstanding in the holder's name. No holder of Common Stock is entitled to cumulate votes in voting for directors.

In the event of our liquidation, dissolution or winding up, the holders of our Common Stock are entitled to receive pro rata our assets, which are legally available for distribution, after payments of all debts and other liabilities. All of the outstanding shares of our Common Stock are fully paid and non-assessable.

### Anti-Takeover Effects of Delaware law and Our Certificate of Incorporation and Bylaws

The provisions of Delaware law, our Certificate of Incorporation and our may have the effect of delaying, deferring or discouraging another party from acquiring control of us.

#### *Section 203 of the Delaware General Corporation Law*

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

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

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

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

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

#### *Certificate of Incorporation and Bylaws*

Our Certificate of Incorporation and Bylaws provide for:

- authorizing the issuance of "blank check" preferred stock, the terms of which may be established and shares of which may be issued without stockholder approval;
- requiring a supermajority vote of stockholders to amend our bylaws or certain provisions our certificate of incorporation;
- prohibiting stockholder action by written consent, thereby requiring all stockholder actions to be taken at a meeting of our stockholders;
- eliminating the ability of stockholders to call a special meeting of stockholders;
- establishing advance notice requirements for nominations for election to the board of directors or for proposing matters that can be acted upon at stockholder meetings;
- establishing Delaware as the exclusive jurisdiction for certain stockholder litigation against us; and
- a classified board of directors.

## Private Warrants

The Private Warrants were issued in a private placement that occurred on May 23, 2023 in connection with a registered direct offering of our Common Stock and pre-funded warrants to purchase common shares. As of July 1, 2023, the Private Warrants were exercisable for an aggregate of 800,877 shares of Common Stock.

**Exercisability.** The Warrants were exercisable immediately and expire on November 27, 2028. The Private Warrants are exercisable, at the option of each holder, in whole or in part by delivering to us a duly executed exercise notice and, at any time a registration statement registering the issuance of the Common Stock underlying the Private Warrants under the Securities Act is effective and available for the issuance of such shares, or an exemption from registration under the Securities Act is available for the issuance of such shares, by payment in full in immediately available funds for the number of Common Stock purchased upon such exercise. If at the time of exercise there is no effective registration statement registering, or the prospectus contained therein is not available for the issuance of the Common Stock underlying the Private Warrants, then the Private Warrants may also be exercised, in whole or in part, at such time by means of a cashless exercise, in which case the holder would receive upon such exercise the net number of common shares determined according to the formula set forth in the Warrant.

**Exercise Limitation.** A holder will not have the right to exercise any portion of the Warrant if the holder (together with its affiliates) would beneficially own in excess of 4.99% (or 9.99% upon the request of the investor) of the number of Common Stock outstanding immediately after giving effect to the exercise, as such percentage ownership is determined in accordance with the terms of the Private Warrants. However, any holder may increase or decrease such percentage, provided that any increase will not be effective until the 61<sup>st</sup> day after such election.

**Exercise Price.** The Private Warrants have an exercise price of \$2.16 per share. The exercise price is subject to appropriate adjustment in the event of certain stock dividends and distributions, stock splits, stock combinations, reclassifications or similar events affecting our common shares and also upon any distributions of assets, including cash, stock or other property to our stockholders.

**Transferability.** Subject to applicable laws, the Private Warrants may be offered for sale, sold, transferred or assigned without our consent.

**Exchange Listing.** There is no established public trading market for the Private Warrants and we do not expect a market to develop. We do not intend to apply for listing of the Private Warrants on any securities exchange or other nationally recognized trading system. Without an active trading market, the liquidity of the Private Warrants will be limited.

**Fundamental Transactions.** In the event of any fundamental transaction, as described in the Private Warrants and generally including any merger with or into another entity, sale of all or substantially all of our assets, tender offer or exchange offer, or reclassification of our Common Stock, then upon any subsequent exercise of the Private Warrants, the holder will have the right to receive as alternative consideration, for each Common Share that would have been issuable upon such exercise immediately prior to the occurrence of such fundamental transaction, the number of Common Stock of the successor or acquiring corporation or of our company, if it is the surviving corporation, and any additional consideration receivable upon or as a result of such transaction by a holder of the number of Common Stock for which the Warrant is exercisable immediately prior to such event. If holders of Common Stock are given any choice as to the securities, cash or property to be received in a Fundamental Transaction, then the holder shall be given the same choice as to the alternate consideration it receives upon any exercise of the Private Warrant following the Fundamental Transaction. Notwithstanding anything to the contrary, in the event of a Fundamental Transaction (other than (x) any stock split or reverse stock split, (y) any transaction effected solely for the purpose of changing the jurisdiction of incorporation of the Company, or (z) any holding company reorganization or parent-sub subsidiary merger not requiring stockholder approval, the Company or any successor entity will, at the holder's option, exercisable at any time concurrently with, or within 30 days after, the consummation of the Fundamental Transaction (or, if later, the date of the public announcement of the applicable Fundamental Transaction), purchase the Private Warrant from the holder by paying to the holder an amount of cash equal to the Black Scholes Value (as defined in the Private Warrants) of the remaining unexercised portion of the Private Warrant on the date of the consummation of the Fundamental Transaction; provided, however, that, if the Fundamental Transaction is not within the Company's control, including not approved by the Company's Board of Directors, the holder will only be entitled to receive from the Company or any successor entity, as of the date of consummation of the Fundamental Transaction, the same type or form of consideration (and in the same proportion), at the Black Scholes Value of the unexercised portion of the Private Warrant, that is being offered and paid to the holders of Common Stock of the Company in connection with the Fundamental Transaction, whether that consideration be in the form of cash, stock or any combination thereof, or whether the holders of Common Stock are given the choice to receive from among alternative forms of consideration in connection with the Fundamental Transaction; provided, further, that if holders of Common Stock of the Company are not offered or paid any consideration in such Fundamental Transaction, such holders of Common Stock will be deemed to have received common stock of the successor entity (which entity may be the Company following such Fundamental Transaction) in such Fundamental Transaction.

**Rights as a Stockholder.** Except as otherwise provided in the Private Warrants or by virtue of such holder's ownership of our common shares, the holder of a Warrant does not have the rights or privileges of a holder of our common shares, including any voting rights, until the holder exercises the Warrant.

**Registration Rights.** We have filed this registration statement with the SEC that includes this prospectus to register for resale under the Securities Act of 1933, the common shares issuable upon exercise of the Private Warrants to satisfy our obligations in connection with the May 2023 Offering. We will use commercially reasonable efforts to keep registration statement effective at all times until the selling stockholders no longer owns any Warrants or shares issuable upon exercise thereof.

## PA Warrants

The PA Warrants have substantially the same terms as the Private Warrants except that the PA Warrants have a term of exercise equal to five years from the date of the securities purchase agreement and have an exercise price equal to \$2.8563 per share.

## PLAN OF DISTRIBUTION

The selling stockholders, which as used herein includes donees, pledgees, transferees or other successors-in-interest selling the shares of Common Stock, or interests in the shares of Common Stock received after the date of this prospectus from a selling stockholder as a gift, pledge, partnership distribution or other transfer, may, from time to time, sell, transfer or otherwise dispose of any or all of their shares of Common Stock or interests in the shares of Common Stock on any stock exchange, market or trading facility on which the shares are traded or in private transactions. The selling stockholders may sell all or a portion of the shares of Common Stock held by them and offered hereby from time to time directly or through one or more underwriters, broker-dealers or agents. If the shares of Common Stock are sold through underwriters or broker-dealers, the selling stockholders will be responsible for underwriting discounts or commissions or agent's commissions. The shares of Common Stock may be sold in one or more transactions at fixed prices, at prevailing market prices at the time of the sale, at varying prices determined at the time of sale or at negotiated prices. These sales may be effected in transactions, which may involve crosses or block transactions, pursuant to one or more of the following methods:

- on any national securities exchange or quotation service on which the securities may be listed or quoted at the time of sale;
- in the over-the-counter market;
- in transactions otherwise than on these exchanges or systems or in the over-the-counter market;
- through the writing or settlement of options or other hedging transactions, whether such options are listed on an options exchange or otherwise;
- ordinary brokerage transactions and transactions in which the broker-dealer solicits purchasers;
- block trades in which the broker-dealer will attempt to sell the shares as agent but may position and resell a portion of the block as principal to facilitate the transaction;
- purchases by a broker-dealer as principal and resale by the broker-dealer for its account;
- an exchange distribution in accordance with the rules of the applicable exchange;
- privately negotiated transactions;
- short sales effected after the date the registration statement of which this prospectus is a part was declared effective by the SEC;
- broker-dealers may agree with a selling stockholder to sell a specified number of such shares at a stipulated price per share;
- a combination of any such methods of sale; and
- any other method permitted pursuant to applicable law.

The aggregate proceeds to the selling stockholders from the sale of the shares of Common Stock offered by them will be the purchase price of the shares of Common Stock less discounts or commissions, if any. The selling stockholders reserve the right to accept and, together with their agents from time to time, to reject, in whole or in part, any proposed purchase of shares of Common Stock to be made directly or through agents. We will not receive any of the proceeds from sales of shares by the selling stockholders.

The selling stockholders may also sell shares of Common Stock under Rule 144 promulgated under the Securities Act, if available, rather than under this prospectus. In addition, the selling stockholders may transfer the shares of Common Stock by other means not described in this prospectus. If the selling stockholders effect such transactions by selling shares of Common Stock to or through underwriters, broker-dealers or agents, such underwriters, broker-dealers or agents may receive commissions in the form of discounts, concessions or commissions from the selling stockholders or commissions from purchasers of the shares of Common Stock for whom they may act as agent or to whom they may sell as principal (which discounts, concessions or commissions as to particular underwriters, broker-dealers or agents may be in excess of those customary in the types of transactions involved but, except as set forth in a supplement to this prospectus to the extent required, in the case of an agency transaction will not be in excess of a customary brokerage commission in compliance with FINRA Rule 5110).

In connection with sales of the shares of Common Stock or otherwise, the selling stockholders may enter into hedging transactions with broker-dealers or other financial institutions, which may in turn engage in short sales of the shares of Common Stock in the course of hedging in positions they assume. The selling stockholders may also sell shares of Common Stock short and deliver shares of Common Stock covered by this prospectus to close out short positions and to return borrowed shares in connection with such short sales. The selling stockholders may also loan or pledge shares of Common Stock to broker-dealers that in turn may sell such shares. The selling stockholders may also enter into option or other transactions with broker-dealers or other financial institutions or the creation of one or more derivative securities which require the delivery to such broker-dealer or other financial institution of shares of Common Stock offered by this prospectus, which shares of Common Stock such broker-dealer or other financial institution may resell pursuant to this prospectus (as supplemented or amended to reflect such transaction).

The selling stockholders may pledge or grant a security interest in some or all of the shares of Common Stock owned by it and, if they default in the performance of their secured obligations, the pledgees or secured parties may offer and sell the shares of Common Stock from time to time pursuant to this prospectus or any amendment to this prospectus under Rule 424(b)(3) or other applicable provision of the Securities Act amending, if necessary, the list of selling stockholders to include the pledgee, transferee or other successors in interest as selling stockholders under this prospectus. The selling stockholders also may transfer and donate the shares of Common Stock in other circumstances as permitted by applicable law, in which case the transferees, donees, pledgees or other successors in interest will be the selling beneficial owners for purposes of this prospectus.

To the extent required by the Securities Act and the rules and regulations thereunder, the selling stockholders and any broker-dealer participating in the distribution of the shares of Common Stock may be deemed to be “underwriters” within the meaning of the Securities Act. In such event, any commission paid, or any discounts or concessions allowed to, any such broker-dealer may be deemed to be underwriting commissions or discounts under the Securities Act. Selling stockholders who are deemed to be “underwriters” under the Securities Act (if any) will be subject to the prospectus delivery requirements of the Securities Act and may be subject to certain statutory liabilities of, including but not limited to, Sections 11, 12 and 17 of the Securities Act and Rule 10b-5 under the Exchange Act.

Each selling stockholder has informed us that it is not a registered broker-dealer and does not have any written or oral agreement or understanding, directly or indirectly, with any person to engage in a distribution of the shares of Common Stock. Upon us being notified in writing by a selling stockholder that any material arrangement has been entered into with a broker-dealer for the distribution of shares of Common Stock, a prospectus supplement, if required, will be distributed, which will set forth the aggregate amount of shares of Common Stock being distributed and the terms of the offering, including the name or names of any broker-dealers or agents, any discounts, commissions and other terms constituting compensation from the selling stockholders and any discounts, commissions or concessions allowed or re-allowed or paid to broker-dealers.

Under the securities laws of some states, the shares of Common Stock may be sold in such states only through registered or licensed brokers or dealers. In addition, in some states the shares of Common Stock may not be sold unless such shares have been registered or qualified for sale in such state or an exemption from registration or qualification is available and is complied with.

The selling stockholders may sell all, some or none of the shares of Common Stock registered pursuant to the registration statement of which this prospectus forms a part. If sold under the registration statement of which this prospectus forms a part, the shares of Common Stock registered hereunder will be freely tradable in the hands of persons other than our affiliates that acquire such shares.

We have advised the selling stockholders that the anti-manipulation rules of Regulation M under the Exchange Act may apply to sales of shares of Common Stock in the market and to the activities of the selling stockholder and its affiliates. In addition, to the extent applicable, we will make copies of this prospectus (as it may be supplemented or amended from time to time) available to the selling stockholder for the purpose of satisfying the prospectus delivery requirements of the Securities Act. The selling stockholders may indemnify any broker-dealer that participates in transactions involving the sale of the shares of Common Stock against certain liabilities, including liabilities arising under the Securities Act.



## LEGAL MATTERS

The validity of the shares of Common Stock offered hereby will be passed upon for us by Lowenstein Sandler LLP, New York, New York.

## EXPERTS

The financial statements of Dermata Therapeutics, Inc. (formerly Dermata Therapeutics, LLC) (“Company”) as of and for the years ended December 31, 2022 and 2021, appearing in the Company’s Annual Report on Form 10-K for the year ended December 31, 2022, have been audited by Mayer Hoffman McCann P.C., independent registered public accounting firm, as set forth in their report (which report includes an explanatory paragraph regarding the existence of substantial doubt about the Company’s ability to continue as a going concern), and have been incorporated herein by reference in reliance upon such report given on the authority of such firm as experts in accounting and auditing, in giving said reports.

## INFORMATION INCORPORATED BY REFERENCE

The SEC allows us to “incorporate by reference” information that we file with it into this prospectus, which means that we can disclose important information to you by referring you to those documents. The information incorporated by reference is an important part of this prospectus. The information incorporated by reference is considered to be a part of this prospectus, and information that we file later with the SEC will automatically update and supersede information contained in this prospectus.

We incorporate by reference the documents listed below that we have previously filed with the SEC:

- our Annual Report on Form 10-K for the fiscal year ended December 31, 2022 filed with the SEC on February 21, 2023, as amended March 28, 2023;
- our Quarterly Report on Form 10-Q for the quarter ended March 31, 2023 filed with the SEC on May 11, 2023;
- our Definitive Proxy Statements on Schedule 14A filed with the SEC on January 13, 2023 and June 23, 2023; and
- our Current Reports on Form 8-K filed with the SEC on February 8, 2023, March 13, 2023, March 20, 2023, March 28, 2023, and May 24, 2023 (other than any portions thereof deemed furnished and not filed);

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 of this prospectus but prior to 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. Any statement contained in a document incorporated by reference in this prospectus shall be deemed to be modified or superseded to the extent that a statement contained herein, therein or in any other subsequently filed document that also is incorporated by reference herein or therein modifies or supersedes such statement. Any statement so modified or superseded shall not be deemed, except as so modified or superseded, to constitute a part of this prospectus or the registration statement.

We will provide you without charge, upon your oral or written request, with a copy of any or all reports, proxy statements and other documents we file with the SEC, as well as any or all of the documents incorporated by reference in this prospectus or the registration statement (other than exhibits to such documents unless such exhibits are specifically incorporated by reference into such documents). Requests for such copies should be directed to

Dermata Therapeutics, Inc.  
Attn: Gerald T. Proehl  
President and CEO  
3525 Del Mar Heights, Rd., #322  
San Diego, California 92130  
Telephone: 858-800-2543

## WHERE YOU CAN FIND MORE INFORMATION

We have filed with the SEC a registration statement on Form S-1 under the Securities Act with respect to the shares of Common Stock offered by this prospectus. This prospectus, which is part of the registration statement, omits certain information, exhibits, schedules and undertakings set forth in the registration statement. For further information pertaining to us and our securities, reference is made to our SEC filings and the registration statement and the exhibits and schedules to the registration statement. Statements contained in this prospectus as to the contents or provisions of any documents referred to in this prospectus are not necessarily complete, and in each instance where a copy of the document has been filed as an exhibit to the registration statement, reference is made to the exhibit for a more complete description of the matters involved.

In addition, registration statements and certain other filings made with the SEC electronically are publicly available through the SEC's web site at <http://www.sec.gov>. The registration statement, including all exhibits and amendments to the registration statement, has been filed electronically with the SEC.

We are subject to the information and periodic reporting requirements of the Securities Exchange Act of 1934, as amended, and, in accordance with such requirements, will file periodic reports, proxy statements, and other information with the SEC. These periodic reports, proxy statements, and other information will be available for inspection and copying at the web site of the SEC referred to above. We also maintain a website at <https://www.dermatarx.com>, at which you may access these materials free of charge as soon as reasonably practicable after they are electronically filed with, or furnished to, the SEC. The information contained in, or that can be accessed through, our website is not part of, and is not incorporated into, this prospectus. We have included our website address in this prospectus solely as an inactive textual reference.



**856,938 Shares of Common Stock**

**PRELIMINARY PROSPECTUS**

**, 2023**

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**PART II**

**INFORMATION NOT REQUIRED IN PROSPECTUS**

**Item 13. Other Expenses of Issuance and Distribution**

The following table sets forth the costs and expenses, other than placement agent fees, paid or payable by Dermata Therapeutics, Inc., or the Registrant, in connection with the sale and distribution of the securities being registered. All amounts are estimated except the SEC registration fee.

<b>Item</b>	<b>Amount</b>
SEC registration fee	\$ 155.34
Legal fees and expenses	33,000.00
Accounting fees and expenses	20,000.00
Printing and engraving expenses	3,000.00
Transfer agent and registrar fees and expenses	1,000.00
Miscellaneous fees and expenses	844.66
<i>Total</i>	<u>\$ 58,000.00</u>

**Item 14. Indemnification of Directors and Officers**

As permitted by Section 102 of the Delaware General Corporation Law, we have adopted provisions in our amended and restated certificate of incorporation and bylaws that limit or eliminate the personal liability of our directors for a breach of their fiduciary duty of care as a director. The duty of care generally requires that, when acting on behalf of the corporation, directors exercise an informed business judgment based on all material information reasonably available to them. Consequently, a director will not be personally liable to us or our stockholders for monetary damages for breach of fiduciary duty as a director, except for liability for:

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

These limitations of liability do not affect the availability of equitable remedies such as injunctive relief or rescission. Our amended and restated certificate of incorporation also authorizes us to indemnify our officers, directors and other agents to the fullest extent permitted under Delaware law.

As permitted by Section 145 of the Delaware General Corporation Law, our bylaws provide that:

- we may indemnify our directors, officers, and employees to the fullest extent permitted by the Delaware General Corporation Law, subject to limited exceptions;
- we may advance expenses to our directors, officers and employees in connection with a legal proceeding to the fullest extent permitted by the Delaware General Corporation Law, subject to limited exceptions; and
- the rights provided in our bylaws are not exclusive.

Our amended and restated certificate of incorporation, to be attached as Exhibit hereto, and our amended and restated bylaws, to be attached as Exhibit hereto, provide for the indemnification provisions described above and elsewhere herein. We have entered into and intend to continue to enter into separate indemnification agreements with our directors and officers which may be broader than the specific indemnification provisions contained in the Delaware General Corporation Law. These indemnification agreements generally require us, among other things, to indemnify our officers and directors against liabilities that may arise by reason of their status or service as directors or officers, other than liabilities arising from willful misconduct. These indemnification agreements also generally require us to advance any expenses incurred by the directors or officers as a result of any proceeding against them as to which they could be indemnified. In addition, we have purchased a policy of directors' and officers' liability insurance that insures our directors and officers against the cost of defense, settlement or payment of a judgment in some circumstances. These indemnification provisions and the indemnification agreements may be sufficiently broad to permit indemnification of our officers and directors for liabilities, including reimbursement of expenses incurred, arising under the Securities Act of 1933, as amended, or the Securities Act.

**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:

***Original Issuances of Stock***

On March 24, 2021, we converted from a limited liability company to a Delaware corporation and we changed our name to Dermata Therapeutics, Inc., resulting in a new capital structure consisting of common stock and preferred stock, each having a par value of \$0.0001. This conversion resulted in conversion of the prior Dermata members' interests into an aggregate of 65,823,015 shares of our preferred stock (which converted into 231,349 shares of common stock upon the closing of our initial public offering), and 119,438 shares of our common stock.

In connection with our conversion to a Delaware corporation, we also issued warrants exercisable for 1,419,228 shares of our preferred stock (or the Preferred Stock Warrants) and warrants exercisable for 4,081 shares of our common stock (or the Common Stock Warrants). The Preferred Stock Warrants had an exercise price of \$1.00 per share and the Common Stock Warrants have an exercise price of \$91.84 per share. Upon the closing of our initial public offering, all of the outstanding Preferred Stock Warrants were converted into Common Stock Warrants with an exercise price of \$328.00 exercisable for an aggregate of 4,321 shares of common stock.

***Convertible Promissory Note Offering***

In July 2020, we held the first closing of the Notes for an aggregate principal amount of \$2,330,000, including \$500,000 from Proehl Investment Ventures, LLC. In October 2020, we held the second closing of the Notes for an aggregate principal amount of \$670,000, including \$420,000 from Proehl Investment Ventures, LLC. In February 2021, we held the third closing of the Notes for an aggregate principal amount of \$1,556,000, including \$825,000 from Proehl Investment Ventures, LLC, \$100,000 from the Sean Michael Proehl Irrevocable Trusts Dated December 18, 2020, and \$250,000 from Hale Biopharma Ventures, LLC.

On March 15, 2021, we completed the conversion of \$4,391,000 of Notes into 5,379,247 Series 1d Preferred Units. At that time Proehl Investment Ventures, LLC, Sean Michael Proehl Irrevocable Trusts Dated December 18, 2020 and Hale Biopharma Ventures, LLC held an aggregate principal amount of \$1,745,000, \$100,000 and \$250,000 of Notes, respectively. Mr. Proehl, our President and Chief Executive Officer and a member of the board of directors, is the managing member of Proehl Investment Ventures, LLC and the trustee of Sean Michael Proehl Irrevocable Trusts Dated December 18, 2020. Mr. Hale, a member of the board of directors, is the managing member of Hale Biopharma Ventures, LLC. In addition, Wendell Wierenga, a member of our board of directors, held \$45,000 principal amount of the Notes. Each of Messrs. Proehl, Hale and Wierenga converted their aggregate principal amounts of Notes into Series 1d Preferred Units on March 15, 2021, which units were subsequently converted into shares of our Series 1d Preferred Stock in connection with our conversion to a Delaware corporation. The shares of Series 1d Preferred Stock held by Mr. Proehl, Hale and Wierenga automatically converted into 20,843, 2,798 and 508 shares of common stock, respectively, upon the completion of our initial public offering, at a conversion price equal to \$89.60 (80% of the initial offering price).

The Notes had an interest rate of 4.0% per annum, were unsecured, had a maturity date of December 31, 2021 and provided for conversion into our common stock upon the earlier of (i) qualified Series A Financing (as defined in the Notes) which resulted in aggregate gross proceeds to the Company of at least Ten Million Dollars (\$10,000,000), or (ii) the closing of our initial public offering.

At the closing of our initial public offering the aggregate principal amount and all accrued but unpaid interest on the Notes automatically converted into an aggregate of 2,103 shares of our common stock at a conversion price of \$89.60 per share (which was 80% of the initial offering price).

### ***Stock Options***

On March 24, 2021, in connection with our conversion from a limited liability company to a Delaware corporation, we issued common stock options exercisable for an aggregate of 24,887 shares of our common stock. These options have an exercise price of \$91.84 per share.

### ***Underwriter Warrants***

Upon the closing of our initial public offering, we issued to the underwriters warrants exercisable for a period of five years from the closing of the initial public offering which entitle the underwriters to purchase 8,035 shares of common stock, at an exercise price equal to 115% of the public offering price, or \$128.80 per share.

### ***April 2022 Private Placement***

On April 20, 2022, we entered into a securities purchase agreement (the "Purchase Agreement") with the selling stockholder listed on the signature page thereto for the issuance and sale of (i) 56,161 shares of common stock, (ii) pre-funded warrants (the "2022 Pre-Funded Warrants") to purchase up to an aggregate of 179,687 shares of common stock and (iii) Common Warrants (the "2022 Common Warrants" and together with the 2022 Pre-Funded Warrants, the "2022 Warrants") to purchase up to an aggregate of 235,849 shares of common stock (the "Private Placement"). The purchase price per share of common stock and associated 2022 Common Warrant was \$21.20 and the purchase price per 2022 Pre-Funded Warrant and associated 2022 Common Warrant was \$21.18.

Pursuant to the placement agent agreement entered into between us and Maxim Group LLC ("Maxim") on April 20, 2022, Maxim acted as our placement agent for the Private Placement. We agreed to pay Maxim a cash fee equal to 7.0% of the gross proceeds received by us in the Private Placement and to reimburse the Maxim up to \$60,000 for its expenses.

The closing of the Private Placement was consummated on April 25, 2022. The gross proceeds from the Private Placement, prior to deducting offering expenses and placement agent fees and expenses payable by us, were approximately \$5.0 million.

### ***May 2023 Private Placement***

In connection with a registered direct offering of our shares of Common Stock and pre-funded warrants to purchase shares of Common Stock, on May 23, 2023, we entered into a securities purchase agreement with two institutional investors (the "Purchasers"), pursuant to which, among other things, we sold to the Purchasers warrants (the "Private Warrants") to purchase up to 800,877 shares of Common Stock in a private placement with an exercise price of \$2.16 and have a term of five and a half years. No separate consideration was paid for the issuance of the Private Warrants. In addition, the Company issued to H.C. Wainwright & Co., LLC ("Wainwright") or its designees, warrants ("PA Warrants" and together with the Private Warrants, the "Warrants") to purchase up to 56,061 shares of Common Stock (the "PA Warrant Shares"). The PA Warrants were exercisable immediately upon issuance. The PA Warrants have substantially the same terms as the Private Warrants except that the PA Warrants have a term of exercise equal to five years from the date of the securities purchase agreement and have an exercise price equal to \$2.8563 per share. The Warrants and the shares of Common Stock issuable upon exercise of the 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 Rule 506(b) promulgated thereunder.

### ***Securities Act Exemptions***

We deemed the offers, sales and issuances of the securities described above under "Original Issuances of Stock," "Convertible Promissory Notes", "Underwriter Warrants," "March 2022 Private Placement," and "May 2023 Private Placement" to be exempt from registration under the Securities Act in reliance on Section 4(2) of the Securities Act, including Regulation D and Rule 506 promulgated thereunder, relative to transactions by an issuer not involving a public offering. All purchasers of securities in transactions exempt from registration pursuant to Regulation D represented to us that they were accredited investors and were acquiring the shares for investment purposes only and not with a view to, or for sale in connection with, any distribution thereof and that they could bear the risks of the investment and could hold the securities for an indefinite period of time. The purchasers received written disclosures that the securities had not been registered under the Securities Act and that any resale must be made pursuant to a registration statement or an available exemption from such registration.

We deemed the grants of stock options and issuances of common stock upon exercise of such options described above under “Stock Options” to be exempt from registration under the Securities Act in reliance on Rule 701 of the Securities Act as offers and sales of securities under compensatory benefit plans and contracts relating to compensation in compliance with Rule 701. Each of the recipients of securities in any transaction exempt from registration either received or had adequate access, through employment, business or other relationships, to information about us.

**Item 16. Exhibits and Financial Statement Schedules.**

(a) *Exhibits*

See the Exhibit Index attached to this Registration Statement, which is incorporated by reference herein.

(b) *Financial Statement Schedules*

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

**Item 17. Undertakings**

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 of 1933;
- 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 Securities and Exchange Commission pursuant to Rule 424(b) if, in the aggregate, the changes in volume and price represent no more than 20% change in the maximum aggregate offering price set forth in the “Calculation of Registration Fee” table in the effective registration statement.
- iii. To include any material information with respect to the plan of distribution not previously disclosed in the registration statement or any material change to such information in the registration statement, *provided, however*, that paragraphs (1)(i), (1)(ii) and (1)(iii) do not apply if the information required to be included in a post-effective amendment by those paragraphs is contained in reports filed with or furnished to the Commission by the registrant pursuant to Section 13 or 15(d) of the Exchange Act that are incorporated by reference in the registration statement.

2. That, for the purpose of determining any liability under the Securities Act of 1933, each such post-effective amendment shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

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

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

5. That, for the purpose of determining liability of the registrant under the Securities Act of 1933 to any purchaser in the initial distribution of the securities, 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 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 registrant relating to the offering filed pursuant to Rule 424;
- (ii) any free writing prospectus relating to the offering prepared by or on behalf of the registrant or used or referred to by the registrant;
- (iii) the portion of any other free writing prospectus relating to the offering containing material information about the registrant or its securities provided by or on behalf of the registrant; and
- (iv) any other communication that is an offer in the offering made by the registrant to the purchaser.

6. That, for purposes of determining any liability under the Securities Act of 1933, each filing of the registrant's annual report pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934 (and, where applicable, each filing of an employee benefit plan's annual report pursuant to Section 15(d) of the Securities Exchange Act of 1934) 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.

7. Insofar as indemnification for liabilities arising under the Securities Act of 1933 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 Securities and Exchange Commission such indemnification is against public policy as expressed in the 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 Act and will be governed by the final adjudication of such issue.



## SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, as amended, the registrant certifies that it has reasonable grounds to believe that it meets all of the requirements for filing on Form S-1 and has duly caused this Registration Statement to be signed on its behalf by the undersigned, thereunto duly authorized, in San Diego, California on July 7, 2023.

### DERMATA THERAPEUTICS, INC.

By: /s/ Gerald T. Proehl  
Gerald T. Proehl  
President, Chief Executive Officer and Chairman of the Board

### POWER OF ATTORNEY AND SIGNATURES

Each person whose signature appears below constitutes and appoints Gerald T. Proehl and Kyri K. Van Hoose and each of them singly, his or her true and lawful attorneys-in-fact and agents, with full power of substitution and resubstitution, for him or her and in his or her name, place and stead, in any and all capacities, to sign any and all amendments (including, without limitation, post-effective amendments) to this registration statement and any and all additional registration statements pursuant to Rule 462(b) of the Securities Act and to file the same, with all exhibits thereto and all other documents in connection therewith, with the SEC, granting unto each said attorney-in-fact and agent full power and authority to do and perform each and every act in person, hereby ratifying and confirming all that said attorneys-in-fact and agents or either of them or their, his or her substitute or substitutes may lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Act of 1933, as amended, this Registration Statement has been signed by the following persons on behalf of the registrant in the capacities and on the dates indicated.

<u>Signature</u>	<u>Title</u>	<u>Date</u>
<u>/s/ Gerald T. Proehl</u> Gerald T. Proehl	Chief Executive Officer, Chairman (Principal Executive Officer)	July 7, 2023
<u>/s/ Kyri K. Van Hoose</u> Kyri K. Van Hoose	Chief Financial Officer (Principal Financial and Accounting Officer)	July 7, 2023
<u>/s/ David Hale</u> David Hale	Lead Director	July 7, 2023
<u>/s/ Wendell Wierenga</u> Wendell Wierenga, Ph.D.	Director	July 7, 2023
<u>/s/ Mary Fisher</u> Mary Fisher	Director	July 7, 2023
<u>/s/ Andrew Sandler</u> Andrew Sandler, M.D.	Director	July 7, 2023
<u>/s/ Steven J. Mento</u> Steven J. Mento, Ph.D.	Director	July 7, 2023
<u>/s/ Kathleen Scott</u> Kathleen Scott	Director	July 7, 2023
<u>/s/ Brittany Bradrick</u> Brittany Bradrick	Director	July 7, 2023

## EXHIBIT INDEX

<b>Exhibit No.</b>	<b>Description of Document</b>
<a href="#">1.1</a>	<a href="#">Engagement Letter, dated as of November 27, 2022, by and between Dermata Therapeutics, Inc. and H.C. Wainwright &amp; Co., LLC. (incorporated by reference to Exhibit 1.1 of the Company's Registration Statement on Form S-1/A filed with the SEC on March 13, 2023)</a>
<a href="#">1.2</a>	<a href="#">Amendment No. 1 to the Engagement Letter, dated December 12, 2022, by and between Dermata Therapeutics, Inc. and H.C. Wainwright &amp; Co., LLC. (incorporated by reference to Exhibit 1.2 of the Company's Registration Statement on Form S-1/A filed with the SEC on March 13, 2023)</a>
<a href="#">3.1</a>	<a href="#">Amended and Restated Certificate of Incorporation of Dermata Therapeutics, Inc. (incorporated by reference to Exhibit 3.2 of the Company's Registration Statement on Form S-1 filed with the SEC on August 6, 2021).</a>
<a href="#">3.2</a>	<a href="#">Amendment No. 1 of the Amended and Restated Certificate of Incorporation of Dermata Therapeutics, Inc., filed with the Secretary of State of the State of Delaware on July 11, 2022 (incorporated by reference to Exhibit 3.1 of the Company's Current Report on Form 8-K filed with the SEC on July 11, 2022).</a>
<a href="#">3.3</a>	<a href="#">Amendment No. 2 of the Amended and Restated Certificate of Incorporation of Dermata Therapeutics, Inc., filed with the Secretary of State of the State of Delaware on March 13, 2023 (incorporated by reference to Exhibit 3.1 of the Company's Current Report on Form 8-K filed with the SEC on March 13, 2023).</a>
<a href="#">3.4</a>	<a href="#">Amended and Restated Bylaws of Dermata Therapeutics, Inc. (incorporated by reference to Exhibit 3.4 of the Company's Registration Statement on Form S-1 filed with the SEC on August 6, 2021).</a>
<a href="#">3.5</a>	<a href="#">Amendment No. 1 to the Amended and Restated Bylaws of Dermata Therapeutics, Inc. (incorporated by reference to Exhibit 3.1 of the Company's Current Report on Form 8-K filed with the SEC on September 23, 2022).</a>
<a href="#">4.1</a>	<a href="#">Specimen Certificate representing shares of common stock of Dermata Therapeutics, Inc. (incorporated by reference to Exhibit 4.1 of the Company's Registration Statement on Form S-1 filed with the SEC on August 6, 2021).</a>
<a href="#">4.2</a>	<a href="#">Form of Common Stock Purchase Warrant (incorporated by reference to Exhibit 4.3 of the Company's Registration Statement on Form S-1 filed with the SEC on August 6, 2021).</a>
<a href="#">4.3</a>	<a href="#">Form of Common Stock Purchase Warrant issued in the Company's Initial Public Offering (incorporated by reference to Exhibit 4.4 of the Company's Registration Statement on Form S-1 filed with the SEC on August 6, 2021).</a>
<a href="#">4.4</a>	<a href="#">Form of Underwriter Warrant issued in the Company's Initial Public Offering (incorporated by reference to Exhibit 4.2 of the Company's Registration Statement on Form S-1 filed with the SEC on August 6, 2021).</a>
<a href="#">4.5</a>	<a href="#">Form of Warrant Agency Agreement between Dermata Therapeutics, Inc. and Direct Transfer, LLC entered into in connection with the Company's Initial Public Offering (incorporated by reference to Exhibit 4.5 of the Company's Registration Statement on Form S-1 filed with the SEC on August 6, 2021).</a>

<a href="#">4.6</a>	<a href="#">Form of Common Stock Warrant issued in the Registered Direct Offering (incorporated by reference to Exhibit 4.1 of the Company’s Current Report on Form 8-K filed with the SEC on April 25, 2022).</a>
<a href="#">4.7</a>	<a href="#">Form of Pre-Funded Warrant issued in Registered Direct Offering (incorporated by reference to Exhibit 4.2 of the Company’s Current Report on Form 8-K filed with the SEC on April 25, 2022).</a>
<a href="#">4.8</a>	<a href="#">Form of Pre-Funded Warrant issued in the March 2023 Offering (incorporated by reference to Exhibit 4.8 of the Company’s Registration Statement on Form S-1/A filed with the SEC on March 13, 2023).</a>
<a href="#">4.9</a>	<a href="#">Form of Series A and Series B Common Warrant issued in the March 2023 Offering (incorporated by reference to Exhibit 4.9 of the Company’s Registration Statement on Form S-1/A filed with the SEC on March 16, 2023).</a>
<a href="#">4.10</a>	<a href="#">Form of Placement Agent Warrant issued in the March 2023 Offering (incorporated by reference to Exhibit 4.10 of the Company’s Registration Statement on Form S-1/A filed with the SEC on March 13, 2023).</a>
<a href="#">4.11</a>	<a href="#">Form of Pre-Funded Warrant issued in the May 2023 Offering (incorporated by reference to Exhibit 4.1 of the Company’s Current Report on Form 8-K filed with the SEC on May 24, 2023).</a>
<a href="#">4.12</a>	<a href="#">Form of Warrant issued in the May 2023 Offering (incorporated by reference to Exhibit 4.2 of the Company’s Current Report on Form 8-K filed with the SEC on May 24, 2023).</a>
<a href="#">4.13</a>	<a href="#">Form of Placement Agent Warrant issued in the May 2023 Offering (incorporated by reference to Exhibit 4.3 of the Company’s Current Report on Form 8-K filed with the SEC on May 24, 2023).</a>
<a href="#">5.1</a>	<a href="#">Opinion of Lowenstein Sandler LLP.*</a>
<a href="#">10.1</a>	<a href="#">Form of Indemnification Agreement entered into by Dermata Therapeutics, Inc. and its Officers and Directors (incorporated by reference to Exhibit 10.1 of the Company’s Registration Statement on Form S-1 filed with the SEC on August 6, 2021).</a>
<a href="#">10.2</a>	<a href="#">Dermata Therapeutics, Inc. 2021 Equity Incentive Plan (incorporated by reference to Exhibit 10.2 of the Company’s Registration Statement on Form S-1 filed with the SEC on August 6, 2021).†</a>
<a href="#">10.3</a>	<a href="#">Amendment No. 1 to the Dermata Therapeutics, Inc. 2021 Equity Incentive Plan (incorporated by reference to Exhibit 10.15 of the Company’s Registration Statement on Form S-1 filed with the SEC on August 6, 2021).†</a>
<a href="#">10.4</a>	<a href="#">Form of Nonqualified Stock Option Award under 2021 Equity Incentive Plan (incorporated by reference to Exhibit 10.3 of the Company’s Registration Statement on Form S-1 filed with the SEC on August 6, 2021).†</a>
<a href="#">10.5</a>	<a href="#">Form of Incentive Stock Option Award under 2021 Equity Incentive Plan (incorporated by reference to Exhibit 10.4 of the Company’s Registration Statement on Form S-1 filed with the SEC on August 6, 2021).†</a>
<a href="#">10.6</a>	<a href="#">Employment Agreement dated December 6, 2021 by and between Dermata Therapeutics, Inc. and Gerald T. Proehl (incorporated by reference to Exhibit 10.1 of the Company’s Current Report on Form 8-K filed with the SEC on December 10, 2021).†</a>

<a href="#">10.7</a>	<a href="#">Form of Employment Agreement dated August 17, 2021 by and between Dermata Therapeutics, Inc. and Christopher J. Nardo, M.P.H., Ph.D. (incorporated by reference to Exhibit 10.6 of the Company's Registration Statement on Form S-1 filed with the SEC on August 6, 2021).†</a>
<a href="#">10.8</a>	<a href="#">Amendment No. 1 dated December 6, 2021 to the Employment Agreement by and between Dermata Therapeutics, Inc. and Christopher J. Nardo (incorporated by reference to Exhibit 10.4 of the Company's Current Report on Form 8-K filed with the SEC on December 10, 2021). †</a>
<a href="#">10.9</a>	<a href="#">Amendment No. 2 dated January 1, 2022 to the Employment Agreement by and between Dermata Therapeutics, Inc. and Christopher J. Nardo (incorporated by reference to Exhibit 10.9 of the Company's Annual Report on Form 10-K filed with the SEC on March 8, 2022).†</a>
<a href="#">10.10</a>	<a href="#">Amendment No. 3 dated July 1, 2022 to the Employment Agreement by and between Dermata Therapeutics, Inc. and Christopher Nardo (incorporated by reference to Exhibit 10.4 of the Company's Quarterly Report on Form 10-Q filed with the SEC on August 15, 2022). †</a>
<a href="#">10.11</a>	<a href="#">Employment Agreement dated December 6, 2021 by and between Dermata Therapeutics, Inc. and Maria Bedoya Toro Munera, Ph.D., M.B.A. (incorporated by reference to Exhibit 10.3 of the Company's Current Report on Form 8-K filed with the SEC on December 10, 2021).†</a>
<a href="#">10.12</a>	<a href="#">Amendment No. 1 dated January 1, 2022 to the Employment Agreement by and between Dermata Therapeutics, Inc. and Maria Bedoya Toro Munera, Ph.D. (incorporated by reference to Exhibit 10.11 of the Company's Annual Report on Form 10-K filed with the SEC on March 8, 2022).†</a>
<a href="#">10.13</a>	<a href="#">Employment Agreement dated December 6, 2021 by and between Dermata Therapeutics, Inc. and Kyri K. Van Hoose (incorporated by reference to Exhibit 10.2 of the Company's Current Report on Form 8-K filed with the SEC on December 10, 2021).†</a>
<a href="#">10.14</a>	<a href="#">Amendment No. 1 dated January 1, 2022 to the Employment Agreement by and between Dermata Therapeutics, Inc. and Kyri K. Van Hoose. (March 2023 Offering (incorporated by reference to Exhibit 1.1 of the Company's Registration Statement on Form S-1/A filed with the SEC on March 13, 2023).†</a>
<a href="#">10.15</a>	<a href="#">Supply Agreement between Dermata Therapeutics LLC and Reka-Farm LLC, dated as of February 27, 2020 (incorporated by reference to Exhibit 10.8 of the Company's Registration Statement on Form S-1 filed with the SEC on August 6, 2021).#</a>
<a href="#">10.16</a>	<a href="#">License Agreement between Dermata Therapeutics LLC and Villani, Inc. dated as of March 31, 2017 (incorporated by reference to Exhibit 10.9 of the Company's Registration Statement on Form S-1 filed with the SEC on August 6, 2021).#</a>
<a href="#">10.17</a>	<a href="#">Amended and Restated Annex A to the License Agreement between Dermata Therapeutics LLC and Villani, Inc. dated as of March 31, 2017 (incorporated by reference to Exhibit 10.10 of the Company's Registration Statement on Form S-1 filed with the SEC on August 6, 2021).</a>
<a href="#">10.18</a>	<a href="#">License Amendment and Settlement Agreement between Dermata Therapeutics LLC and Villani, Inc. dated as of June 4, 2019 (incorporated by reference to Exhibit 10.11 of the Company's Registration Statement on Form S-1 filed with the SEC on August 6, 2021).#</a>
<a href="#">10.19</a>	<a href="#">Amendment to the License Amendment and Settlement Agreement between Dermata Therapeutics, Inc. and Villani, Inc., dated July 30, 2021 (incorporated by reference to Exhibit 10.12 of the Company's Registration Statement on Form S-1 filed with the SEC on August 6, 2021).#</a>

<a href="#">10.20</a>	<a href="#">Form of Securities Purchase Agreement Dated April 20, 2022 between Dermata Therapeutics, Inc. and the Purchaser (incorporated by reference to Exhibit 10.1 of the Company’s Current Report on Form 8-K filed with the SEC on April 25, 2022).</a>
<a href="#">10.21</a>	<a href="#">Form of Registration Rights Agreement dated April 20, 2022 between Dermata Therapeutics, Inc. and the Purchaser (incorporated by reference to Exhibit 10.2 of the Company’s Current Report on Form 8-K filed with the SEC on April 25, 2022).</a>
<a href="#">10.22</a>	<a href="#">Form of Placement Agent Agreement dated April 20, 2022 between the Registrant and Maxim Group LLC (incorporated by reference to Exhibit 10.3 of the Company’s Current Report on Form 8-K filed with the SEC on April 25, 2022).</a>
<a href="#">10.23</a>	<a href="#">Form of Securities Purchase Agreement to be entered into in the March 2023 Offering (incorporated by reference to Exhibit 10.23 of the Company’s Registration Statement on Form S-1/a filed with the SEC on March 16, 2023).</a>
<a href="#">10.24</a>	<a href="#">Form of Securities Purchase Agreement to be entered into in the May 2023 Offering (incorporated by reference to Exhibit 10.1 of the Company’s Current Report on Form 8-K filed with the SEC on May 24, 2023).</a>
<a href="#">23.1</a>	<a href="#">Consent of Mayer Hoffman McCann P.C.*</a>
<a href="#">23.2</a>	<a href="#">Consent of Lowenstein Sandler LLP (included as part of Exhibit 5.1).*</a>
<a href="#">24.1</a>	<a href="#">Power of Attorney.*</a>
<a href="#">107</a>	<a href="#">Filing Fee Table.*</a>

- # Portions of this exhibit (indicated by asterisks) are omitted in accordance with the rules of the SEC.  
\* Filed herewith.  
\*\* Previously Filed.  
† Indicates a management contract or compensation plan, contract or arrangement.



July 7, 2023

Dermata Therapeutics, Inc.  
3525 Del Mar Heights Rd., #322  
San Diego, CA 92130

Ladies and Gentlemen:

We have acted as counsel for Dermata Therapeutics, Inc., a Delaware corporation (the “Company”), in connection with the preparation and filing of a Registration Statement on Form S-1 (the “Registration Statement”), including a related prospectus filed with the Registration Statement (the “Prospectus”), with the Securities and Exchange Commission (the “Commission”) pursuant to the Securities Act of 1933, as amended (the “Securities Act”). The Registration Statement relates to the offer and sale by the selling stockholders identified therein of up to 856,938 shares of the Company’s common stock, par value \$0.0001 per share (the “Common Stock”). Such shares of Common Stock consist of (i) 800,877 shares of Common Stock (the “Common Warrant Shares”) issuable upon exercise of certain warrants to purchase Common Stock (the “Common Warrants”) and (ii) 56,061 shares of Common Stock (the “PA Warrant Shares” and together with the Common Warrant Shares, the “Warrant Shares”) issuable upon the exercise of certain warrants issued to our placement agent (the “PA Warrants” and together with the Common Warrants, the “Warrants”) described in the Registration Statement, which are currently issued and outstanding.

In connection with rendering this opinion, we have examined the Amended and Restated Certificate of Incorporation, as amended and the Amended and Restated Bylaws of the Company, as amended, the forms of the Warrants and such other corporate records, agreements, documents and instruments, and such certificates or comparable documents of public officials and of officers and representatives of the Company, and we have made such inquiries of such officers and representatives, as we have deemed necessary or appropriate for the purposes of this opinion.

In such examination, we have assumed the genuineness of all signatures, the legal capacity of all natural persons, the authenticity of all documents submitted to us as originals, the conformity to original documents of all documents submitted to us as certified, conformed or photostatic copies, and the authenticity of the originals of such latter documents. As to certain questions of fact material to this opinion, we have relied upon certificates or comparable documents of officers and representatives of the Company and have not sought to independently verify such facts.

Based on the foregoing, and subject to the qualifications stated herein, we are of the opinion that, when issued in accordance with the terms of the respective Warrants, the Warrant Shares will be duly authorized, validly issued, fully paid and non-assessable.

The opinion expressed herein is limited to the General Corporation Law of the State of Delaware (including reported judicial decisions interpreting the General Corporation Law of the State of Delaware), and we express no opinion as to the effect on the matters covered by this letter of the laws of any other jurisdiction.

We hereby consent to the filing of this letter as an exhibit to the Registration Statement and to the reference to our firm under the caption “Legal Matters” in the Prospectus which is a part of the Registration Statement. In giving such consents, we do not thereby admit that we are in the category of persons whose consent is required under Section 7 of the Securities Act or the Rules and Regulations of the Commission promulgated thereunder.

Very truly yours,

/s/ Lowenstein Sandler LLP  
Lowenstein Sandler LLP

**CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM**

We consent to the incorporation by reference in this Registration Statement on Form S-1 and related prospectus of our report dated February 21, 2023, with respect to the financial statements of Dermata Therapeutics, Inc. (formerly Dermata Therapeutics, LLC) (“Company”) as of and for the years ended December 31, 2022 and 2021 (which report includes an explanatory paragraph regarding the existence of substantial doubt about the Company’s ability to continue as a going concern), included in the Company’s Annual Report on Form 10-K for the year ended December 31, 2022, and to the reference to us under the heading “Experts” in the prospectus which is part of this Registration Statement.

/s/ Mayer Hoffman McCann P.C.

San Diego, California  
July 7, 2023

## Calculation of Filing Fee Tables

**Form S-1**  
(Form Type)

**Dermata Therapeutics, Inc.**  
(Exact Name of Registrant as Specified in its Charter)

	Security Type	Security Class Title	Fee Calculation or Carry Forward Rule	Amount Registered (1)	Proposed Maximum Offering Price Per Unit (2)	Maximum Aggregate Offering Price (1)	Fee Rate	Amount of Registration Fee
<b>Fees to Be Paid</b>	Equity	Common Stock, par value \$0.0001 per share	Rule 457(c)	856,938	\$ 1.645	\$ 1,409,663	\$ 0.00011020	\$ 155.34
		<b>Total Offering Amounts</b>						\$ 155.34
		<b>Total Fees Previously Paid</b>						\$ 0
		<b>Net Fee Due</b>						\$ 155.34

- (1) Pursuant to Rule 416 under the Securities Act, there is also being registered hereby such indeterminate number of additional common shares as may be issued or issuable because of stock splits, stock dividends stock distributions, and similar transactions.
- (2) Estimated solely for the purpose of calculating the registration fee pursuant to Rule 457(c) under the Securities Act based on a per share price of \$1.645, the average of the high \$1.68 and low \$1.61 reported sales prices of the registrant's common stock on the Nasdaq Capital Market on July 6, 2023.