FORM S-1

General form of registration statement for all companies including face-amount certificate companies

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As filed with the Securities and Exchange Commission on March 13, 2023.
Registration No. 333-

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

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

Origin Life Sciences, Inc.

(Exact name of registrant as specified in its charter)

Delaware	3845	27-370 5184
(State or other jurisdiction of incorporation or organization)	(Primary Standard Industrial Classification Code Number)	(I.R.S. Employer Identification Number)

2 Research Way, Third Floor
Princeton, NJ 08540
(609) 250-6000
(Address, including zip code, and telephone number, including area code, of registrant's principal executive offices)

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

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

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

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

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

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

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

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

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

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EXPLANATORY NOTE

This Registration Statement contains two prospectuses, as set forth below.

- Public Offering Prospectus. A prospectus to be used for the public offering of up to 3,000,000[(1)] shares of common stock of the Registrant (the "Public Offering Prospectus"), with such shares to be sold in an underwritten offering through the underwriters named on the cover page of the Public Offering Prospectus.
- Resale Prospectus. A prospectus to be used for the resale by the selling stockholders set forth therein of 775,900 shares of common stock, which shares will be issuable upon conversion of convertible notes that will automatically convert into common stock upon the effectiveness of this Registration Statement, as set forth in the resale prospectus set forth herein (the "Resale Prospectus").

The Resale Prospectus is substantively identical to the Public Offering Prospectus, except for the following principal points:

- they contain different outside and inside front covers and back covers;
- they contain different Offering sections in the Prospectus Summary section beginning on page Alt-1;
- they contain different Use of Proceeds sections on page Alt-12;
- the Capitalization and Dilution sections from the Public Offering Prospectus are deleted from the Resale Prospectus;
- a Selling Stockholders section is included in the Resale Prospectus;
- the Underwriting section from the Public Offering Prospectus is deleted from the Resale Prospectus and a Selling Stockholders Plan of Distribution is inserted in its place in the Resale Prospectus; and
- the Legal Matters section in the Resale Prospectus on page Alt-16 deletes the reference to counsel for the underwriters.

The Registrant has included in this Registration Statement a set of alternate pages after the back cover page of the Public Offering Prospectus (the "Alternate Pages") to reflect the foregoing differences in the Resale Prospectus as compared to the Public Offering Prospectus. The Public Offering Prospectus will exclude the Alternate Pages and will be used for the public offering by the Registrant. The Resale Prospectus will be substantively identical to the Public Offering Prospectus except for the addition or substitution of the Alternate Pages, and such other changes as may be necessary to clarify references to the public offering or the resale offering, and will be used for the resale offering by the selling stockholders.

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(1) Assumes the underwriters' over-allotment option has not been exercised.

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

PRELIMINARY PROSPECTUS **SUBJECT TO COMPLETION, DATED MARCH 13, 2023**

Origin Life Sciences, Inc.

3,000,000 Shares

Common Stock

This is the initial public offering of our common stock. We are offering 3,000,000 shares of our common stock, par value $0.01 per share. We expect the initial public offering price to be between $4.00 and $6.00 per share.

In addition, the Selling Stockholders (as defined in the accompanying resale prospectus) are offering 775,900 shares of common stock to be sold pursuant to a separate resale prospectus, which shares will be issuable upon conversion of convertible promissory notes (the "Convertible Notes") held by the Selling Stockholders pursuant to a prospectus to be used in connection with the potential distribution of such shares by such Selling Stockholders (the "Resale Prospectus"), which Convertible Notes will automatically convert into common stock at a conversion price of $2.50 per share, which is 50% of the assumed initial public offering price of $5.00 per share, the midpoint of the price range set forth above, upon the effectiveness of the registration statement of which this prospectus is a part. We will not receive any proceeds from the sale of the common stock to be sold by the Selling Stockholders. The Selling Stockholders have represented to us that they will not offer or sell shares prior to the closing of this offering.

No public market currently exists for our common stock. We intend to apply to list our common stock for trading on NYSE American LLC ("NYSE American") under the symbol "OLSI." This offering is contingent upon receiving approval of our listing from NYSE American.

We are an "emerging growth company" as defined under the federal securities laws and, as such, will be subject to reduced public company reporting requirements. See "Prospectus Summary — Implications of Being an Emerging Growth Company" for additional information.

Investing in our common stock involves a high degree of risk. Please read "Risk Factors" beginning on page 15 of this prospectus.

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

	Per Share	Total
Public offering price	$	$
Underwriting discounts and commissions[(1)]	$	$
Proceeds, before expenses, to Origin Life Sciences, Inc.	$	$

(1) We have agreed to pay the underwriters a cash fee equal to 7.0% of the aggregate gross proceeds from the sale of the common stock in this offering. Additionally, we have agreed to pay a non-accountable expense allowance and to reimburse the underwriters for certain expenses incurred by them in connection with this offering. See "Underwriting" beginning on page 130 of this prospectus for more information about the compensation payable to the underwriters, including warrants to purchase shares of our common stock.

We have granted the underwriters an option for a period of 45 days to purchase up to an additional 450,000 shares of common stock. If the underwriters exercise the option in full, the total underwriting discounts and commissions payable by us will be $1,380,000, and the total proceeds to us, before expenses, will be $15,870,000.

Delivery of the shares is expected to be made on or about , 2023.

Sole Book-Running Manager

Boustead Securities, LLC

Prospectus dated , 2023

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Prototype of the U.S. version of our therapy delivery platform that was used in our dose-ranging clinical trial and in our proof-of-concept studies. THIS DEVICE IS CURRENTLY UNDER DEVELOPMENT. THE PROTOTYPE DEPICTED ABOVE IS IN THE PROCESS OF BEING REENGINEERED AND, THEREFORE, IS NOT THE DEVICE WE INTEND TO USE IN OUR PIVOTAL CLINICAL TRIAL.

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ABOUT THIS PROSPECTUS

We have not, and the underwriters have not, authorized anyone to provide any information to you or to make any representations other than those contained in this prospectus, any amendment or supplement to this prospectus, or in any free writing prospectuses prepared by or on behalf of us or to which we have referred you. We take no responsibility for, and can provide no assurance as to the reliability of, any other information that others may give you. This prospectus is an offer to sell only the shares offered hereby, and only under circumstances and in jurisdictions where offers and sales are permitted. The information contained in this prospectus is accurate only as of the date on the front cover of this prospectus regardless of the time of delivery of this prospectus or of any sale of common stock. Our business, financial condition, results of operations and prospects may have changed since the date on the front cover of this prospectus.

Neither we nor the underwriters have taken any action to permit this offering or possession or distribution of this prospectus in any jurisdiction where action for that purpose is required, other than in the United States.

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

This prospectus contains trade names, trademarks and service marks of other companies that are the property of their respective owners. Solely for convenience, trademarks and tradenames referred to in this prospectus appear without the ® and ™ symbols, but those references are not intended to indicate that we will not assert, to the fullest extent under applicable law, our rights, or that the applicable owners will not assert their rights, to these trademarks and trade names. We do not intend our use or display of other companies' trade names, trademarks or service marks to imply a relationship with, or endorsement or sponsorship by us of, these other companies.

PROSPECTUS SUMMARY

This summary highlights selected information contained elsewhere in this prospectus and does not contain all of the information that you should consider in making your investment decision. Before deciding to invest in our common stock, you should read this entire prospectus carefully, including the sections of this prospectus entitled "Risk Factors" and "Management's Discussion and Analysis of Financial Condition and Results of Operations" and our financial statements and the related notes included elsewhere in this prospectus.

Unless the context otherwise requires, references in this prospectus to the "Company," "Origin," "we," "us" and "our" refer to Origin Life Sciences, Inc.

Our Business

We are a clinical-stage biotechnology company that has been developing a proprietary patented high-energy plasma device that generates nitric oxide ("NO") in the form of a plasma/NO stream and delivers it to targeted locations of the body. The stream can potentially be used for various therapeutic purposes, including as an anti-infective, anti-inflammatory and tissue-regenerative therapy for chronic wounds and skin and soft tissue infections ("SSTIs"). The U.S. Food and Drug Administration (the "FDA") previously determined that our product will be a Class III medical device reviewed under a premarket approval ("PMA") application with the FDA's Center for Devices and Radiological Health ("CDRH") consulting with the Center for Drug Evaluation and Research ("CDER") as necessary. The cornerstone of the plasma/NO therapy is our patented delivery platform named "Ionojet" which allows us to turn atmospheric air into a plasma/NO stream that has been shown in investigations: (i) to be non-toxic, (ii) to generate NO activity up to 3 cm below the skin, and (iii) to stimulate sustained biological activity in tissue for up to an hour after delivery of the therapy. To date, our clinical activities have been focused on the clinical trials described below, including our dose-ranging feasibility clinical trial for the treatment of diabetic foot ulcers completed in 2018 using the plasma/NO stream generated from our Ionojet, and the preparation for our planned pivotal clinical trial, including finalization of the prototype of the Ionojet that we intend to use in our pivotal trial.

When used in this prospectus, the term "pivotal" trial is the clinical investigation intended to gather additional information about the safety and effectiveness of the Ionojet device that we believe will be the final clinical trial that will be required to support approval of a PMA for the device by the FDA for the treatment of diabetic foot ulcers. However, if the FDA should determine that such clinical trial (that we refer to as the pivotal trial) has not demonstrated reasonable assurance of the safety and effectiveness of the device, we may be required to conduct a further clinical trial to support approval of a PMA. Reference in this prospectus to the term "feasibility" trial refers to all clinical studies that precede the pivotal trial. Prior to commencing our pivotal trial in diabetic foot ulcers, we will need to submit, and receive approval of, a new Investigational Device Exemption ("IDE") filing, permitting the use of the reengineered design of the Ionojet in a new clinical study. We anticipate that we will be able to submit the new IDE approximately six months after consummation of this offering and that it will take approximately three months after submission of the IDE to receive approval thereof from the FDA. After receiving approval of the new IDE, we expect that it will take approximately three months to commence the pivotal trial, which will require Institutional Review Board ("IRB") approval of the study, identification and initiation of clinical trial sites and patient recruitment activities. We do not believe that the modifications to the device or the requirement to submit, and receive approval of, a new IDE has had, or will have, an effect on our expected timeline for commencement of the pivotal trial.

We plan to seek premarket approval of the Ionojet from the FDA as a Class III medical device, assuming we are able to complete our pivotal trial and the data are favorable. If we are unable to complete our pivotal trial or, upon completion of the trial, the outcomes of the trial design are not met, we may not be able to seek premarket approval of the Ionojet. We expect to submit our PMA application in the second quarter of 2024 and the FDA's review of the PMA can range from 6 to 15 months depending on whether the FDA raises significant issues during its interactive review. If we receive premarket approval from the FDA of our technology for the treatment of diabetic foot ulcers, our goal is to market our technology to hospitals, wound clinics and private podiatrist offices to treat diabetic foot ulcers and to generate revenue by charging for the device on a usage

basis. We do not intend to generate revenue from the sale of the Ionojet device, of which we intend to retain ownership. In addition to wound healing, we believe that our technology has application in many additional indications including dermatology, infection control, podiatry, dentistry, pain and inflammation and cosmetics, as well as potentially in certain respiratory infections, both viral and bacterial, oral

infections, dental indications, ophthalmic and facial applications and in topical indications, although to date the only pre-clinical and clinical studies we have conducted with our Ionojet device have been with regard to wound healing, and our pivotal clinical trial will focus solely on diabetic foot ulcers.

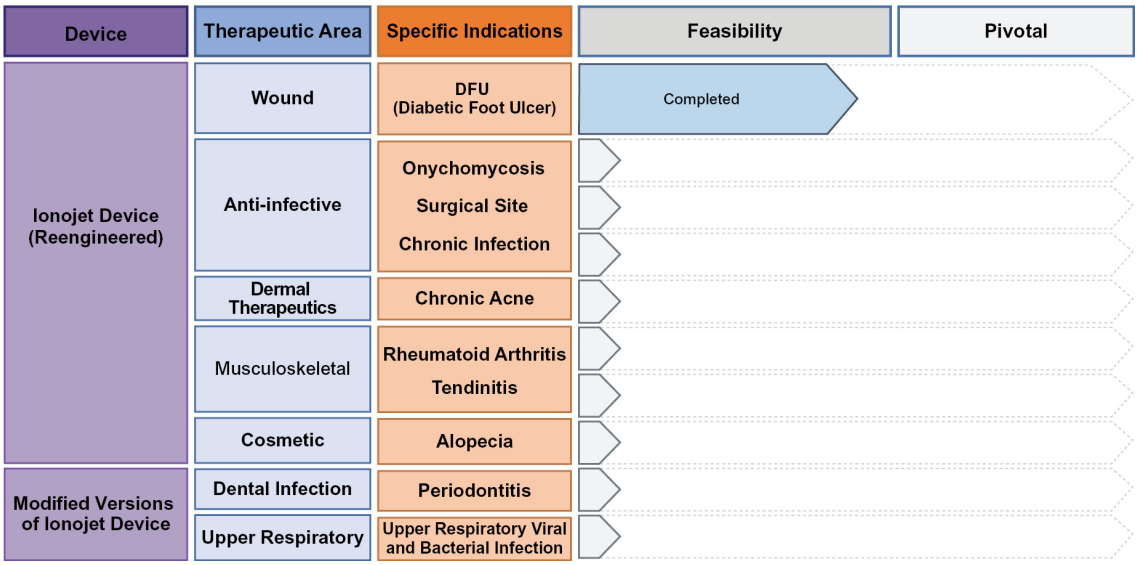
The plasma/NO stream generated by our device has the potential to promote healing in various ways as a result of the effect that NO has on immune system regulation, blood vessel regulation, tissue regeneration and defending against infection. In particular, NO represents a potential wound therapeutic agent due to its ability to regulate inflammation, increase blood flow, decrease blood pressure, eradicate bacterial infections, and promote the growth and activity of immune cells. Since the plasma/NO stream has been shown in investigations to generate NO activity up to 3 cm below the skin, we believe that the delivery of the NO via plasma energy allows the NO to pass through the skin and locally saturate the tissue and that this saturation enhances the NO pathways already present in the human body.

We believe that our therapy is novel in that it is intended to simultaneously both disinfect and promote the healing of infected wounds. We also are not aware of any currently approved technology to deliver site-specific and therapeutically relevant concentrations of NO to skin and soft tissue, as well as to joints and muscles, leading to significantly-increased levels of NO as much as three centimeters beneath the skin. We believe we are the furthest along in the clinical development of a therapy of this kind. We are continuing to explore and effect functional and aesthetic improvements to the device to meet the expectations of the U.S. market prior to commercial deployment and intend to use a portion of the proceeds of this offering to implement such improvements to our Ionojet technology and prepare for the submission of a new IDE for our pivotal trial in diabetic foot ulcers.

We are a clinical-stage biotechnology company with a limited operating history. We also have a history of operating losses and expect to continue to incur substantial losses for the foreseeable future. Our independent registered public accounting firm has expressed substantial doubt about our ability to continue as a going concern. Our cash and the proceeds of this offering will only fund our operations for a limited time. The proceeds from this offering will be insufficient to allow us to fully fund completion of our pivotal clinical trial and the premarket approval process, which we estimate will cost $30 million in total. We will need to raise additional capital to commence and complete the pivotal clinical trial.

The following is a summary of the targeted indications for which we intend to explore the treatment of using the therapy generated by the Ionojet device, as well as the stage of clinical development for each indication to date. It is anticipated that for all of the indications set forth below our device will generate a plasma/NO stream and deliver it to the patient; however, for wounds, anti-infective, dermal therapeutics, burns and musculoskeletal, and cosmetic treatments we plan to use our reengineered Ionojet. For the treatment of dental infections and upper respiratory infections, adaptations to the reengineered Ionojet will be required.

US Target Indications



To market additional indications, we will need to obtain a new premarket authorization from the FDA specific to each indication. At this time, we are unable to determine the device class or regulatory pathway for each indication. The type of FDA authorization required for each indication — i.e., 510(k) clearance, de novo classification, a PMA, or a supplement to our original PMA — will depend on factors such as the risk classification of the new indication and the classification of previously authorized technologies. We anticipate that the pilot studies and studies for safety that we have conducted to date for the Ionojet device will be applicable to each of the indications in the chart above. Therefore, subject to the availability of additional financing, we intend to commence feasibility studies to evaluate the effectiveness of the plasma/NO stream for the treatment of each of these indications, assuming we receive FDA approval of our Ionojet device for the treatment of diabetic foot ulcers.

Planned Pivotal Clinical Trial

We have been working on preparations for our planned pivotal trial in diabetic foot ulcers, upon which FDA approval will primarily be based. These preparations fall into three areas: (i) modifications to the Ionojet technology, (ii) medical, and (iii) administrative. The following is a summary:

(i) One of the purposes of a feasibility trial is to determine what modifications need to be made to a device prior to a pivotal trial, since the pivotal trial should be carried out with the form of the device that will be marketed post-approval. From clinician feedback and our own observations, we were able to identify several desirable changes that we believe will enhance commercial adoption, and we have been working on the reengineered design of our device in our own facility. We have made what we believe are significant improvements to our Ionojet technology, all of which we are seeking to protect with new U.S. and international patent filings. When these improvements have been completed, which is expected in mid-2023, and subject to the availability of adequate funding and FDA approval of a new IDE for our pivotal trial in diabetic foot ulcers for the device with the modifications, we will look to commence the production of devices for our planned pivotal trial.

(ii) Medically, we have started work on the study design and protocol for our pivotal trial. There are several important decisions to be made about the design of the study, including the dose or doses to be studied. Subject to FDA approval of our protocol, we intend to employ an adaptive study design for the pivotal trial, under which our targeted delta, or superiority over standard of care ("SoC") will not be finalized until we have seen the early results from the treatment arms.

(iii) Administratively, we expect to begin identifying clinical sites and investigators for the trial and assembling the appropriate advisory and review panels in early 2023. The timing of the pivotal trial is dependent on the availability of adequate financing and regulatory approval to conduct the study.

Market Opportunity

Current Indications

Our initial objective is to seek regulatory approvals for our therapy to address the unmet needs of patients suffering from chronic wounds and SSTIs. As discussed, the observational, IRB approved study conducted by Dr. Treadwell in 2013 evaluated the promotion of wound-healing and control of infection in the treatment of various chronic wounds. Dr. Treadwell is a qualified wound surgeon who is expected to serve as our Chief Clinical Officer commencing at some time shortly prior to or upon the consummation of this offering. According to an article published by Fortune Business Insights entitled Chronic Wound Care Market Size, Share & COVID-19 Impact Analysis (March 2022), the chronic wound care market was estimated at $11.61 billion in 2021, of which an estimated $4.4 billion was attributable to North America. The global chronic wound care market is projected to grow from $12.36 billion in 2022 to $19.52 billion by 2029, exhibiting a compound annual growth rate ("CAGR") of 6.7% during the forecast period. Diabetic foot ulcers comprise 43.1% of the global chronic wound care market, as reported by the same article.

In the United States, the treatment market size for SSTIs, also referred to as acute bacterial skin and skin structure infections (ABSSSI) by the FDA, was valued at $7.3 billion in 2018 and is projected to reach $14.9 billion by 2026, exhibiting a CAGR of 9.5%, as reported by Fortune Business Insights in an article entitled Acute Bacterial Skin and Skin Structure Infections (ABSSSI) Treatment Market Size, Share and Industry Analysis (July 2019).

We initially plan to focus on the diabetic foot ulcer treatment market. According to a report published by GlobeNewswire on July 20, 2022, the global diabetic foot ulcer treatment market was valued at $8.6 billion in 2021 and is projected to reach $14.8 billion by 2030. The North American diabetic foot ulcer treatment market reached $3.8 billion in 2021, contributing to the highest market share that year. In due course we may also look to secure regulatory approval and market our therapy for chronic wounds outside the United States in partnership with local organizations. In the meantime, and in parallel with our pivotal trial on diabetic foot ulcers, we plan, subject to available capital resources, to broaden our approach into other therapeutic areas and, prior to that, to conduct confirmatory pre-clinical studies into blood-flow and infection-control.

The cost of the therapy to the patient is expected to be based upon the dose administered, as measured by frequency and duration of administration. Based upon the current costs associated with advanced wound therapy, we estimate that the reimbursed cost of the therapy administered using our Ionojet technology for diabetic foot ulcers will be approximately $10,000 per patient.

Our strategy is to undertake proof-of-concept work in other wound-healing indications as well as non-wound-healing areas. For the latter, we are looking at target indications in other treatment areas (known as verticals) such as dermatology, infection control, podiatry, dentistry, pain and inflammation and cosmetics, as we believe NO may have clinical relevance to all these verticals. By demonstrating our clinical relevance outside diabetic foot ulcers, we believe we can add greater shareholder value in a shorter timeframe. Selection of target indications will be made on the basis of such factors as market size, regulatory constraint, estimate of likely success and time to completion.

Initial proof-of-concept studies have been carried out under IRB approval in two important indications — infected pacemaker and defibrillator implant wounds (n=7) and infected orthopaedic implant wounds (n=8). Both studies demonstrated that the therapy generated by our medical device was well-tolerated and each was the subject of a poster presented at conferences of the Symposium on Advanced Wound Care, one of the world's leading wound care education organizations, in San Antonio, Texas in 2021 and in Las Vegas, Nevada in 2022. Each study has been conducted by Dr. Treadwell as an observer initiated, open, non-controlled observational, IRB approved study to examine the effect of plasma/NO in treating patients with infected implanted hardware or cardiac pacemakers. In the pacemaker and defibrillator study, seven patients were referred to Dr. Treadwell with infected pacemaker pockets. All seven patients completed the protocol (clearance of the infection) with no reported adverse effects and clearing of the infections without removal of the implant. This trial remains open for additional qualified patients. In the orthopaedic implant study, eight patients were seen by Dr. Treadwell because of infected implanted orthopaedic hardware. All eight patients completed the protocol (clearance of the infection) with no reported adverse effects and clearing of the infections without removal of the hardware. This trial remains open for additional qualified patients. In the pacemaker and defibrillator study, all seven patients healed with an average of four treatments and no patient needed to have his/her implant removed. In the orthopaedic implant study, all eight patients healed without removal of the hardware. The smaller (orthopaedic) wounds healed with an average of ten weekly treatments while the larger wounds (neurosurgical) healed with an average of 22 weekly treatments. Additional studies are planned in onychomycosis (toenail fungus), radiation burns and sickle cell ulcers subject to available funding.

Future Indications

In addition, we intend to conduct clinical trials and seek regulatory approval for the use of the plasma/NO therapy generated by our device in the treatment of the indications listed below, each of which would increase our market opportunity, and, collectively, would increase our market opportunity even more. Although we have not conducted clinical trials for any of the following indications, we anticipate that we will be able to rely upon the safety and early feasibility studies that have been conducted to date using the Ionojet device for our clinical studies in the following indications, assuming that the Ionojet device is approved by the FDA for the treatment of diabetic foot ulcers.

Onychomycosis is a fungal infection that occurs in the fingernails or toenails. According to Verified Market Research, the U.S. onychomycosis market size was valued $2.9 billion in 2021 and is projected to reach $5.5 billion by 2023, growing at a CAGR of 8.6% from 2022 to 2030.

Surgical Site Infection — The global surgical site infection control market was valued at $4.2 billion in 2021 and is expected to reach a value of $5.51 billion by 2027, exhibiting a CAGR of 4.63% from 2021 to 2027, as reported by Research and Markets. It is estimated that 35% of the market's growth will originate from North America during the forecasted period.

Acne — The United States acne treatment market was valued at $4.27 billion in 2021 and is projected to grow to $6.12 billion by 2029, exhibiting a CAGR of 4.5%, according to Fortune Business Insights.

Rheumatoid arthritis is an autoimmune and inflammatory disease, which means that your immune system attacks healthy cells in your body by mistake, causing inflammation in the affected parts of the body. Joints in the hands, wrists and knees are commonly affected by rheumatoid arthritis. An article by Persistence Market Research reports that the global revenue from the rheumatoid arthritis treatment market is valued at $42.9 billion in 2022, with the global market expected to grow at a CAGR of 5.7% to reach a value of approximately $79.1 billion by the end of 2033. The United States market accounts for approximately 39.8% (or approximately $17 billion) of the global market.

Tendonitis — According to a report by Grandview Research, the global market size for tendonitis, a condition when a tendon is inflamed, was valued at $199.6 billion in 2021 and is projected to grow at a CAGR of 2.7% from 2022 to 2030. In 2021, North America dominated the global market, accounting for the largest share of 43.4% of the overall revenue, or approximately $86.6 billion.

Alopecia is a disease that develops when the body attacks its own hair follicles (where hair grows from), which can cause hair loss anywhere on the body, although it often causes hair loss on the scalp. The global alopecia market revenue was valued at $8.379 billion in 2021, with more than 36.4% being attributed to North America, according to a report by Acumen Research and Consulting. The global alopecia market is expected to grow at a CAGR of 8.2% from 2022 to 2030, achieving a market size of $16.76 billion by 2030.

Periodontal diseases are mainly the result of infections and inflammation of the gums and bone that surround and support the teeth. In its early stage, called gingivitis, the gums can become swollen and red, and they may bleed. In its more serious form, called periodontitis, the gums can pull away from the tooth, bone can be lost, and the teeth may loosen or even fall out. Transparency Market Research reported that the global periodontal treatment market size was valued at $7.6 billion in 2021 and North America held the major market share in 2021.

Respiratory tract infection — The United States respiratory tract infection therapeutic market size was estimated at $9 billion in 2022 and is expected to reach $9.9 billion in 2023, projecting a growth at a CAGR of 8.42% to reach $17 billion by 2030, according to an article by Report Linker. Estimated annual costs for viral upper respiratory infections in the United States, not related to influenza, exceeds $22 billion.

Our Strategy

Our goal is to become the leading provider of topical NO treatments using our proprietary Ionojet device for various therapeutic purposes, including as an anti-infective, anti-inflammatory and tissue-regenerative therapy for chronic wounds and SSTIs.

Key elements of our strategy are as follows:

- *Complete the final prototype of our Ionojet device.* Based upon clinician feedback and the results of our feasibility trial, we were able to identify several desirable changes that we believe will enhance commercial adoption of the Ionojet, and we have been working on the reengineered design of our device in our own facility. We have made what we believe are significant improvements to our Ionojet technology, all of which we are seeking to protect with new U.S. and international patent filings, and which will require FDA approval of an IDE to initiate our pivotal clinical trial.

- *Pivotal trial.* Complete a pivotal clinical trial in diabetic foot ulcers and seek premarket approval of Ionojet from the FDA as a Class III medical device, utilizing a portion of the net proceeds of this offering and securing additional funding. The pivotal trial data, if favorable, will be the primary basis for FDA approval. Conversely, if the data are not favorable, then FDA approval is unlikely.

- *Create a commercial infrastructure for our product candidates.* If the Ionojet is approved as a Class III medical device, we intend to hire and train a focused and dedicated team to launch the marketing of our product to hospitals, wound clinics and private podiatrist offices for the treatment of diabetic foot ulcers. We also intend to use a trained and dedicated team, and/or to enter into marketing partnerships, to launch the marketing of our Ionojet technology for any additional indications that may receive regulatory approval and any of our future product candidates.

- *Expand indications for use.* We believe that our technology has application in many indications in wound healing, as well as in dermatology, infection control, podiatry, dentistry, pain and inflammation and cosmetics. We believe that our technology could also have value in respiratory infections, both viral and bacterial, oral infections, dental indications, ophthalmic and facial applications and in topical indications where the modified stream allows greater comfort to the patient.

- *Strategic Partnerships.* We are exploring the possibility of entering into strategic partnering arrangements to provide further financing for our pivotal clinical trial and for formal clinical studies into other pipeline indications, to supplement the proceeds of this offering.

Competition

While we believe that our proprietary patented high-energy plasma device that generates NO in the form of a plasma/NO stream is the first technology of its kind in the United States market, we believe other companies developing different forms of NO therapies to treat diabetic foot ulcers to be our closest competitors. One such competitor, SaNOtize Research and Development Corp., based in Vancouver, Canada, is recruiting patients for a Phase I/II efficacy study to evaluate its NO releasing footbath as a treatment for diabetic foot ulcer. Edixomed Ltd., a United Kingdom company, is developing a NO generating gel wound dressing to treat diabetic foot ulcers.

Recent Developments

Private Placement

On June 20, 2022, we commenced a private placement (the "Private Placement") of up to $5,000,000 of convertible promissory notes, pursuant to which we issued: (i) convertible promissory notes in the principal aggregate amount of $450,000 on June 30, 2022; (ii) convertible promissory notes in the principal aggregate amount of $60,000 on August 16, 2022; (iii) convertible promissory notes in the principal aggregate amount of $725,000 on September 23, 2022; (iv) convertible promissory notes in the principal aggregate amount of $315,000 on October 25, 2022; (v) convertible promissory notes in the principal aggregate amount of $288,000 on November 30, 2022; and (vi) a convertible promissory note in the principal amount of $101,749.70 on December 21, 2022 (collectively, the "Private Placement Notes"). The promissory note issued in December 2022 was pursuant to a Subscription Agreement that was executed on or before November 30, 2022. In total, the aggregate principal amount of the Private Placement Notes issued in the Private Placement is $1,939,749.70, pursuant to which we received net proceeds of approximately $1,600,000. The Private Placement has terminated. The Private Placement Notes bear interest at 6% per annum and mature three years from the date of issuance. The principal amount due under the Private Placement Notes will be automatically converted into shares of our common stock upon the effectiveness of the registration statement of which this prospectus is a part, with all accrued interest under the Private Placement Notes waived upon conversion pursuant to the terms thereof. The Private Placement Notes are convertible into shares of common stock at a conversion price equal to the quotient obtained by dividing (i) the entire principal amount of the Private Placement Notes plus (if applicable) any accrued but unpaid interest under the Private Placement Notes by (ii) 50% of the initial offering price per share. The holders of the Private Placement Notes are prohibited from converting the Private Placement Notes if such conversion would result in a holder owning in excess of 4.99% of our outstanding common stock. The holders of the Private Placement Notes have agreed not to publicly sell or assign such common stock for a period of 180 days following completion of this offering. The holders

of certain of the Private Placement Notes desire to be named as selling stockholders in the Resale Prospectus and, therefore, the terms of their lock-up agreements will be waived by Boustead Securities, LLC immediately prior to the listing of our common stock on a national securities exchange.

Boustead Securities, LLC, the sole book-running manager of this offering, acted as the placement agent for the Private Placement and received a placement fee equal to 7.0% of the gross proceeds received by us from the sale of the Private Placement Notes, a non-accountable expense allowance equal to 1.0% of the gross proceeds received by us from the sale

of the Private Placement Notes and five-year warrants to purchase shares of our common stock at a price equal to the conversion price of the Private Placement Notes in an amount equal to 7.0% of the shares of common stock underlying the Private Placement Notes. See "Underwriting — Prior Relationship with Boustead Securities, LLC" for more information.

Amendments to Certificate of Incorporation

On March 1, 2023, we filed a certificate of revival (the "Certificate of Revival") to reinstate our amended and restated certificate of incorporation, as amended (the "Amended and Restated Certificate of Incorporation"), and to change the name of our corporation to Origin Life Sciences, Inc.

On March 8, 2023, we filed a certificate of amendment (the "Certificate of Amendment") to our Amended and Restated Certificate of Incorporation for purposes of providing for the conversion of all outstanding shares of our special voting common stock (the terms of which are described under "Description of Securities — Common Stock and Special Voting Common Stock") to common stock effective immediately upon filing thereof. Upon filing of the Certificate of Amendment, all 7,819,000 outstanding shares of our special voting common stock were converted into 7,819,000 shares of our common stock.

On March 8, 2023, we filed a certificate of elimination (the "Certificate of Elimination") of our Series A 8% Convertible Preferred Stock (the "Series A Preferred Stock"), at which time the 30,000 shares that had been designated as Series A Preferred Stock were returned to the status of authorized but unissued shares of our preferred stock.

Our Resale Offering

Certain of our shareholders will be selling through a separate prospectus (the "Resale Prospectus") 775,900 shares of common stock, which shares will be issuable upon conversion of convertible notes that will automatically convert into common stock at a conversion price of $2.50 per share, which is 50% of the assumed initial public offering price of $5.00 per share, the midpoint of the price range set forth on the cover page of this prospectus, upon the effectiveness of this Registration Statement, as set forth in the Resale Prospectus. We will not receive any proceeds from the sales by the Selling Stockholders of the securities set forth in the Resale Prospectus.

The Resale Prospectus is substantively identical to the Public Offering Prospectus, except for the following principal points:

- they contain different outside and inside front covers and back covers;
- they contain different Offering sections in the Prospectus Summary section beginning on page 1;
- they contain different Use of Proceeds sections on page 57;
- the Capitalization and Dilution sections from the Public Offering Prospectus are deleted from the Resale Prospectus;
- a Selling Stockholders section is included in the Resale Prospectus;
- the Underwriting section from the Public Offering Prospectus is deleted from the Resale Prospectus and a Selling Stockholders Plan of Distribution is inserted in its place in the Resale Prospectus; and
- the Legal Matters section in the Resale Prospectus on page 133 deletes the reference to counsel for the underwriters.

Summary of Risks Associated with Our Business

Our business is subject to numerous risks and uncertainties, including those highlighted in the section entitled "Risk Factors" immediately following this prospectus summary. These risks include, among others, the following:

Risks Related to Our Financial Position and Need for Capital

- We are a clinical-stage biotechnology company that has generated losses from operations;
- We are a clinical-stage company and to date we have not commercialized our medical technology;
- We have a history of operating losses;

- We have a relatively limited operating history and may not be able to execute on our business strategy;
- Our independent registered public accounting firm has expressed substantial doubt about our ability to continue as a going concern;
- We believe that the proceeds of this offering, combined with our very limited funds currently on hand, will only be sufficient for us to operate for a relatively limited amount of time; and
- We expect to derive all our revenues from our principal technology.

Risks Related to Product Development, Regulatory Approval, Manufacturing and Commercialization

- The regulatory approval process is expensive, time-consuming and uncertain;
- We may be unable to complete our clinical trials, and the data generated may not support FDA approval;
- We may fail to obtain and maintain necessary marketing authorizations from regulatory authorities;
- New or reformed legislation and regulations may make it difficult to obtain marketing authorization;
- After approval of Ionojet, Ionojet will remain subject to ongoing regulatory obligations and review;
- The device used in our clinical trials is not the same device that we plan to use in our pivotal trial;
- Modifications to our products may require new marketing authorizations;
- Environmental and health safety laws may result in liabilities, expenses and restrictions on our operations;
- Delays or failures in our clinical trials or investigations may prevent us from commercializing products;
- Our facilities are subject to regulation under the FDCA and FDA implementing regulations;
- We and our manufacturers are subject to extensive post-market regulation;
- Disruptions at the regulatory agencies could negatively impact our business;
- If we are found to have improperly promoted off-label uses, we may become subject to significant liability;
- Our business is subject to U.S. and foreign laws and regulations regarding privacy and data protection;
- If the third-parties or consultants do not successfully carry out their contractual duties, we may be unable to obtain regulatory approval for our product candidates;
- Data obtained from clinical trials are susceptible to varying interpretations or may be unfavorable;
- If the third-parties we rely upon fail to comply with stringent regulations, we may face delays;
- We may be required to redesign the device, and we may have insufficient resources to do so;
- Our Ionojet platform may contain undetected errors;
- We face intense competition, and we may not be able to compete in our industry;
- The continuing development of our products depends upon strong working relationships with physicians;
- It may be difficult for us to establish market acceptance of our therapy;
- If we fail to respond quickly to technological developments, our therapy may become uncompetitive;
- Developing medical technology entails significant technical, regulatory and business risks;
- Complaints or negative reviews about us or our technology could harm our reputation and brand;
- Healthcare regulatory reform may affect our ability to sell our products profitably;
- Product liability suits could be brought against us;
- Delays in the enrollment of patients in our clinical trials could increase costs and cause delays;
- If serious adverse effects are identified with respect to any of our product candidates or any of our approved products, we may need to modify or abandon our development of that product candidate;
- If we violate healthcare fraud and abuse laws we may be subject to penalties;
- Our ability to generate revenue will be diminished if we are unable to obtain adequate prices for the therapy; and

- The size and expected growth of our available market has not been established with precision.

Risks Related to Our Intellectual Property

- Our failure to maintain intellectual property would materially impact our business plan;
- Costly litigation may be necessary to protect our intellectual property rights;
- Involvement in opposition proceedings in foreign countries, may require spending of substantial sums and management resources; and
- Confidentiality agreements may not adequately prevent disclosure of trade secrets.

Risks Related to Our Industry

- We intend to utilize third-party providers which could delay or limit our ability to generate revenue;

- Our employees, independent contractors, consultants, commercial partners and vendors may engage in misconduct or other improper activities;
- If we are unsuccessful in establishing a marketing team for Ionojet, our revenue and profits will be limited;
- We may rely on collaborations and license arrangements with third parties to commercialize, market and promote our marketed products which may limit our ability to generate revenue;
- Our reliance on vendors in foreign countries, including China, subjects us to risks and uncertainties;
- International trade disputes could result in tariffs and other protectionist measures;
- The COVID-19 global health crisis may impact our planned operations, including our pivotal clinical trial;
- Our actual or perceived failure to comply with consumer protection laws could harm our business;
- Technological change may adversely affect commercialization of our products; and
- Consolidation in the medical device industry could have an adverse effect on our business.

Risks Related to Ownership of Our Common Stock

- An active public trading market for our common stock may not develop or be sustained;
- We cannot be assured that we will be able to maintain our listing on NYSE;
- Our stock price may be extremely volatile;
- Stock prices in recent initial public offerings have been volatile;
- If analysts do not publish favorable reports about us, our stock price could decline;
- After this offering, our officers, directors, and principal stockholders will continue to exercise significant control over our Company;
- Future sales of common stock could depress the market price of our common stock;
- The offering price of the shares and the other terms of the initial public offering have been determined through negotiations between us and the underwriter;
- The offering price of the initial public offering and resale offering could differ;
- The resale by the selling stockholders in our resale offering may cause our stock price to decline;
- New investors will experience dilution;
- Our ability to use our net operating losses and carryforwards may be limited;
- Our second amended and restated charter documents, to be in effect prior to the effectiveness of this offering, will have anti-takeover provisions and provide for Delaware Chancery Court as the exclusive forum;
- Our management has broad discretion in the use of the net proceeds from this offering;
- Certain of our related parties will directly benefit from the proceeds of this offering;
- Claims for indemnification by our directors and officers may reduce our available funds;
- We do not intend to pay dividends in the foreseeable future;
- We will incur significant increased costs as a result of operating as a public company; and
- We are an emerging growth company and smaller reporting company and as such we have reduced disclosure requirements, which may make our common stock less attractive to investors.

General Risk Factors

- Our performance will depend on the continued engagement of key members of our management team;
- If we are not able to attract and retain highly-skilled personnel our business could be harmed;
- We may experience difficulties in managing the growth of our organization;
- If product liability lawsuits are brought against us, we may incur substantial liabilities;
- Our business and operations would suffer in the event of computer system failures;
- Any failure to maintain the information security could expose us to litigation or government action;
- Joint ventures or investments in other companies or technologies could harm our business; and
- Declining general economic or business conditions may have a negative impact on our business.

Corporate History and Information

We were incorporated as a Delaware corporation on June 14, 2010 under the name Plasma Jet Technologies, Inc. and on September 18, 2014 we changed our name to Advanced Plasma Therapies, Inc. pursuant to an amended and restated certificate of incorporation. On October 8, 2015, we filed a certificate of amendment changing our name to Origin, Inc. On March 1, 2023, we filed a Certificate of Revival to reinstate our Amended and Restated Certificate of Incorporation and to change the name of our corporation to Origin Life Sciences, Inc. References to

Origin Life Sciences, Inc. also include references to our wholly owned subsidiaries: (i) Advanced Plasma Therapies, Inc., incorporated in Delaware; (ii) Origin Life Sciences Limited, incorporated in England and Wales; and (iii) Origin Agribusiness Limited, incorporated in England and Wales.

Our principal executive offices are located at 2 Research Way, Third Floor, Princeton, NJ 08540, and our telephone number is 610-250-6000. Our website address is *www.originww.com*. The information contained on, or that can be accessed through, our website is not incorporated by reference into this prospectus, and you should not consider any information contained on, or that can be accessed through, our website as part of this prospectus or in deciding whether to purchase our common stock.

Implications of Being an Emerging Growth Company and a Smaller Reporting Company

We qualify as an "emerging growth company" as defined in the Jumpstart Our Business Startups Act of 2012 (the "JOBS Act"). For as long as we remain an emerging growth company, we may take advantage of specified reduced reporting requirements and other burdens that are otherwise applicable generally to other public companies. These provisions include, but are not limited to:

- Reduced obligations with respect to financial data, including presenting only two years of audited financial statements and selected financial data, and only two years of related Management's Discussion and Analysis of Financial Condition and Results of Operations disclosure in our initial registration statement;
- an exemption from the auditor attestation requirement in the assessment of our internal control over financial reporting pursuant to the Sarbanes-Oxley Act of 2002, as amended ("SOX");
- reduced disclosure about executive compensation arrangements in our periodic reports, registration statements and proxy statements; and
- exemptions from the requirements to seek non-binding advisory votes on executive compensation or stockholder approval of any golden parachute arrangements.

We may take advantage of some or all of these provisions until we are no longer an emerging growth company. We will remain an emerging growth company until the earliest of (i) the last day of the fiscal year following the fifth anniversary of the completion of this offering, (ii) the last day of the first fiscal year in which our annual gross revenues exceed $1.235 billion, (iii) the date on which we have, during the immediately preceding three-year period, issued more than $1.0 billion in non-convertible debt securities and (iv) the date on which we are deemed to be a large accelerated filer under the rules of the Securities and Exchange Commission (the "SEC"). We may choose to take advantage of some but not all of these reduced burdens. For example, we have taken advantage of the reduced reporting requirements with respect to disclosure regarding our executive compensation arrangements, have presented only two years of audited financial statements and only two years of related "Management's Discussion and Analysis of Financial Condition and Results of Operations" disclosure in this prospectus, and have taken advantage of the exemption from auditor attestation on the effectiveness of our internal control over financial reporting. To the extent that we take advantage of these reduced burdens, the information that we provide stockholders may be different than you might obtain from other public companies in which you hold equity interests.

In addition, the JOBS Act permits emerging growth companies to take advantage of an extended transition period to comply with new or revised accounting standards applicable to public companies. We have elected to use this extended transition period. As a result of this election, our timeline to comply with new or revised accounting standards will in many cases be delayed as compared to other public companies that are not eligible to take advantage of this election or have not made this election. Therefore, our financial statements may not be comparable to those of companies that comply with the public company effective dates for these accounting standards.

We are also a "smaller reporting company" as defined in the Securities Exchange Act of 1934, as amended (the "Exchange Act"), and have elected to take advantage of certain of the scaled disclosures available to smaller reporting companies. To the extent that we continue to qualify as a "smaller reporting company" as such term

is defined in Rule 12b-2 under the Exchange Act, after we cease to qualify as an emerging growth company, certain of the exemptions available to us as an "emerging growth company" may continue to be available to us as a "smaller reporting company," including exemption from compliance with the auditor attestation requirements pursuant to SOX and reduced disclosure about our executive compensation arrangements. We will continue to be a "smaller reporting company" until we have $250 million or more in public float (based on our common stock) measured as of the last business day of our most recently completed second fiscal quarter or, in the event we have no public float (based on our common stock) or a public float (based on our common stock) that is less than $700 million, annual revenues of $100 million or more during the most recently completed fiscal year.

THE OFFERING

We will effect a forward split of our common stock prior to the effectiveness of the registration statement of which this prospectus forms a part, which we expect to be in the range of 150-for1 to 200-for-1 (the "Forward Split Range"). Share information presented below reflects a 175-for-1 forward split of our common stock, which is the midpoint of the Forward Split Range.

Common stock offered by us	3,000,000 shares
Common stock outstanding immediately before this offering	34,572,125 shares (as of March 13, 2023)
Common stock to be outstanding immediately after this offering	38,875,509 shares (or 39,325,509 shares if the underwriters exercise their option to purchase additional shares in full).
Option to purchase additional shares	We have granted the underwriters an option for a period of 45 days from the date of this prospectus to purchase up to 450,000 additional shares of common stock from us.
Use of proceeds	We estimate that the net proceeds to us from this offering will be approximately $13.25 million, or approximately $15.35 million if the underwriters exercise in full their option to purchase additional shares of common stock, after deducting underwriting discounts and commissions and estimated offering expenses payable by us, based on an assumed initial public offering price of $5.00 per share, which is the midpoint of the price range set forth on the cover page of this prospectus. We intend to use a portion of the net proceeds from this offering as follows: (i) approximately $[____] million to fund our ongoing clinical program for Ionojet, of which approximately $[ ] million will be used for completion of the reengineered design of the Ionojet technology and submission of a new IDE for our pivotal trial in diabetic foot ulcers; (ii) $1,649,452 for the redemption of all outstanding shares of the Series B Preferred Stock, including accumulated dividends calculated through March 31, 2023 which amount may be increased by a premium payment up to an additional $1 million pursuant to the terms of an agreement with the holder of the Series B Preferred Stock if the net proceeds of the initial public offering exceed $15 million; (iii) $386,883 in full satisfaction of the amount owed under the LFEIF Note, including interest calculated through March 31, 2023, the terms of which are described under "Description of Securities — Convertible Promissory Notes"; (iv) approximately $160,000 in repayment of loans, of which $135,000 will be repaid to related parties; (v) approximately $725,000 in payment of deferred salaries over the 18 months subsequent to this offering, of which $250,000 will be repaid to our Chief Financial Officer; and

	(vi) the balance for working capital, research and development and other general corporate purposes, which may include the acquisition or licensing of other products, businesses or technologies. See “Use of Proceeds” for additional information.

Representative's warrants	The registration statement of which this prospectus is a part also registers for sale warrants (the "Representative's Warrants") to purchase shares of our common stock that we will issue to Boustead Securities, LLC, as the representative of the underwriters (the "Representative") as a portion of the underwriting compensation payable to the underwriters in connection with this offering. The Representative's Warrants are exercisable commencing six months after the date of effectiveness of the registration statement of which this prospectus forms a part and will be exercisable for a period of five years from such effective date at an exercise price equal to 110% of the initial public offering price of the common stock. Please see "Underwriting — Representative's Warrants" for a description of the Representative's Warrants.
Risk factors	See "Risk Factors" beginning on page 15 and the other information included in this prospectus for a discussion of factors you should consider carefully before deciding to invest in our common stock.
Proposed NYSE American symbol	We intend to apply to list our common stock for trading on NYSE American under the symbol "OLSI." This offering will not be consummated until we have received NYSE American's approval of our application for the listing of our common stock. No assurance can be given that our application will be approved.

Unless otherwise stated in this prospectus, the number of shares of common stock to be outstanding after this offering, is based on 34,572,125 shares of common stock outstanding as of March 13, 2023, and which includes:

- the conversion upon the closing of this initial public offering of the remaining outstanding Private Placement Notes, in the principal amount of $1,939,749.70, into an aggregate of 775,900 shares of common stock at an conversion price of $2.50 per share, which is 50% of the assumed initial public offering price of $5.00 per share, which is the midpoint of the price range set forth on the cover page of this prospectus, upon the effectiveness of the registration statement of which this prospectus is a part;
- the sale of 3,000,000 shares of common stock in this offering, assuming an initial public offering price of $5.00 per share of common stock (the mid-point of the price range set forth on the cover page of this prospectus), after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us;
- the issuance of 145,120 shares of common stock in repayment of an aggregate of $725,600 of outstanding loans pursuant to agreements with the holders of such loans upon consummation of this offering;
- the issuance of 318,364 shares of common stock in consideration for accrued consulting fees and commissions in the aggregate amount of $1,591,820 upon consummation of this offering; and
- the issuance of 64,000 shares of common stock in consideration for $320,000 of outstanding accounts payable upon consummation of this offering;

and such number of shares to be outstanding after this offering excludes the following:

- 4,012,050 shares of common stock issuable upon the exercise of outstanding stock options at a weighted-average exercise price of $2.603 per share;
- 2,508,275 shares of common stock issuable upon the exercise of outstanding warrants at a weighted-average exercise price of $2.99 per share;
- 1,741,600 shares of common stock reserved for future issuance under our 2014 Equity Incentive Plan (the "2014 Plan"), which shares shall no longer be available for future issuance upon the effectiveness of the 2023 Stock Incentive Plan (the "2023 Plan");

- 5,000,000 shares of common stock reserved for future issuance under our 2023 Plan;
- 54,313 shares of common stock issuable upon exercise of outstanding warrants issued to Boustead Securities, LLC, as placement agent for the Private Placement;
- 210,000 shares of common stock issuable upon exercise of the Representative's Warrants, which are expected to be issued to the Representative in connection with this offering; and
- 1,231,817 shares of common stock issuable upon the exercise of warrants to be issued in exchange for deferred salaries and bonuses in the aggregate amount of $6,159,085 upon consummation of this offering.

Unless otherwise indicated, all information in this prospectus assumes and reflects the following:

- The automatic conversion of the Private Placement Notes upon the effectiveness of the registration statement of which this prospectus is a part, in the amount of $1,939,749.70, into an aggregate of 775,900 shares of our common stock, at a conversion price of $2.50 per share, which is 50% of the assumed initial public offering price of $5.00 per share, which is the midpoint of the price range set forth on the cover page of this prospectus;
- The redemption of 10,000 shares of Series B 20% Preferred Stock (the "Series B Preferred Stock") outstanding, at the price of $100 per share, plus accumulated dividends, pursuant to an agreement with the holder of the Series B Preferred Stock, which shall be paid out of the proceeds of this offering;
- The conversion of the 20,000 shares of Series A Preferred Stock into 458,850 shares of special voting common stock, the cashless exercise of $5,000,000 of warrants (pre-forward split) into 185,500 shares of special voting common stock, and the subsequent conversion of all 7,819,000 shares of special voting common stock into 7,819,000 shares of common stock;
- The repayment of the LFEIF Note, which shall become due and payable thirty (30) days after the closing of this offering if not earlier converted at the direction of LFEIF;
- No exercise of the underwriters' option to purchase up to an additional 450,000 shares of common stock;
- No exercise of the Representative's Warrants to be issued to the Representative upon completion of this offering;
- No exercise of any other outstanding warrants or stock options; and
- The filing and effectiveness of our second amended and restated certificate of incorporation and the effectiveness of our second amended and restated bylaws, which will occur prior to the effectiveness of this offering.

In addition, unless otherwise indicated, all share information reflects a 175-for-1 forward stock split of our common stock which is the midpoint of the Forward Split Range, to occur prior to the effectiveness of the registration statement of which this prospectus forms a part. The share and per share information in the financial statements and the related notes thereto included elsewhere in this prospectus have been adjusted to reflect the 175-for-1 forward stock split of our common stock.

SUMMARY FINANCIAL DATA

The following table summarizes the relevant financial data for our business and should be read with our financial statements, which are included in this prospectus. We have derived the summary financial data for the years ended December 31, 2022 and 2021 from our audited consolidated financial statements and related notes included elsewhere in this prospectus. Our historical results are not necessarily indicative of results that may be expected in the future. You should read the following summary consolidated financial data together with our audited consolidated financial statements, and the related notes included elsewhere in this prospectus and the information in the sections titled "Management's Discussion and Analysis of Financial Condition and Results of Operations."

	Year ended December 31,	
	2022	**2021**
Operating Expenses		
Salaries & benefits (including share-based compensation)	$ 1,954,851	$ 4,322,259
Consulting (including share-based compensation)	$ 521,297	$ 1,624,709
Other general and administrative	$ 403,407	$ 433,929
Research and development	$ 52,139	$ 9,848
Amortization	$ 93,023	$ 93,023
Total Operating Expenses	$ 3,024,717	$ 6,483,768
Forgiveness of paycheck protection program loan	$ 183,737	$ 201,250
Warrant Expense	$ (5,886,390)	$ —
Interest Expense	$ (112,981)	$ (50,123)
Loss before Taxation	$ (8,840,351)	$ (6,332,641)
Provision for Taxation	$ —	$ —
Net loss	$ (8,840,351)	$ (6,332,641)
Net loss per common share – basic and diluted[1]	$ (48.49)	$ (35.40)
Pro forma net income (loss) per common share, basic and diluted (unaudited)[2]	$ (0.25)	$ (0.18)

Balance Sheet Data:	**December 31, 2022**	**Pro Forma[3]**	**Pro Forma As Adjusted[4]**
Working capital	$ (9,796,324)	$ (9,796,324)	9,488,246
Total assets	$ 1,740,271	$ 1,740,271	12,953,936
Total liabilities	$ 18,597,558	$ 14,793,776	3,351,718
Stockholder's (deficit)/equity	$ (19,790,087)	$ (14,937,962)	8,717,961

(1) Presented on a historical basis adjusted to give effect to the 175-for-1 forward stock split of common stock, which is the midpoint of the Forward Split Range, to occur prior to the effectiveness of the registration statement.

(2) The unaudited pro forma net income (loss) per common share, basic and diluted, is based on our historical consolidated statements of income after giving effect to the 175-for-1 forward split of our common stock, which is the midpoint of the Forward Split Range, which will occur prior to the effectiveness of the registration statement.

(3) The pro forma gives effect to: (i) on January 25, 2023, the issuance of 17,500 shares of common stock in repayment of a loan in the principal amount of $100,000; and (ii) on February 27, 2023: (a) the conversion of the 20,000 shares of Series A Preferred Stock

into 458,850 shares of special voting shares of common stock, resulting in the conversion of Series A Preferred Stock dividends in the amount of $884,457, to equity; (b) the cashless exercise of $5,000,000 of warrants (pre-forward split) into 185,500 shares of special voting common stock, resulting in the reduction of warrant liability of $2,819,325; and (c) the subsequent conversion of all 7,819,000 shares of special voting common stock into 7,819,000 shares of common stock.

(4) The pro forma as adjusted balance sheet data in the table above reflects the items described in footnote (3) above and gives effect to: (i) the sale and issuance by us of shares of our common stock in this offering, based upon the assumed initial public offering price of $5.00, which is the midpoint of the price range set forth on the cover page of this prospectus, after deducting the underwriting discounts and commissions and estimated offering expenses payable by us; (ii) conversion of the Private Placement Notes upon the effectiveness of the registration statement of which this prospectus is a part into an aggregate of 775,900 shares of our common stock, at a conversion price of $2.50 per share, which is 50% of the assumed initial public offering price of $5.00 per share, which is the midpoint of the price range set forth on the cover page of this prospectus; and (ii) the payment of $1,649,452 upon the redemption of 10,000 shares of Series B Preferred Stock currently outstanding, at the price of $100 per share, including accumulated dividends calculated through March 31, 2023, pursuant to an agreement with the holder of the Series B Preferred Stock; (iii) repayment of $386,883 in full satisfaction of the amount owed under the LFEIF Note, including interest calculated through March 31, 2023, which shall become due and payable thirty (30) days after the closing of this offering if not earlier converted at the direction of LFEIF; (iv) the issuance of 145,120 shares of common stock in repayment of an aggregate of $725,600 of outstanding loans pursuant to agreements with the holders of such loans upon consummation of this offering; (v) the issuance of warrants to purchase an aggregate of 1,231,817 shares of common stock in exchange for deferred salaries and bonuses in the aggregate amount of $6,159,085 upon consummation of this offering; (vi) the issuance of 318,364 shares of common stock in consideration for accrued consulting fees and commissions in the aggregate amount of $1,591,820 upon consummation of this offering; and (vii) the issuance of 64,000 shares of common stock in consideration for $320,000 of outstanding accounts payable upon consummation of this offering.

RISK FACTORS

Investing in our common stock involves a high degree of risk. You should carefully consider the following risks and uncertainties, together with all the other information in this prospectus, including our financial statements and the related notes included elsewhere in this prospectus, before purchasing our common stock. If any of the following risks actually occurs, our business, operating results, financial condition, liquidity and prospects could be materially adversely affected. As a result, the trading price of our common stock could decline and you could lose part or all of your investment. Additional risks and uncertainties not currently known to us or that we currently deem to be immaterial may also materially adversely affect our business, operating results, financial condition, liquidity and prospects.

Risks Related to Our Financial Position and Need for Capital

We are a clinical-stage biotechnology company that has generated minimal revenue to date and has only generated losses from operations. We are therefore subject to the significant risks associated with such a company.

We are a clinical-stage biotechnology company that was formed in 2010 and have generated minimal revenue to date, and since inception we have only generated losses from operations. As of December 31, 2022, we had only approximately $550,000 in cash and cash equivalent resources and are thus presently only conducting relatively limited operations. We will therefore require the proceeds of this offering or other funding to move our business plan forward. We are a clinical-stage company with no meaningful history of operations, and our only assets consist of a small number of plasma/NO devices, our limited cash and cash equivalents, and our intellectual property related to our proposed therapy. We have to complete clinical trials and receive regulatory approval of our medical device and related therapies before commercial sales of our therapy can commence. The likelihood of success of our business plan must be considered in light of the problems, substantial expenses, difficulties, complications and delays frequently encountered in connection with building and expanding similar businesses and the regulatory and competitive environment in which we operate. Medical technology development is a highly speculative undertaking, involves a substantial degree of risk and is a capital-intensive business.

Therefore, we are and expect for the foreseeable future to be, subject to all the significant risks and uncertainties inherent in a clinical-stage, pre-revenue medical technology business seeking regulatory approval for medical devices and related therapies. As a result, we still must establish many functions necessary to operate a business, including conducting necessary clinical trials, continuing product and technology development, implementing financial systems and controls and personnel recruitment. Even if we achieve regulatory approval for our therapy (of which no assurances can be given), we will need to establish commercial operations, which is also risky and uncertain.

Accordingly, you should consider our prospects in light of the costs, uncertainties, delays and difficulties frequently encountered by companies in the later stage of development, especially clinical biotechnical companies such as ours.

Potential investors should carefully consider the risks and uncertainties that our company will face. In particular, potential investors should consider that we cannot assure you that we will be able to:

- successfully complete the clinical trials necessary to obtain regulatory approval for the marketing of our therapy;
- secure acceptance of our therapy candidate in the medical community and with third-party payors and consumers;
- if approved for commercial sale, launch commercial sales of our product therapy, whether alone or in collaboration with others;
- successfully build an internal marketing team meeting our requirements for the launch of our therapy candidate;
- successfully manufacture our medical technology and establish commercial sales;

- secure market exclusivity and/or adequate intellectual property protection for our medical technology;
- attract and retain an experienced management, board and scientific advisory team;

- successfully implement or execute our current business plan, and we cannot assure you that our business plan is sound; and
- raise sufficient funds in the capital markets to effectuate our business plan.

If we cannot successfully execute any one of the foregoing, our business may not succeed and your investment will be adversely affected.

We are a clinical-stage company and to date we have not commercialized our medical technology.

We are a clinical-stage company and to date we have not commercialized our medical technology. Our success is dependent upon our ability to obtain regulatory approval for and commercialize our medical technology and related therapies. To date, we have not been granted regulatory approval for our medical technology. In order to obtain regulatory approval and successfully commercialize our medical technology, we will have to overcome risks frequently encountered in our industry and are still subject to many of the risks common to such enterprises, including our ability to implement our business plan, market acceptance of our proposed business and lead medical technology and therapies, under-capitalization, cash shortages, limitations with respect to personnel, financing and other resources, competition from better funded and experienced companies, and uncertainty of our ability to generate revenues. There is no assurance that our activities will be successful or will result in any revenues or profit, and the likelihood of our success must be considered in light of the stage of our development. In addition, no assurance can be given that we will be able to consummate our business strategy and plans, or that financial, technological, market, or other limitations may force us to modify, alter, significantly delay, or significantly impede the implementation of such plans. Investors should consider our prospects in light of the risk, expenses and difficulties we will encounter as a clinical-stage company. Our revenue and income potential is unproven and our business model is continually evolving. We are subject to the risks inherent to the operation of a development stage business enterprise and cannot assure you that we will be able to successfully address these risks.

We have a history of operating losses and expect to continue to incur substantial losses for the foreseeable future. We may never become profitable or, if we do, be able to sustain profitability.

To date, we have only generated minimal revenue from operations and we expect to continue to incur significant operating losses in connection with the development our medical technology. We may continue to incur operating losses until such time, if ever, as we are able to achieve sufficient levels of revenue from operations. Our ability to achieve profitability will depend on regulatory approval of our medical technology and if approved, the market acceptance of our product offering and our capacity to develop, introduce and sell our product to our targeted markets. There can be no assurance that we will ever generate significant sales or achieve profitability. Accordingly, the extent of future losses and the time required to achieve profitability, if ever, cannot be predicted at this point.

Even if we succeed in developing and commercializing one or more medical technologies or therapies, we expect to incur substantial losses for the foreseeable future and may never become profitable. We also expect to continue to incur significant operating and capital expenditures and anticipate that our expenses will increase substantially in the foreseeable future as we:

- continue to undertake the clinical trial for our medical technology and therapies;
- seek regulatory approvals for our medical technology and therapies;
- implement additional internal systems and infrastructure; and
- hire additional personnel.

We may not be able to generate revenue or achieve profitability in the future. Our failure to achieve or maintain profitability would likely negatively impact the value of our securities and could prevent us from continuing as a going concern.

Even if we can secure such arrangements, we may continue to have obligations and expenses that exceed the revenue generated by these marketed products. In addition, we could incur significant development and other

expenses if we were to make alterations to the manufacturing process for our medical technology, for preparation and submission of a supplemental information for such alterations, if required by the FDA, and in connection with the launch of our

medical technology and therapies, if approved. Further, as we pursue FDA approval for our medical technology and therapies, we expect that our research and development expenses will continue to increase significantly as we advance our premarket approval process.

We have a relatively limited operating history and may not be able to execute on our business strategy.

We were originally incorporated in 2010 and began clinical trials of our therapy in 2016. Accordingly, we have a limited operating history, which makes an evaluation of our future prospects and execution ability difficult. Our revenue and income-producing potential is unproven, and our business model and strategy continue to evolve. Future revenues are contingent upon several factors, including, without limitation, our ability to develop and commercialize our Ionojet successfully, our ability to develop relationships with customers, as well as the clinical and market acceptance of our technology. We may need to make business decisions that could adversely affect our operating results, such as modifications to our pricing strategy, business structure or operations.

Our independent registered public accounting firm has expressed substantial doubt about our ability to continue as a going concern.

Our independent registered public accounting firm has issued a going concern opinion on our financial statements, expressing substantial doubt that we can continue as an ongoing business for the next twelve months after issuance of their report based on our current development plans and our operating requirements and us having suffered recurring losses from operations and having a net capital deficiency. As described in Note 1 of our accompanying audited financial statements, we anticipate that during 2023 we will not have sufficient capital and that our losses from operations and working capital deficiency raise substantial doubt about our ability as a going concern. Our financial statements do not include any adjustments that may result from the outcome of this uncertainty. If we cannot raise the necessary capital to continue as a viable entity, we could experience a material adverse effect on our business and our stockholders may lose some or all of their investment in us.

Given our lack of current cash resources, revenue and cash flow, we will need to raise additional capital, which may be unavailable to us or, even if raised, may cause dilution or place significant restrictions on our ability to operate.

We believe that the proceeds of this offering, combined with our very limited funds currently on hand, will only be sufficient for us to operate for a relatively limited amount of time. Since we will be unable to generate sufficient, if any, revenue or cash flow to fund our operations for at least several years, we will need to seek additional equity or debt financing to provide the capital required to implement our business plan.

We believe that the proceeds of this offering, combined with our very limited funds currently on hand, will only be sufficient for us to operate for a relatively limited amount of time. Since we will be unable to generate sufficient, if any, revenue or cash flow to fund our operations for at least several years, we will need to seek additional equity or debt financing to provide the capital required to implement our business plan. We believe that the proceeds of this offering will only be sufficient for us to complete the reengineered design of the Ionojet and prepare the required new IDE submission for our pivotal trial in diabetic foot ulcers, but will not be sufficient to allow us to commence or complete the necessary pivotal trial which we estimate will cost approximately $15 million.

We do not currently have any arrangements or credit facilities in place as a source of funds, but we are exploring the possibility of entering into strategic partnering arrangements to provide further financing for our pivotal clinical trial, in addition to the proceeds of this offering. There can be no assurance that we will be able to raise sufficient additional capital on acceptable terms, or at all. If such financing is not available on satisfactory terms, or is not available at all, we may be required to delay, scale back or eliminate the development of business opportunities and our operations and financial condition may be materially adversely affected.

If we raise additional capital by issuing equity securities, the percentage ownership of our existing stockholders will be reduced to the extent that they do not participate in such a raise or raises. Accordingly, these stockholders may experience substantial dilution. We may also issue equity securities that provide for rights, preferences and privileges senior to those of our common stock.

Debt financing, if obtained, may involve agreements that include liens on our assets, covenants limiting or restricting our ability to take specific actions, such as incurring additional debt, could increase our expenses and require that our assets be provided as a security for such debt. Debt financing would also be required to be repaid regardless of our operating results.

If we raise additional funds through collaborations and licensing arrangements, we may be required to relinquish some rights to our technologies or our proposed product, or to grant licenses on terms that are not favorable to us.

Funding from any source may be unavailable to us on acceptable terms, or at all. If we do not have sufficient capital to fund our operations and expenses, we may not be able to achieve our goals, which could lead to the failure of our business and the loss of your investment. We may also be required to liquidate or declare bankruptcy of our Company.

Any failure to raise capital in the future could have a negative impact on our financial condition and our ability to pursue our business strategies.

Our present and future capital requirements will depend on many factors, including:

- the outcome, timing and cost of our current clinical trial to obtain regulatory approval for our medical technology and therapies in the United States;
- the degree and rate of market adoption of our medical technology and therapies, if approved;
- the emergence of new, competing technologies and therapies;
- the costs of R&D activities we undertake to develop new medical technologies and therapies for various indications;
- costs involved in preparing, filing, prosecuting, maintaining and enforcing patent, trademark and other intellectual property claims;
- the costs of commercialization activities, including sales, marketing and manufacturing;
- the costs of building an internal marketing team meeting our requirements for the launch of our medical technology and therapies, if approved;
- our ability to collaborate with third parties on the development and commercialization of our medical technology and therapies;
- the level of working capital required to support our growth; and
- our need for additional personnel, information technology or other operating infrastructure to support our growth and operations as a public company.

If we choose to pursue additional indications and/or geographies for any of our products or product candidates or otherwise expand more rapidly than we presently anticipate, we may also need to raise additional capital sooner than expected.

We expect to derive all our revenues from our principal technology, which leaves us subject to the risk of reliance on such technology, the clinical and consumer acceptance of which is unproven at this time.

We expect to derive all our revenues from the therapy delivered by our Ionojet technology. As such, any factor adversely affecting the use of our device, including the product release cycles, regulatory issues, market acceptance, product competition, claims that our technology infringes third party intellectual property rights, performance and reliability, reputation, price competition and economic and market conditions, would likely harm our operating results. We may be unable to develop other products utilizing our own or any alternative technology, which would likely lead to the failure of our business and the loss of your investment. It is not certain

that our target customers will choose our technology for technical, cost, support or commercial reasons. If our target customers do not widely adopt and purchase our technology, our future growth will be limited. Further, our resources and investments may not be adequate to achieve the targeted level of sales set out in our business plan.

Risks Related to Product Development, Regulatory Approval, Manufacturing and Commercialization

The regulatory approval process is expensive, time-consuming and uncertain and may prevent us from obtaining approvals for the commercialization of our therapy.

The research, testing, manufacturing, labeling, approval, selling, marketing and distribution of medical devices are subject to extensive regulation by the FDA and non-U.S. regulatory authorities, which regulations differ from country to country.

We are not permitted to market our therapy in the United States until we receive premarket approval ("PMA") from the FDA. We have not applied for, or received marketing approval of, our therapy. Obtaining PMA is a lengthy, expensive and uncertain process. Following receipt of a PMA application, the FDA determines whether the application is sufficiently complete to permit a substantive review. If the FDA accepts the application for review, it has 180 days under the Federal Food, Drug, and Cosmetic Act (the "FDCA") to complete its review of a PMA application, although in practice, the FDA's review often takes significantly longer, and can take up to several years. The upcoming pivotal clinical trial may not generate data that the FDA considers adequate to support approval. An advisory panel of experts from outside the FDA may be convened to review and evaluate the application and provide recommendations to the FDA as to the approvability of the device. The FDA may or may not accept the panel's recommendation. In addition, the FDA will generally conduct a pre-approval inspection of the applicant or its third-party manufacturers' or suppliers' manufacturing facility or facilities to ensure compliance with the FDA's Quality System Regulation (the "QSR"). If the FDA fails to approve our therapy, we will be unable to market it for sale or lease.

Between 2013 and 2015, we engaged in extensive discussions with the FDA regarding how it plans to regulate our therapy, given that for U.S. regulatory purposes our therapy is part "drug" (i.e., the NO) and part "device" (the plasma/NO applicator). We believe we have come to agreement with the FDA that CDRH will take the lead in approving our device, consulting as needed with CDER. There is a risk that FDA could change its decision, which would likely cause delays or material changes to our clinical programs and would challenge our ability to obtain FDA approval of our therapy in a timely manner or at all.

In addition, failure to comply with FDA, non-U.S. regulatory authorities or other applicable U.S. and non-U.S. regulatory requirements may, either before or after product clearance or approval, if any, subject us to administrative or judicially imposed sanctions, including:

- restrictions on the products, manufacturers or manufacturing process;
- adverse inspectional observations (Form 483), warning letters or non-warning letters incorporating inspectional observations;
- civil and criminal penalties;
- injunctions;
- suspension or withdrawal of regulatory clearances or approvals;
- product seizures, detentions or import bans;
- voluntary or mandatory product recalls and publicity requirements;
- total or partial suspension of production;
- imposition of restrictions on operations, including costly new manufacturing requirements; and
- refusal to clear or approve pending applications or premarket notifications.

FDA and non-U.S. regulatory authorities can delay, limit or deny clearance or approval of a medical device, medicinal product or drug candidate for many reasons, including:

- the candidate may not be deemed safe or effective, in the case of a PMA application (such as will be required in the U.S. for our device);

- officials may not find the data from our clinical trials sufficient;

- officials might not approve our third-party manufacturer's processes or facilities; or
- FDA or other regulatory authorities may change their clearance or approval policies or adopt new regulations.

We may be unable to commence or complete our required clinical trials, or we may experience significant delays in completing such clinical trials, which could significantly delay our targeted approval and product launch timeframe and impair our viability and business plan.

In order to market our therapy, we will be required to complete additional clinical trials. The completion of our clinical trials could be delayed, suspended or terminated for several reasons, including but not limited to:

- our failure or inability to conduct the clinical trials in accordance with regulatory requirements;
- sites participating in the trials may drop out of the trial, which may require us to engage replacement sites which could result in delays;
- patients may not enroll in, remain in or complete, the clinical trials at the rates we expect (including, without limitation, as a result of the continuation of local, regional, national or international outbreaks of COVID-19 variants); and
- clinical investigators may not perform our clinical trials on our anticipated schedule or consistent with the clinical trial protocol and good clinical practices.

If our clinical trials are delayed it will take us longer to ultimately achieve regulatory approval for and commercialize our therapy and generate revenues. Moreover, our development costs will increase if we have material delays in our clinical trials or if we need to perform more or larger clinical trials than planned.

If we fail to obtain and maintain necessary marketing authorizations from the FDA, other applicable foreign regulatory authorities, if marketing authorizations for future technology, technology modifications or enhancements, and indications are delayed or not issued, or if there are state, federal or international level regulatory changes, our commercial operations could be harmed.

Our Ionojet is subject to extensive regulation in the United States by the FDA and by corresponding state regulatory agencies and authorities. Likewise, our Ionojet will be subject to extensive medical device regulations and requirements in other countries. These regulations pertain to the design development, evaluation, manufacturing, testing, labeling, marketing sale, advertising, promotion, distribution, shipping and servicing of our products. These entities regulate and oversee record-keeping procedures, safety alerts, recalls, market withdrawals, removals and field corrective actions, post-market surveillance, including reporting of deaths or serious injuries and malfunctions that, if they were to occur, could lead to death or serious injury, and product import and export.

The regulations to which we are subject are complex and have tended to become more stringent over time. Regulatory changes could result in restrictions on our ability to carry on or expand our operations, higher than anticipated costs or lower than anticipated sales. Further, the FDA, foreign regulatory agencies and U.S. state agencies have broad enforcement powers, and our failure to comply with state, federal and international regulations could lead to the issuance of warning letters or untitled letters, the imposition of injunctions, suspensions or loss of marketing authorizations, product recalls, safety alerts, termination of distribution, product seizures, consent decrees, civil penalties or import detention. In the most extreme cases, criminal sanctions or closure of our manufacturing facilities are possible.

The process of obtaining and maintaining marketing authorizations to market a medical device in the United States and other countries can be costly and time-consuming, and we may not be able to obtain or maintain these marketing authorizations on a timely basis, if at all. In addition, regulations regarding the development, manufacturing and sale of our products are subject to change. We cannot predict the impact, if any, that such changes might have on our business, financial condition and results of operations. Changes in existing laws or requirements or adoption of new laws or requirements could have a material adverse effect on our business, financial condition and results of operations. There can be no assurance that we will not

incur significant costs to comply with applicable laws and requirements in the future or that applicable laws and requirements will not have a material adverse effect upon our business, financial condition and results of operations.

New legislation and regulations and legislative and regulatory reforms may make it more difficult and costly for us to obtain marketing authorization of our new and modified products, to manufacture, market and distribute our products after marketing authorization is obtained and limit our ability to sell to our customers.

From time to time, legislation is drafted and introduced in the legislative bodies of the countries in which we may sell our therapies to revise the process for regulatory approval, clearance, authorization, manufacture and marketing of regulated products or the reimbursement thereof. In addition, FDA and other applicable foreign regulations and guidance are often revised or reinterpreted by the applicable competent authority in ways that may significantly affect our business and our products. These modifications may have an effect on the way we conduct our business and these modifications may have an impact on the way we design and manufacture devices which could adversely affect our business, financial condition and results of operations.

Any new regulations or revisions or reinterpretations of existing regulations may impose additional costs or lengthen review times of future products or limit our ability to sell to our customers. It is impossible to predict whether legislative changes will be enacted or if regulations, guidance or interpretations will change and what the impact of such changes, if any, may be.

After approval of Ionojet, Ionojet will remain subject to ongoing regulatory obligations and continued regulatory review, which may result in significant additional risk and expense.

Drug products and medical devices remain subject to the jurisdiction of the FDA and non-U.S. regulatory authorities after they have been approved. Even if we obtain regulatory approval of Ionojet and related therapies, the FDA and other regulatory authorities may impose significant restrictions on its indicated uses or marketing or the conditions of approval, or impose ongoing requirements for potentially costly and time-consuming post-approval trials, including additional clinical trials, and post-market surveillance to monitor safety and efficacy. Ionojet and related therapies, if approved, as well as our marketed products are subject to ongoing regulatory requirements governing the manufacturing, labeling, packaging, storage, distribution, safety surveillance, advertising, promotion, sampling, recordkeeping and reporting of adverse events and other post-market information. These requirements include registration with the FDA and continued compliance by our manufacturers with current Good Manufacturing Practice requirements ("cGMPs") and current Good Clinical Practices requirements ("GCPs") for any clinical trials that we conduct post-approval.

The device used in our clinical trials to date is not the same device that we plan to use in our pivotal trial or for commercialization.

Our pivotal trial should be carried out with the form of the device that will be marketed post-approval. From clinician feedback and our own observations, we were able to identify several desirable changes that we believe will enhance commercial adoption, and we have been working on the reengineered design of our device in our own facility. We have made what we believe are significant improvements to our Ionojet technology, however, there can be no assurance that the improvements will result in a device that is as effective as the Ionojet used in the prior clinical trials and that we will experience similar results with the new, improved Ionojet. There can be no assurance that the FDA will approve an IDE with the intended modifications.

Modifications to our products may require new marketing authorizations, and may require us to cease marketing or recall the modified products until marketing authorizations are obtained.

In the United States, any modification to an approved device that could significantly affect its safety or effectiveness, or that would constitute a major change in its intended use, design, or manufacture, requires a new marketing authorization. The FDA regulations require every manufacturer to make this determination in the first instance, but the FDA may review such determinations and may not agree with our decisions regarding whether new marketing authorizations are necessary. If the FDA disagrees with our determination and requires us to submit new PMAs, for modifications to our previously cleared products for which we have concluded that new marketing authorizations are unnecessary, we may be required to cease marketing or to recall the modified products until we obtain marketing authorizations, and we may be subject to significant regulatory fines or penalties.

Environmental and health safety laws may result in liabilities, expenses and restrictions on our operations.

Federal, state, local and foreign laws regarding environmental protection, hazardous substances, climate change and human health and safety may adversely affect our business. Using hazardous substances in our operations, such as the use of NO, which can be rapidly oxidized in air at high concentrations to form nitrogen dioxide (NO_2)

(which at high concentrations can irritate airways in the human respiratory system), exposes us to the risk of accidental injury, contamination or other liability from the use, storage, importation, handling, or disposal of hazardous materials. If our or our contract manufacturers' operations result in the contamination of the environment or expose individuals to hazardous substances, we could be liable for damages and fines, and any liability could significantly exceed our insurance coverage and have a material adverse effect on our on our business, financial condition and results of operations.

Evolving climate change concerns or changes in regulations related to such concerns, including restrictions on the manufacture, supply, use and importation of NO, could subject us to additional costs, including the purchase of importation quotas and increased supply chain costs, and restrictions on the sales of our products. Furthermore, various jurisdictions and regulators may take different approaches to and impose differing or inconsistent requirements under environmental and climate change-related laws, which may make it more costly or difficult for us to sell our products (including by requiring that we monitor such developments, incur increased costs, increase time-to-market and develop additional country-specific variants for certain products) or prevent us from selling certain products in certain geographic markets. Future changes to environmental and health and safety laws, including the enactment of new laws, could cause us to incur additional expenses, redesign our products or restrict our operations, which could have a material adverse effect on our business, financial condition and results of operations, including:

- increasing our administrative and other costs;
- increasing or decreasing mandated services;
- causing us to abandon business opportunities we might have otherwise pursued; or
- requiring us to implement additional or different programs and systems.

The use of hazardous substances is regulated and monitored by various environmental regulatory authorities such as the Environmental Protection Agency ("EPA"). As such, we are subject to national, state and local laws, regulations and directives pertaining to hazardous substances, pollution and protection of the environment, health and safety, which govern, among other things, emissions to the air, discharges onto land or waters, the maintenance of safe conditions in the workplace, and the generation, handling, storage, transportation, treatment and disposal of waste materials. These laws include, without limitation, the Comprehensive Environmental Response, Compensation, and Liability Act, the Federal Facilities Compliance Act, the Hazardous Materials Transportation Act, and the Resource Conservation and Recovery Act.

Some of these laws, regulations and directives are subject to varying and conflicting interpretations. Many of these laws, regulations and directives provide for substantial fines and potential criminal sanctions for violations and require the installation of costly equipment to reduce the likelihood or impact of hazardous substance releases, whether permitted or not. Failure to comply with these laws and regulations could result in costs for corrective action, penalties or the imposition of other liabilities. We also are subject to laws and regulations that impose liability and clean-up responsibility for releases of hazardous substances into the environment. Under certain of these laws and regulations, a current or previous owner or operator of property may be liable for the costs of remediating the release or spill of hazardous substances on or from its property, without regard to whether the owner or operator knew of, or caused, the contamination, and such owner or operator may incur liability to third parties impacted by such contamination. Failure to comply with applicable environmental laws and regulations and the imposition of environmental liability could have a material adverse effect on our business, financial condition and results of operations.

Clinical trials or investigations will be necessary to support a marketing authorization. Such trials or investigations may require the enrollment of large numbers of patients and suitable patients may be difficult to identify and recruit. Delays or failures in our clinical trials or investigations may prevent us from commercializing modified or new products and may adversely affect our business, financial condition and results of operations.

Initiating and completing the clinical trials or investigations necessary to support our current and future technologies will be time consuming and expensive and the outcome of any such clinical trials or investigations is uncertain. Moreover, the results of early clinical trials or investigations are not necessarily predictive of future

results, and any product we advance into clinical trials may not have favorable results in later clinical trials or investigations. For example, the results from the interim analysis of our dose-ranging GENESIS trial may not be replicated in a larger, more rigorous pivotal trial with prespecified statistical comparison between groups. Regulatory authorities

may disagree with our interpretation of data and results from our clinical trials or investigations, and data are often susceptible to various interpretations and analyses. Failure can occur at any stage of clinical testing. Our clinical studies or investigations may produce negative or inconclusive results, and we may decide, or regulators may require us, to conduct additional clinical and non-clinical testing in addition to those we have planned.

The initiation and completion of any clinical studies may be prevented, delayed, or halted for numerous reasons. We may experience delays in our ongoing clinical trials or investigations for a number of reasons, which could adversely affect the costs, timing or successful completion of our clinical trials or investigations, including related to the following:

- we may be required for future products to submit an IDE application to the FDA, which must become effective prior to commencing certain human clinical trials of medical devices, and the FDA may reject our IDE application and notify us that we may not begin clinical trials; similar requirements may apply in foreign countries;
- clinical trials or investigations may produce negative or inconclusive results, and we may decide, or regulators may require us, to conduct additional clinical trials or investigations or abandon product development programs;
- we might have to suspend or terminate clinical trials or investigations for various reasons, including a finding that the subjects are being exposed to unacceptable health risks;
- we may have to amend clinical trial or investigation protocols or conduct additional studies to reflect changes in regulatory requirements or guidance, which we may be required to submit to an IRB or ethics committee and/or regulatory authorities for re-examination; and
- our current or future products may have undesirable side effects or other unexpected characteristics.

Any of these occurrences may significantly harm our business, financial condition and prospects. In addition, many of the factors that cause, or lead to, a delay in the commencement or completion of clinical trials or investigations may also ultimately lead to the denial of marketing authorization of our product candidates.

Our facilities are subject to regulation under the FDCA and FDA implementing regulations.

Our facilities and those of our contract manufacturers and suppliers are subject to regulation under the FDCA and FDA implementing regulations. The FDA may inspect our facilities periodically to determine if we are complying with provisions of the FDCA and FDA regulations. In addition, our facilities must comply with the FDA's cGMP requirements. Our product suppliers are also required to meet certain standards applicable to their manufacturing processes. Our operations could be harmed if regulatory authorities make determinations that we, or our vendors, are not in compliance with these regulations. If the FDA finds a violation of cGMPs, it may enjoin our manufacturing operations, seize product, restrict importation of goods, and impose administrative, civil or criminal penalties or take other enforcement actions, such as requesting or requiring recalls. If we or our contract manufacturers or suppliers fail to comply with applicable regulatory requirements, we or they could be required to take costly corrective actions, including suspending manufacturing operations, changing product designs, suspending sales, or initiating product recalls or market withdrawals. In addition, compliance with these regulations has increased and may further increase the cost of manufacturing certain of our products to ensure and maintain compliance. Any of these outcomes could have a material adverse effect on our business, financial condition and results of operations.

Even after marketing authorizations for our products are obtained, we and our contract manufacturers are subject to extensive post-market regulation by the FDA and foreign regulatory authorities. Our failure to meet strict regulatory requirements could result in our being required to stop sales of our products, conduct voluntary or mandatory product recalls, pay fines, incur other costs or even close our facilities.

Even after devices receive marketing authorizations, there are significant post-market regulations with which we must comply. For example, we are required to comply with the FDA's QSR which covers the methods used in, and the facilities and controls used for, the design, manufacture, quality assurance, labeling, packaging, sterilization, storage, shipping, installation, distribution and servicing of our marketed products. The FDA

enforces the QSR through periodic announced and unannounced inspections of manufacturing facilities. Any failure by us or our contract manufacturers to take satisfactory corrective action in response to an adverse QSR inspection could result in enforcement actions against us or our contract manufacturers.

Later discovery of previously unknown problems with our products, including unanticipated adverse events, adverse events of unanticipated severity or frequency, or manufacturing problems, may result in changes to labeling, restrictions on such products or manufacturing processes, withdrawal of the products from the market, a requirement to repair, replace or refund the cost of any medical device that we manufacture or distribute, fines, import refusals, product seizures, injunctions, the suspension, variation or withdrawal of marketing authorizations or the imposition of civil, administrative or criminal penalties or other enforcement or regulatory actions, each of which could adversely affect our business, financial condition and results of operations.

The FDA and similar foreign governmental authorities also have the authority to require the recall of commercialized products in the event of material deficiencies or defects in design or manufacture or in the event that a product poses an unacceptable risk to health. Manufacturers may, on their own initiative, recall a product if any material deficiency in a device is found or conduct a correction or removal of a device to reduce a risk to health posed by the device, to remedy a violation of law or even if no violation of law has occurred. A government-mandated or voluntary recall by us or one of our distributors could occur as a result of an unacceptable risk to health, component failures, malfunctions, manufacturing defects, manufacturing errors, other problems with design or labeling, packaging defects or other deficiencies or failures to comply with applicable regulations.

Depending on the corrective action we take to redress a product's deficiencies or defects, the FDA, other applicable foreign regulatory authorities may require, or we may decide, that we will need to obtain marketing authorizations for the product before we may market or distribute the corrected product. Seeking such marketing authorizations may delay our ability to replace the recalled or withdrawn products in a timely manner. Moreover, if we do not adequately address problems associated with our products, we may face additional regulatory enforcement action, including warning letters, product seizure, injunctions, administrative penalties or civil or criminal fines. Companies often are required to maintain certain records of recalls and withdrawals, even if they are not reportable to the applicable regulatory authority. We may initiate voluntary withdrawals for our products in the future that we determine do not require notification of the FDA, other applicable foreign regulatory authorities. If such regulatory authority disagrees with our determinations, it could require us to report those actions as recalls and we may be subject to enforcement action.

Any future recalls or market withdrawals of any of our products would divert managerial and financial resources and have an adverse effect on our reputation, business, financial condition and results of operations, which could impair our ability to produce our products in a cost-effective and timely manner in order to meet our customers' demands. We may also be required to bear other costs or take other actions that may have a negative impact on our future sales and our ability to generate profits. A future recall announcement or corrective action, whether voluntary or involuntary, could also potentially lead to product liability claims against us.

The FDA's medical device reporting regulations and similar foreign regulations require us to report to the FDA and other foreign governmental authorities when we receive or become aware of information that reasonably suggests that one or more of our products may have caused or contributed to a death or serious injury or malfunctioned in a way that, if the malfunction were to recur, it could cause or contribute to a death or serious injury. The timing of our obligation to report is triggered by the date we become aware of the adverse event as well as the nature of the event. We may fail to report adverse events of which we become aware within the prescribed timeframe. We may also fail to recognize that we have experienced a reportable adverse event, especially if it is not reported to us as an adverse event or if it is an adverse event that is unexpected or removed in time from the use of the product. If we fail to comply with our reporting obligations or any other regulatory requirements, the FDA and other foreign governmental authorities could take action, including issuances of warning letters or untitled letters, administrative actions, criminal prosecution, imposition of civil monetary penalties, revocation of our marketing authorizations or failure to grant new marketing authorizations, seizure of our products or delay in marketing authorizations of future products, recalls, requirements for customer notifications or repairs, operating restrictions or partial suspension or total shutdown of production. Any of these enforcement actions or sanctions could result in higher than anticipated costs or lower than anticipated sales and have a material adverse effect on our reputation, business, financial condition and results of operations.

Disruptions at the FDA or foreign regulatory agencies caused by funding shortages or global health concerns could hinder their ability to hire and retain key leadership and other personnel, or otherwise prevent new products and services from being developed or commercialized in a timely manner, which could negatively impact our business.

The ability of the FDA and foreign regulatory agencies to review and clear, approve or certify new products can be affected by a variety of factors, including government budget and funding levels, ability to hire and retain key personnel and accept the payment of user fees and statutory, regulatory and policy changes. Average review times at these organizations have fluctuated in recent years as a result. In addition, government funding of other government agencies that oversee marketing authorizations and that fund research and development activities is subject to the political process, which is inherently fluid and unpredictable.

Disruptions at these agencies may slow the time necessary for new devices to be reviewed and/or cleared, approved or certified, which would adversely affect our business. For example, over the last several years, the U.S. government has shut down several times and certain regulatory agencies, such as the FDA, have had to furlough critical employees and stop critical activities. Separately, in response to the global COVID-19 pandemic, in March 2020, the FDA temporarily postponed all domestic and foreign routine surveillance facility inspections. Subsequently, in July 2020, the FDA announced its intention to resume certain on-site inspections of domestic manufacturing facilities subject to a risk-based prioritization system and in May 2021, the FDA issued a new report outlining the agency's plan to move toward a more consistent state of inspectional capacity and priorities for domestic and foreign inspections that were not performed during the pandemic. The FDA's report continues to prioritize mission-critical inspections and higher priority inspections that are not considered mission-critical, such as for-cause inspections, as well as high-risk assignments based on FDA's risk-based work plan, over lower priority inspections such as routine surveillance. Regulatory authorities outside the United States may adopt similar restrictions, inspection priorities or other policy measures in response to the COVID-19 pandemic or rely on remote interactive evaluations, record requests or information from trusted regulatory partners if on-site inspections are not feasible. If a prolonged government shutdown occurs, or if global health concerns continue to prevent the FDA, other foreign regulatory authorities from conducting their regular inspections, reviews, or other regulatory activities, it could significantly impact the ability of the FDA and other regulatory authorities to timely review and process our regulatory submissions, which could have a material adverse effect on our business.

The FDA and other regulatory enforcement agencies actively enforce the laws and regulations prohibiting the promotion of off-label uses. If we are found to have improperly promoted off-label uses, we may become subject to significant liability.

The FDA and other regulatory enforcement agencies strictly regulate the promotional claims that may be made about medical devices. For example, devices authorized for marketing clearance cannot be marketed for any intended use beyond the cleared indications. The FDA does not restrict or regulate a physician's use of a medical product within the practice of medicine, and we cannot prevent a physician from using our products for an off-label use. The use of our products for indications other than those for which our products have been cleared by the FDA or approved or authorized by foreign regulatory enforcement authorities may not effectively treat the conditions not referenced in product indications, which could harm our reputation in the marketplace among practitioners and patients. If we are found to have promoted such "off-label" uses, we may become subject to significant government fines and other related liability. It is also possible that other federal, state or foreign enforcement authorities might take action under other regulatory authority if they consider our business activities to constitute promotion of an off-label use, which could result in significant penalties, including, but not limited to, criminal, civil and administrative penalties, damages, fines, disgorgement, and the curtailment of our operations. The federal government has levied large civil and criminal fines against companies for alleged improper promotion and has enjoined several companies from engaging in off-label promotion. The government has also required companies to enter into consent decrees or imposed permanent injunctions under which specified promotional conduct is changed or curtailed.

Our business is subject to complex and evolving U.S. and foreign laws and regulations regarding privacy and data protection. Many of these laws and regulations are subject to change and uncertain interpretation, and could result in claims, changes to our business practices, monetary penalties, increased costs of operations or otherwise harm our business, financial condition and results of operations.

We are subject to a variety of laws and regulations in the United States and abroad regarding privacy and data protection, some of which can be enforced by private parties or government entities and some of which provide for significant penalties for non-compliance. There are numerous laws in the countries in which we operate regarding privacy and the storage, sharing, use, processing, disclosure and protection of this kind of information, the scope of which are constantly changing, and in some cases, inconsistent and conflicting and subject to differing interpretations, as new laws of this nature are proposed and adopted and we currently, and from time to time, may not be in technical compliance with all such laws.

As our operations and business grow, we may become subject to or affected by new or additional data protection laws and regulations and face increased scrutiny or attention from regulatory authorities. In the U.S., the Health Insurance Portability and Accountability Act ("HIPAA") imposes, among other things, certain standards relating to the privacy, security, transmission and breach reporting of individually identifiable health information. Certain states have also adopted comparable privacy and security laws and regulations, some of which may be more stringent than HIPAA. Such laws and regulations will be subject to interpretation by various courts and other governmental authorities, thus creating potentially complex compliance issues for us and our future customers and strategic partners. In addition, the California Consumer Privacy Act of 2018 (the "CCPA"), went into effect on January 1, 2020. The CCPA creates individual privacy rights for California consumers and increases the privacy and security obligations of entities handling certain personal information. The CCPA provides for civil penalties for violations, as well as a private right of action for data breaches that is expected to increase data breach litigation. The CCPA may increase our compliance costs and potential liability, and many similar laws have been proposed at the federal level and in other states. Further, the California Privacy Rights Act (the "CPRA"), recently passed in California, which expands upon CCPA and will impose further obligations on covered businesses when it becomes effective on January 1, 2023. In the event that we are subject to or affected by HIPAA, the CCPA, the CPRA or other domestic privacy and data protection laws, any liability from failure to comply with the requirements of these laws could adversely affect our financial condition.

In response to these laws, we have reviewed and amended our information practices involving applicable customers, patients and employees, as well as our use of service providers or interactions with other parties to whom we disclose personal information. We cannot yet predict the full impact of these laws and their respective implementing regulations on our business or operations, but these laws may require us to further modify our information practices and policies, and to incur substantial costs and expenses in an effort to comply. We make public statements about our use and disclosure of personal information through our privacy policy, information provided on our website and press statements. We may at times fail to comply with our public statements or be alleged to have failed to do so. We may be subject to potential government or legal action if such policies or statements are found to be deceptive, unfair or misrepresentative of our actual practices. In addition, from time to time, concerns may be expressed about whether our products and services compromise the privacy of our users and others. Any concerns about our data privacy and security practices (even if unfounded), or any failure, real or perceived, by us to comply with our posted privacy policies or with any legal or regulatory requirements, standards, certifications or orders or other privacy or consumer protection-related laws and regulations applicable to us, could cause our users to reduce their use of our products and services.

There is no assurance that we will not be subject to claims that we have violated applicable laws or codes of conduct, that we will be able to successfully defend against such claims or that we will not be subject to significant fines and penalties in the event of non-compliance. In addition, to the extent multiple state-level laws are introduced with inconsistent or conflicting standards and there is no federal law to preempt such laws, compliance with such laws could be difficult to achieve and we could be subject to fines and penalties in the event of non-compliance. Any failure or perceived failure by us or our employees, representatives, contractors, consultants, collaborators, or other third parties to comply with such requirements or adequately address privacy and security concerns, even if unfounded, could result in additional cost and liability to us, damage our reputation, and adversely affect our business and results of operations.

U.S. and foreign laws and regulations regarding privacy and data security may also affect our products as well as the design, clearance and approval of future products. Compliance with existing, not yet effective, and proposed privacy and data protection laws and regulations can be costly and can delay or impede our ability to market and sell our products, impede our ability to conduct business through websites we and our partners may operate, change and limit

the way we use patient information in operating our business, cause us to have difficulty maintaining a single operating model, result in negative publicity, increase our operating costs, require significant management time and attention, or subject us to inquiries or investigations, claims or other remedies, including significant fines and penalties or demands that we modify or cease existing business practices. In addition, if our privacy or data security measures fail to comply with applicable current or future laws and regulations, we may be subject to litigation, regulatory investigations, enforcement notices requiring us to change the way we use personal data or our marketing practices, fines or other liabilities, as well as negative publicity and a potential loss of business.

We will rely on third-parties and consultants to conduct all of our clinical trials. If these third-parties or consultants do not successfully carry out their contractual duties, comply with regulatory requirements, or meet expected deadlines, we may be unable to obtain regulatory approval for our Ionojet device or our future product candidates.

We will rely on medical institutions, clinical investigators, contract laboratories, collaborative partners and other third-parties, such as CROs, to conduct clinical trials on our Ionojet device or our future product candidates. The third-parties with whom we may contract for execution of any of our future clinical trials may play a significant role in the conduct of these trials and the subsequent collection and analysis of data. These third-parties would not be our employees, and except for contractual duties and obligations, we would have limited ability to control the amount or timing of resources that they devote to any of our future programs. Although we may rely on these third-parties to conduct our clinical trials, we would remain responsible for ensuring that each of our preclinical trials and clinical trials is conducted in accordance with applicable legal requirements, the investigational plan and the protocol. Moreover, whether we conduct trials ourselves or hire third parties to do so, the FDA and other similar regulatory authorities require us to comply with GCPs when we conduct, monitor, record and report the results of clinical trials to ensure that the data and results are scientifically credible and accurate, and that the trial subjects are adequately informed of the potential risks of participating in clinical trials.

In addition, the execution of clinical trials, and the subsequent compilation and analysis of the data produced, requires coordination among various parties. In order for these functions to be carried out effectively and efficiently, it is imperative that these parties communicate and coordinate with one another. Moreover, these third parties may also have relationships with other commercial entities, some of which may compete with us. If the third parties or consultants conducting our clinical trials do not perform their contractual duties or obligations, experience work stoppages, do not meet expected deadlines, terminate their agreements with us or need to be replaced, or if the quality or accuracy of the clinical data they obtain is compromised due to the failure to adhere to our clinical trial protocols or GCPs, or for any other reason, we may need to conduct additional clinical trials or enter into new arrangements with alternative third parties, which could be difficult, costly or impossible, and our clinical trials may be extended, delayed or terminated or may need to be repeated. If any of the foregoing were to occur, we may not be able to obtain, or may be delayed in obtaining, regulatory approval for and will not be able to, or may be delayed in our efforts to, successfully commercialize our Ionojet device or any future product candidates being tested in such trials.

Data obtained from clinical trials are susceptible to varying interpretations, which could delay, limit or prevent regulatory approvals.

Data already obtained, or data we may obtain in the future, from studies and clinical trials do not necessarily predict the results that will be obtained from later non-clinical studies and clinical trials. Moreover, non-clinical and clinical data are susceptible to multiple and varying interpretations or may simply be viewed by FDA as inadequate to support the proposed indications for use, which could delay, limit or prevent regulatory approval. Several companies in the biotechnology and pharmaceutical industries, including those involved in medical devices, have suffered significant setbacks in advanced clinical trials, even after obtaining promising results in earlier trials. The failure to demonstrate adequately the safety and effectiveness of a product under development could delay or prevent regulatory clearance of the product, resulting in delays to commercialization, and could materially harm our business. In addition, our clinical trials may not demonstrate sufficient levels of safety and efficacy necessary to obtain the requisite regulatory approvals for our therapy, and thus our proposed therapy may not be approved for marketing.

We will rely on third-parties to manufacture and supply the device component of our therapy.

We do not own or operate manufacturing facilities for the production of our Ionojet platform. We lack the resources and the capability to manufacture our device either for clinical trials or on a commercial scale. If our manufacturing partners are unable to produce the device components of our therapy in the numbers that we require, we may not be

able to establish a contract with and obtain a sufficient alternative supply from another supplier on a timely basis and in the numbers we require. We expect to depend on third-party contract manufacturers for the foreseeable future. While our service providers have generally met our expectations in the past, their ability and willingness to continue to do so going forward, and the ability and willingness of any new service provider to meet our expectations in the future, may be limited for several reasons, including our relative importance as a customer or disruptions caused by the COVID-19 pandemic.

Any of our contract manufacturers will be subject to ongoing periodic unannounced inspection by FDA and other non-U.S. regulatory authorities to ensure strict compliance with quality system regulations, including current good manufacturing practices and other applicable government regulations and corresponding standards. If our contract manufacturers fail to achieve and maintain high manufacturing standards in compliance with quality system regulations, we may experience manufacturing errors resulting in patient injury or death, product recalls or withdrawals, delays or interruptions of production or failures in product testing or delivery, delay or prevention of filing or approval of marketing applications for our therapy, cost overruns or other problems that could seriously harm our business.

Any performance failure on the part of our contract manufacturers could delay clinical development or regulatory clearance or approval of our therapy or commercialization of our therapy, depriving us of potential product revenue and resulting in additional losses. In addition, our dependence on a third-party for manufacturing may adversely affect our future profit margins. Our ability to replace an existing manufacturer may be difficult because the number of potential manufacturers is limited, and FDA and other relevant regulators must approve any replacement manufacturer before it can begin manufacturing the device component of our therapy. Such approval would require additional testing and compliance inspections. It may be difficult or impossible for us to identify and engage a replacement manufacturer on acceptable terms in a timely manner, or at all.

If the manufacturers upon whom we rely fail to comply with stringent regulations, we may face delays in the development and commercialization of, or be unable to meet demand for, our medical technology and may lose potential revenues.

Any problems or delays our contract manufacturers experience in preparing for commercial-scale manufacturing of a medical technology, including our Ionojet device, or a component thereof, may result in a delay in product development timelines and the FDA or comparable foreign regulatory authority approval of the product candidate or may impair our ability to manufacture commercial quantities or such quantities at an acceptable cost and quality, which could result in the delay, prevention, or impairment of clinical development and commercialization of our product candidates and may materially harm our business, financial condition, results of operations, stock price and prospects.

In addition, manufacturers of medical devices and drug products and their facilities are subject to continual review and periodic inspections by the FDA and other regulatory authorities for compliance with cGMP requirements relating to quality control, quality assurance and corresponding maintenance of records and documents. Although we do not have day-to-day control over our contract manufacturers' compliance with these requirements, we are responsible for ensuring compliance with such requirements. Our failure, or the failure of our contract manufacturers, to comply with applicable regulations could result in sanctions being imposed on us, including clinical holds, fines, injunctions, civil penalties, delays, suspension or withdrawal of approvals, revocation of licenses, seizures or recalls of medical technology, operating restrictions and criminal prosecutions, any of which would significantly and adversely affect supplies of our medical technology and our business. If a contract manufacturer's facilities do not pass a pre-approval inspection or do not have a cGMP compliance status acceptable to the FDA or a comparable foreign regulatory authority, our medical technology or therapies will not be approved.

Any deviations from regulatory requirements may also require remedial measures that may be costly and/or time-consuming for us or a third-party to implement and that may include the temporary or permanent suspension of a clinical trial or the temporary or permanent closure of a facility. Any such remedial measures imposed upon us or third parties with whom we contract could materially harm our business. Any delays in obtaining products or product candidates that comply with the applicable regulatory requirements may result in delays to product approvals, and commercialization. It may also require that we conduct additional trials.

If our therapy fails to satisfy current or future regulatory or customer requirements, we may be required to make significant expenditures to redesign the device, and we may have insufficient resources to do so.

Our therapy is being designed to address an evolving marketplace and must comply with current and evolving customer requirements in order to gain market acceptance. There is a risk that our therapy will not meet anticipated customer requirements or desires. If we are required to redesign our therapy to address regulatory or customer demands or otherwise modify our business model, we may incur significant unanticipated expenses and losses, and we may be left with insufficient resources to engage in such activities. If we are unable to redesign our therapy, develop new products or modify our business model to meet regulatory or customer demands or requirements that may emerge, our business might fail.

Our Ionojet platform may contain undetected errors, which could limit our ability to provide our services and diminish the attractiveness of our product and service offerings.

Our Ionojet platform may contain undetected errors, defects or bugs. As a result, our customers or end users may discover errors or defects in our devices, software or the systems we design, or the products or systems incorporating our designs and intellectual property may not operate as expected. We may discover significant errors or defects in the future that we may not be able to fix. Our inability to fix any of those errors could limit our ability to provide our therapy, impair the reputation of our brand and diminish the attractiveness of our offerings to our customers.

In addition, we may utilize third-party technology or components in our device and we may rely on those third-parties to provide support services to us. Failure of those third-parties to provide necessary support services could materially adversely impact our business.

We face intense competition, and we may not be able to compete in our industry.

We are a "start-up" company with minimal history of revenue generating operations. We face intense competition in the wound care market, and most of our competitors have long histories and strong reputations within the industry. In the treatment of wounds we face competition from standard of care products currently being used to treat wounds as well as companies using NO to treat indications. In fact, there are currently five clinical trials listed on clinicaltrials.gov that are using or have used NO, or stimulated the production of NO, in their trials to help treat diabetic foot ulcers, two of which are currently recruiting patients. Our competitors have significantly greater financial and human resources than we do. Our competitors also have more experience and capabilities in researching and developing testing products, obtaining regulatory approvals and intellectual property protection for those products, and manufacturing and marketing those products than we do. There is a significant risk that we may be unable to overcome the advantages held by our competition, and our inability to do so could lead to the failure of our business and the loss of your investment in our Company.

The continuing development of our products depends upon our maintaining strong working relationships with physicians.

The research, development and marketing of our current product and potential new and improved products or future product indications for which we receive regulatory clearance or approval depend upon our maintaining working relationships with physicians. We rely on these professionals to provide us with considerable knowledge and experience regarding the development and marketing of our products. Physicians assist us in clinical trials and in marketing, and as researchers, product consultants and public speakers. If we cannot maintain our strong working relationships with these professionals and continue to receive their advice and input, the development and marketing of our products could suffer, which could have a material adverse effect on our business, financial condition and results of operations. At the same time, the medical device industry's relationship with physicians is under increasing scrutiny by the U.S. Department of Health and Human Services Office of Inspector General (the "OIG"), the U.S. Department of Justice (the "DOJ"), the state attorney generals and other foreign and domestic government agencies. Our failure to comply with requirements governing the industry's relationships with physicians or an investigation into our compliance by the OIG, the DOJ, state attorney generals and other government agencies, could have a material adverse effect on our business, financial condition and results of operations.

It may be difficult for us to establish market acceptance of our therapy, which would significantly impair our viability.

We are faced with the risk that the marketplace will not be receptive to our therapy in preference to competing therapies and that we will be unable to compete effectively. Failure of our therapy to achieve market acceptance could have a material adverse effect on our business, financial condition and results of operations. Factors that could affect our ability to establish our therapy include the development of products or platforms that could result in a shift of customer preferences away from our therapy and significantly decrease revenue. If we are unable to establish market acceptance of our therapy, our business would likely fail and you would lose your investment in our Company.

The degree of market acceptance of any medical technology and therapies depends on a number of factors, such as:

- effectively competing with other therapies;
- the prevalence and severity of any side effects;
- success of patients in well-controlled clinical trials compared to real-world success of patients post FDA approval;
- our ability to educate and increase physician awareness of the benefits of our products relative to competing medical technology and therapies;
- the willingness of physicians and healthcare organizations to change their current treatment practices;
- the willingness of hospitals and hospital systems to include our therapies as treatment options;
- efficacy and potential advantages compared to alternative treatments;
- the price we charge for our therapies;
- interpretations of the results of our clinical trials;
- the status of our therapies on the formularies of third-party payers;
- convenience and ease of administration compared to alternative treatments;
- the willingness of the target patient population to try new therapies and of physicians to implement these therapies;
- the willingness of the target patient population to pay for our products, including co-pays under their health coverage plans;
- the strength of marketing and distribution support; and
- the availability of third-party coverage and adequate reimbursement.

The failure to attain market acceptance among the medical community, patients and third-party payors may have an adverse impact on our operations and profitability.

If we fail to respond quickly to technological developments, our therapy may become uncompetitive and obsolete.

The markets in which we plan to compete experience rapid technology developments, changes in industry standards, changes in customer requirements, and frequent new product introductions and improvements. If we are unable to respond quickly to these developments, we may lose competitive position, and our therapy or technologies may become uncompetitive or obsolete, causing revenues and operating results to suffer.

Developing medical technology entails significant technical, regulatory and business risks.

We may fail to adapt our technology to user requirements or emerging treatment standards. Plasma-NO is not currently considered standard of care for wounds such as foot ulcers and may not ever be considered standard of care. Treatment standards may not evolve to incorporate our product. New industry standards for the development, manufacture and

marketing of medical devices may evolve and we may not be able to conform to the changes, meet new standards in a timely fashion or maintain a competitive position in the market. If we face material delays in introducing our products and new technology, we may fail to attract new customers.

Customer or third-party complaints or negative reviews or publicity about us or our technology could harm our reputation and brand.

We will be heavily dependent on customers who use our technology to provide good reviews and word-of-mouth recommendations to contribute to our growth. Customers who are dissatisfied with their experiences with our technology and resulting therapy may post negative reviews. We may also be the subject of blog, forum or other media postings that include inaccurate statements and/or create negative publicity. In addition, any negative news regarding NO may adversely impact our business. Any negative reviews or publicity, whether real or perceived, disseminated by word-of-mouth, by the general media, by electronic or social networking means or by other methods, could harm our reputation and brand and could severely diminish consumer confidence in our products.

Healthcare regulatory reform may affect our ability to sell our products profitably and could adversely affect our business, results of operations and financial condition.

In the United States and in certain foreign jurisdictions, there has been a number of legislative and regulatory proposals to change the regulatory and healthcare systems in ways that could prevent or delay marketing approval or certification of our products in development, restrict or regulate post- approval or certification activities of our products and impact our ability to sell our products profitably. In the United States in recent years, new legislation has been proposed and adopted at the federal and state level that is effecting major changes in the healthcare system. In addition, new regulations and interpretations of existing healthcare statutes and regulations are frequently adopted. By way of example, the Affordable Care Act, as amended by the Health Care and Education Reconciliation Act (collectively, the ("ACA") substantially changed the way healthcare is financed by both governmental and private insurers, encourages improvements in the quality of healthcare items and services and significantly impacts the medical device industry. Among other things, the ACA:

- increased the statutory minimum rebates a manufacturer must pay under the Medicaid Drug Rebate Program;
- created a new methodology by which rebates owed by manufacturers under the Medicaid Drug Rebate Program are calculated for drugs that are inhaled, infused, instilled, implanted or injected;
- extended manufacturers' Medicaid rebate liability to individuals enrolled in Medicaid-managed care organizations;
- expanded eligibility criteria for Medicaid programs;
- established a new Patient-Centered Outcomes Research Institute to oversee and identify priorities in comparative clinical effectiveness research in an effort to coordinate and develop such research; and
- implemented payment system reforms including a national pilot program on payment bundling to encourage hospitals, physicians and other providers to improve the coordination, quality and efficiency of certain healthcare services through bundled payment models.

Since its enactment, there have been judicial, executive and Congressional challenges to certain aspects of the ACA. On June 17, 2021, the U.S. Supreme Court dismissed the most recent judicial challenge to the ACA brought by several states without specifically ruling on the constitutionality of the ACA. Prior to the Supreme Court's decision, President Biden issued an executive order to initiate a special enrollment period for purposes of obtaining health insurance coverage through the ACA marketplace, from February 15, 2021 through August 15, 2021. The executive order also instructed certain governmental agencies to review and reconsider their existing policies and rules that limit access to healthcare, including among others, reexamining Medicaid demonstration projects and waiver programs that include work requirements, and policies that create unnecessary barriers to obtaining access to health insurance coverage through Medicaid or the ACA.

We cannot predict with certainty what impact any U.S. federal and state health reforms will have on us, but such changes could impose new and/or more stringent regulatory requirements on our activities or result in reduced reimbursement for our products, any of which could adversely affect our business, results of operations and financial condition.

In addition, other legislative changes have been proposed and adopted since the ACA was enacted. The Budget Control Act of 2011, among other things, reduced Medicare payments to providers by 2% per fiscal year, effective on April 1, 2013 and, due to subsequent legislative amendments to the statute, will remain in effect through 2030, with the exception of the temporary suspension from May 1, 2020, through March 31, 2022, unless additional Congressional action is taken. Additionally, the American Taxpayer Relief Act of 2012, among other things, further reduced Medicare payments to several providers, including hospitals, and increased the statute of limitations period for the government to recover overpayments to providers from three to five years. Third-party payers also regularly update payments to physicians and hospitals where our products are used. By way of example, the Medicare Access and CHIP Reauthorization Act of 2015 ("MACRA"), enacted on April 16, 2015, repealed the formula by which Medicare made annual payment adjustments to physicians and replaced the former formula with fixed annual updates and a new system of incentive payments that are based on various performance measures and physicians' participation in alternative payment models such as accountable care organizations. It is unclear what effect new quality and payment programs, such as MACRA, may have on our business, financial condition, results of operations or cash flows. These and other payment updates could directly impact the demand for our products or any products we may develop in the future, if cleared or approved.

We expect that other healthcare reform measures that may be adopted in the future may result in additional reductions in Medicare and other healthcare funding, more rigorous coverage criteria, new payment methodologies and in additional downward pressure on the price that we receive for any cleared or approved products. Furthermore, we believe that many individuals who have obtained insurance coverage through the health insurance exchanges which arose as a result of the ACA have done so with policies that have significantly higher deductibles than policies they may have obtained prior to its enactment. Because the out-of-pocket costs of undergoing certain procedures for patients who have not met their deductible for a given year would be significantly higher than they historically would have been, these patients may be discouraged from undergoing certain procedures due to the cost. Any reluctance on the part of patients to undergo procedures utilizing our products due to cost could impact our ability to expand sales of our products and could adversely impact our business, results of operations and financial condition.

Product liability suits, whether or not meritorious, could be brought against us due to an alleged defective product or for the misuse of our therapy. These suits could result in expensive and time-consuming litigation, payment of substantial damages, and an increase in our insurance rates.

If our Ionojet device is defectively designed or manufactured, contains defective components or is misused, or if someone claims any of the foregoing, whether or not meritorious, we may become subject to substantial and costly litigation. Misusing our therapy or failing to adhere to the operating guidelines could cause significant harm to patients, including death. In addition, if our operating guidelines are found to be inadequate, we may be subject to liability. Product liability claims could divert management's attention from our core business, be expensive to defend and result in sizable damage awards against us. Any product liability claims brought against us, with or without merit, could increase our product liability insurance rates or prevent us from securing continuing coverage, could harm our reputation in the industry and could reduce revenue. Product liability claims in excess of our insurance coverage would be paid out of cash reserves, thus harming our financial condition and adversely affecting our results of operations.

Delays in the enrollment of patients in any or all of our clinical trials could increase our development costs and delay completion of our clinical trials and associated regulatory submissions.

We may not be able to initiate or continue clinical trials for our Ionojet device or any future product candidates if we are unable to locate and enroll a sufficient number of eligible patients to participate in these trials as required by the FDA or other regulatory authorities. COVID-19 outbreaks may make this even more challenging. Even if

we are able to enroll a sufficient number of patients in our clinical trials, if the pace of enrollment is slower than we expect, the development costs for our product candidates may increase, and the completion of our trials may be delayed or our trials could become too expensive to complete.

If serious adverse effects are identified with respect to our Ionojet device and related therapy, or any of our future product candidates, or any of our approved products, we may need to modify or abandon our development of that product candidate, discontinue sale of an approved product, or change our labeling to reflect new safety risks.

It is impossible to guarantee when, or if, any of our product candidates, including the Ionojet device, will prove safe enough to receive regulatory approval. It is impossible to guarantee that safety issues that may arise during development will not significantly decrease the commercial potential of our product candidates. In addition, there can be no assurance that our clinical trials will identify all relevant safety issues. Known or previously unidentified adverse effects can adversely affect regulatory approvals or marketing of approved products. In such an event, we might need to abandon marketing efforts or development of that product or product candidate or enter into a partnership to continue development. While there have been no device-related or therapy-related adverse events reported in any of our clinical trials of our Ionojet device to date, there is no guarantee that there will not be adverse events reported in our pivotal clinical trial.

If a regulatory agency discovers adverse events of unanticipated severity or frequency it may impose restrictions on that product or us, including requiring withdrawal of the product from the market. Among other legal and administrative actions, a regulatory agency may:

- mandate modifications to product labelling or promotional materials or require us to provide corrective information to healthcare practitioners;
- withdraw any regulatory approvals;
- place any ongoing clinical trials on clinical hold;
- refuse to approve pending applications or supplements to approved applications filed by us, our partners or our potential future partners;
- impose restrictions on operations, including costly new manufacturing, licensing or packaging requirements; or
- seize or detain products or require a product recall.

In addition, the occurrence of any of the foregoing, even if promptly remedied, could (1) negatively impact the perception of us or the relevant product among the medical community, patients or third-party payors and (2) result in product liability litigation that could result in the company paying substantial amounts of money in settlements or verdicts.

If we fail to comply with U.S. federal and state fraud and abuse and other healthcare laws and regulations, including those relating to kickbacks and false claims for reimbursement, we could face substantial penalties and our business operations and financial condition could be adversely affected.

Healthcare providers and third-party payors play a primary role in the distribution, recommendation, and use of any medical device for which we have or obtain marketing clearance or approval. Any future arrangements that we have with principal investigators, healthcare professionals, and third-party payors, will expose us to broadly applicable anti-fraud and abuse, anti-kickback, false claims and other healthcare laws and regulations that may constrain our business, our arrangements and relationships with customers, and how we market and distribute our marketed medical devices. It will not always be possible to identify and deter misconduct by our employees and other third-parties, and the precautions we intend to take to detect and prevent noncompliance may not be effective in protecting us from governmental investigations for failure to comply with applicable fraud and abuse or other healthcare laws and regulations.

In the United States, we are subject to various state and federal anti-fraud and abuse laws, including, without limitation, the federal healthcare Anti-Kickback Statute ("Anti-Kickback Statute") and federal civil False Claims Act. There are similar laws in other countries. Our relationships and our distributors' relationships with physicians, other health care professionals and hospitals will be subject to scrutiny under these laws.

Healthcare fraud and abuse laws and related regulations are complex, and even minor irregularities can potentially give rise to claims that a statute or prohibition has been violated. The laws that may affect our ability to operate include:

- the Anti-Kickback Statute, which prohibits, among other things, knowingly and willingly soliciting, offering, receiving or paying remuneration, directly or indirectly, overtly or covertly, in cash or in kind, to induce or reward either the referral of an individual, or the purchase, order or recommendation of, items or services for which payment may be made, in whole or in part, under a federal healthcare program, such as the Medicare and Medicaid programs. The term "remuneration" has been broadly interpreted to include anything of value, and the government can establish a violation of the Anti-Kickback Statute without proving that a person or entity had actual knowledge of the law or a specific intent to violate. In addition, the government may assert that a claim, including items or services resulting from a violation of the Anti-Kickback Statute, constitutes a false or fraudulent claim for purposes of the federal civil False Claims Act. The Anti-Kickback Statute is subject to evolving interpretations and has been applied by government enforcement officials to a number of common business arrangements in the medical device industry. There are a number of statutory exceptions and regulatory safe harbors protecting certain business arrangements from prosecution under the Anti-Kickback Statute; however, those exceptions and safe harbors are drawn narrowly, and there is no exception or safe harbor for many common business activities, such as reimbursement support programs, educational and research grants or charitable donations. Practices that involve remuneration to those who prescribe, purchase or recommend medical devices, including discounts, providing items or services for free or engaging such individuals as consultants, advisors or speakers, may be subject to scrutiny if they do not fit squarely within an exception or safe harbor and would be subject to a facts and circumstances analysis to determine compliance with the Anti-Kickback Statute;

- federal civil and criminal false claims laws and civil monetary penalties laws, including the federal civil False Claims Act, which prohibits, among other things, persons or entities from knowingly presenting, or causing to be presented, a false or fraudulent claim for payment of government funds and knowingly making, using or causing to be made or used, a false record or statement to get a false claim paid or to avoid, decrease or conceal an obligation to pay money to the federal government. A claim including items or services resulting from a violation of the Anti-Kickback Statute constitutes a false or fraudulent claim for purposes of the federal civil False Claims Act. Actions under the federal civil False Claims Act may be brought by the government or as a *qui tam* action by a private individual in the name of the government. These individuals, sometimes known as "relators" or, more commonly, as "whistleblowers," may share in any amounts paid by the entity to the government in fines or settlement. Many pharmaceutical and medical device manufacturers have been investigated and have reached substantial financial settlements with the federal government under the federal civil False Claims Act for a variety of alleged improper activities, including causing false claims to be submitted as a result of the marketing of their products for unapproved and thus non-reimbursable uses and interactions with prescribers and other customers, including those that may have affected their billing or coding practices and submission of claims to the federal government. Federal civil False Claims Act liability is potentially significant in the healthcare industry because the statute provides for treble damages and mandatory monetary penalties for each false or fraudulent claim or statement. Because of the potential for large monetary exposure, healthcare and medical device companies often resolve allegations without admissions of liability for significant and material amounts to avoid the uncertainty of treble damages and per claim penalties that may be awarded in litigation proceedings;

- HIPAA, which imposes criminal and civil liability for, among other actions, knowingly and willfully executing, or attempting to execute, a scheme to defraud any healthcare benefit program, including private third-party payors, or knowingly and willfully falsifying, concealing or covering up a material fact or making a materially false, fictitious or fraudulent statement or representation, or making or using any false writing or document knowing the same to contain any materially false, fictitious or fraudulent statement or entry in connection with the delivery of or payment for healthcare benefits, items or services.

- HIPAA, as amended by HITECH Act, and their implementing regulations, also impose obligations, including mandatory contractual terms, on covered entities subject to the rule, such as health plans, healthcare clearinghouses and certain healthcare providers, as well as their business associates that perform certain services for them or on their behalf involving the use or disclosure of individually identifiable

health information with respect to safeguarding the privacy, security and transmission of individually identifiable health information. We believe we are not a covered entity for purposes of HIPAA, and we believe that we generally do not conduct our business in a manner that would cause us to be a business associate under HIPAA;

- the federal Physician Payment Sunshine Act, also known as Open Payments, which requires manufacturers of drugs, devices, biologics and medical supplies for which payment is available under Medicare, Medicaid or the Children's Health Insurance Program to report annually, with certain exceptions to the Centers for Medicare & Medicaid Services ("CMS"), information related to payments or other "transfers of value" made to physicians and teaching hospitals, and requires applicable manufacturers and group purchasing organizations to report annually to CMS ownership and investment interests held by physicians and their immediate family members. Applicable manufacturers are also required to report information regarding payments and transfers of value provided to physician assistants, nurse practitioners, clinical nurse specialists, certified nurse anesthetists and certified nurse-midwives; and

- analogous state and foreign law equivalents of each of the above federal laws, such as anti-kickback and false claims laws which may apply to items or services reimbursed by any third-party payor, including commercial insurers; state laws that require medical device companies to comply with the industry's voluntary compliance guidelines and the applicable compliance guidance promulgated by the federal government or otherwise restrict payments that may be made to healthcare providers and other potential referral sources; state beneficiary inducement laws, which are state laws that require medical device manufacturers to report information related to payments and other transfers of value to physicians and other healthcare providers or marketing expenditures; and state and foreign laws governing the privacy and security of health information in certain circumstances, many of which differ from each other in significant ways and may not have the same effect, thus complicating compliance efforts.

State and federal regulatory and enforcement agencies continue to actively investigate violations of healthcare laws and regulations, and the U.S. Congress continues to strengthen the arsenal of enforcement tools. The Bipartisan Budget Act of 2018 ("BBA") increased the criminal and civil penalties that can be imposed for violating certain federal health care laws, including the Anti-Kickback Statute. Enforcement agencies also continue to pursue novel theories of liability under these laws. In particular, government agencies recently have increased regulatory scrutiny and enforcement activity with respect to manufacturer reimbursement support activities and patient support programs, including bringing criminal charges or civil enforcement actions under the Anti-Kickback Statute, federal civil False Claims Act and HIPAA's healthcare fraud and privacy provisions.

Because of the breadth of these laws and the narrowness of the statutory exceptions and regulatory safe harbors available under such laws, it is possible that our intended marketing of our Ionojet device, if approved, and financial arrangements with physicians, other healthcare providers, and other customers, could be subject to challenge under one or more such laws. The Anti-Kickback Statute includes, among others, space and equipment rental safe harbors. These safe harbors require, among other things, that the aggregate payment between the parties is set in advance and consistent with fair market value. If our Ionojet device, or any components thereof, are provided for free, and no payment is made for storage thereof at customers' facilities, these arrangements will likely not satisfy these or other safe harbors or statutory exceptions. Therefore, if our intended arrangements were to be investigated in the future, they would be subject to a facts and circumstances analysis to determine whether they include prohibited remuneration under the Anti-Kickback Statute. If an arrangement were deemed to violate the Anti-Kickback Statute, it may also subject us to violations under other fraud and abuse laws such as the federal civil False Claims Act and civil monetary penalties laws. Moreover, such arrangements could be found to violate comparable state fraud and abuse laws.

Achieving and sustaining compliance with applicable federal and state anti-fraud and abuse laws may prove costly. If we or our employees are found to have violated any of the above laws we may be subjected to substantial criminal, civil and administrative penalties, including imprisonment, exclusion from participation in federal healthcare programs, such as Medicare and Medicaid, and significant fines, monetary penalties, forfeiture, disgorgement and damages, contractual damages, reputational harm, administrative burdens, diminished profits and future earnings and the curtailment or restructuring of our operations, any of which could adversely affect our

ability to operate our business and our financial results. Any action or investigation against us for the violation of these healthcare fraud and abuse laws, even if successfully defended, could result in significant legal expenses and could divert our management's attention from the operation of our business. Companies settling federal civil False Claims Act, Anti-Kickback Statute

or civil monetary penalties law cases also may be required to enter into a Corporate Integrity Agreement with the OIG in order to avoid exclusion from participation (i.e., loss of coverage for their products) in federal healthcare programs such as Medicare and Medicaid. Corporate Integrity Agreements typically impose substantial costs on companies to ensure compliance. Defending against any such actions can be costly, time-consuming and may require significant personnel resources, and may have a material adverse effect on our business, financial condition and results of operations.

Our ability to generate revenue will be diminished if we are unable to obtain adequate prices for the therapy using our Ionojet device or patients are unable to obtain adequate levels of reimbursement for the therapy.

Our ability to commercialize our Ionojet device, alone or with collaborators, will depend in part on the extent to which reimbursement will be available from:

- government and health administration authorities;
- private health maintenance organizations and health insurers; and
- other healthcare payers.

Patients generally expect that medical therapies they receive, such as the therapy using our Ionojet technology if it is approved by the FDA, are covered and reimbursed by third-party payors for all or part of the costs and fees associated with the therapy. If such therapies are not covered and reimbursed then patients may be responsible for the entire cost of the therapy, which can be substantial. Therefore, health care providers generally do not prescribe therapies or products that are not covered and reimbursed by third-party payors in order to avoid subjecting their patients to such financial liability. The existence of adequate coverage and reimbursement for the therapies or products by government and private insurance plans is central to the acceptance of our Ionojet device and any future products we may commercialize in the future.

During the past several years, third-party payors have undertaken cost-containment initiatives including different payment methods, monitoring health care expenditures, and anti-fraud initiatives. For some governmental programs, such as Medicaid, coverage and reimbursement differ from state to state, and some state Medicaid programs may not pay an adequate amount for the therapy from our Ionojet device, if approved by the FDA, or any of our other future products or therapies, or may make no payment at all. Furthermore, the health care industry in the United States has experienced a trend toward cost containment as government and private insurers seek to control health care costs by imposing lower payment rates and negotiating reduced contract rates with service providers. Therefore, we cannot be certain that the therapy from our Ionojet device, or any of our future products or therapies, will be reimbursed at a level that is sufficient to meet our costs.

Obtaining coverage and reimbursement approval of a therapy or product from a government or other third-party payor is a time-consuming and costly process that could require us to provide to the payor supporting scientific, clinical and cost-effectiveness data for the use of our products. Even if we obtain coverage for a given therapy or product, the resulting reimbursement payment rates might not be adequate for us to achieve or sustain profitability or may require co-payments that patients find unacceptably high. Patients are unlikely to use our products or any future product candidates unless coverage is provided and reimbursement is adequate to cover a significant portion of the cost of the therapy or any future product candidates.

We intend to seek approval to market Ionojet, as well as future product candidates in both the United States and in selected foreign jurisdictions. If we obtain approval in one or more foreign jurisdictions for our products or any future product candidates, we will be subject to rules and regulations in those jurisdictions. In some foreign countries, particularly those in the European Union, the pricing of medicinal products and drugs is subject to governmental control. In these countries, pricing negotiations with governmental authorities can take considerable time after obtaining marketing approval of a product candidate. In addition, market acceptance and sales of product candidates will depend significantly on the availability of adequate coverage and reimbursement from third-party payors for product candidates and may be affected by existing and future health care reform measures.

Third-party payors, whether domestic or foreign, or governmental or commercial, are developing increasingly sophisticated methods of controlling healthcare costs. In both the United States and certain foreign jurisdictions,

there have been a number of legislative and regulatory changes to the health care system that could impact our ability to earn profits on the therapy from our Ionojet device, if approved, or any future product candidates. In particular,

in the ACA, among other things, revised the methodology by which rebates owed by manufacturers to the state and federal government for covered outpatient drugs, including product candidates, under the Medicaid Drug Rebate Program are calculated, increased the minimum Medicaid rebates owed by most manufacturers under the Medicaid Drug Rebate Program, extended the Medicaid Drug Rebate program to utilization of prescriptions of individuals enrolled in Medicaid managed care organizations, subjected manufacturers to new annual fees and taxes for certain branded prescription drugs, and provided incentives to programs that increase the federal government's comparative effectiveness research.

There have been, and likely will continue to be, legislative and regulatory proposals at the foreign, federal and state levels directed at broadening the availability of healthcare and containing or lowering the cost of healthcare. We cannot predict the initiatives that may be adopted in the future, particularly in light of the new presidential administration in the United States, and any proposed changes to healthcare laws that could potentially affect our clinical development or regulatory strategy. The continuing efforts of the government, insurance companies, managed care organizations and other payors of healthcare services to contain or reduce costs of healthcare and/or impose price controls may adversely affect:

- the demand for our products or future product candidates, if we obtain regulatory approval;
- our ability to set a price that we believe is fair for our products;
- our ability to generate revenue and achieve or maintain profitability;
- the level of taxes that we are required to pay; and
- the availability of capital.

Any reduction in reimbursement from Medicare, Medicaid or other government programs may result in a similar reduction in payments from private payors, which may adversely affect our future profitability.

The size and expected growth of our available market has not been established with precision and may be smaller than we estimate.

Our data on the available market for our current products and future products is based on a number of internal and third-party research reports, estimates and assumptions. While we believe that such research, our assumptions and the data underlying our estimates are reasonable, these assumptions and estimates may not be correct. In addition, the statements in this prospectus relating to, among other things, the expected growth in the market for our therapy are based on a number of internal and third-party data, estimates and assumptions, and may prove to be inaccurate. If the actual number of consumers who would benefit from our products, the price at which we can sell our therapy or the available market for our products is smaller than we estimate, it could have a material adverse effect on our business, financial condition and results of operations.

Risks Related to Our Intellectual Property

Our failure to maintain patents, licensing agreements and other intellectual property would materially impact our ability to effectuate our business plan.

In order for our business to be viable and to compete effectively, we need to develop and/or maintain, and we will heavily rely on, a strong position with respect to our product candidate and intellectual property. Our ability to own, license, enforce and maintain patents, maintain trade secret protection and operate without infringing the proprietary rights of others is important to our commercializing our therapy. Without ownership of or an appropriate license to use any intellectual property rights comprised in our technologies, our ability to exploit those technologies could be prevented or restricted and the sales of our therapy within the United States or elsewhere could be prohibited. Therefore, any disruption in access to our technologies could substantially delay the development and sale of our therapy.

The patent positions of biotechnology and medical device companies are frequently uncertain and involve complex legal and factual questions, and we may not be able to adequately expand our patent and intellectual

property protections. In addition, the coverage claimed in a patent application can be significantly reduced before the patent is issued. Consequently, our patents, patent applications and other intellectual property rights may not provide protection

against competitive technologies or may be held invalid if challenged or could be circumvented. Our competitors may also independently develop technologies or products similar to ours or design around or otherwise circumvent patents owned, issued to, or licensed by, us. In addition, the laws of some foreign countries may not protect our proprietary rights to the same extent as U.S. law.

Furthermore, our competitors may independently develop substantially equivalent proprietary information and techniques, reverse engineer, or otherwise gain access to our proprietary technology. We may be unable to meaningfully protect our rights in trade secrets, technical know-how and other non- patented technology, which could seriously impair our business.

Costly litigation may be necessary to protect our intellectual property rights and we may be subject to claims alleging the violation of the intellectual property rights of others.

We may face significant expense and liability as a result of litigation or other proceedings relating to patents and intellectual property rights of others. For example, in the event that another party has also filed a U.S. patent application or been issued a U.S. patent relating to an invention or technology claimed by us in pending applications, we may be required to participate in an interference or derivation proceeding declared by the United States Patent and Trademark Office to determine priority of invention, which could result in substantial uncertainties and costs for us, even if the eventual outcome was favorable to us. We, or our licensors, also could be required to participate in interference proceedings involving issued patents and pending applications of another entity. An adverse outcome in an interference or derivation proceeding could require us to cease using the technology, substantially modify it or to license rights from prevailing third parties.

The cost to us of any patent litigation or other proceeding relating to our licensed patents or patent applications, even if resolved in our favor, could be substantial, especially given our early stage of development. Our ability to enforce our patent protection could be limited by our financial resources and may be subject to lengthy delays. A third party may claim that we are using inventions claimed by their patents and may go to court to stop us from engaging in our normal operations and activities, such as research, development and the sale of any future products. Such lawsuits are expensive and would consume significant time and other resources. There is a risk that a court will decide that we are infringing the third party's patents and will order us to stop the activities claimed by such patents. In addition, there is a risk that a court will order us to pay the other party damages for having infringed their patents.

Moreover, there is no guarantee that any prevailing patent owner would offer us a license so that we could continue to engage in activities claimed by the patent, or that such a license, if made available to us, could be acquired on commercially acceptable terms. In addition, third parties may, in the future, assert other intellectual property infringement claims against us with respect to our services, technologies or other matters.

International patent protection is particularly uncertain, and if we are involved in opposition proceedings in foreign countries, we may have to expend substantial sums and management resources.

Patent and other intellectual property law outside the United States can be even more uncertain than in the United States and is continually undergoing review and revisions in many countries. Further, the laws of some foreign countries may not protect our intellectual property rights to the same extent as the laws of the United States. For example, certain countries do not grant patent claims that are directed to business methods and processes. In addition, we may have to participate in opposition proceedings to determine the validity of our foreign patents or our competitors' foreign patents, which could result in substantial costs and diversion of our efforts.

Confidentiality agreements with employees and others may not adequately prevent disclosure of trade secrets and other proprietary information.

We rely substantially upon proprietary materials, information, trade secrets and know-how to conduct our research and development activities. We take steps to protect our proprietary rights and information, including the use of confidentiality and other agreements with our employees and consultants and with academic and commercial relationships. However, these steps may be inadequate, agreements may be violated, or there may be no adequate remedy available for a violation of an agreement. We cannot assure you that our proprietary

information will not be disclosed or that we can meaningfully protect our trade secrets. Our competitors may independently develop substantially equivalent proprietary information or may otherwise gain access to our trade secrets, which could adversely affect our ability to compete in the market.

Risks Related to Our Industry

We intend to utilize third-party service provides for the distribution, marketing, and support capabilities related to our technology, although we do not currently have any such agreements in place, which could delay or limit our ability to generate revenue.

We plan to utilize third-party service providers for the distribution and marketing and support of Ionojet, if approved. Upon approval, we intend to collaborate with third parties in addition to building our own commercial infrastructure. Reliance on third-party service providers may prevent our direct control of key aspects of those critical functions including regulatory compliance, import and export operations, supply chain security, warehousing and inventory management, distribution, contract administration, invoicing, sales deductions administration, accounts receivable management and call center management. Any future distribution partners may hold significant control over important aspects of the commercialization of our products, including market identification, regulatory compliance, marketing methods, pricing, composition of marketing team and promotional activities.

We may not be able to control the amount and timing of resources that any future third-party distribution partners may devote to our products or prevent any third-party from pursuing the development of alternative technologies or products that compete with our products, except to the extent our contractual arrangements protect us against such activities. Also, we may not be able to prevent any other third-party from withdrawing its support of our products.

If third-party service providers fail to comply with applicable laws and regulations, fail to meet expected deadlines, encounter natural or other disasters at their facilities or otherwise fail to perform their services to us in a satisfactory or predicted manner, or at all, our ability to deliver product to meet commercial demand could be significantly impaired. In addition, we may use third parties to perform various other services for us relating to sample accountability and regulatory monitoring, including adverse event reporting, safety database management and other product maintenance services. If the quality or accuracy of the data maintained by these service providers is insufficient, our ability to continue to market our products could be jeopardized or we could be subject to regulatory sanctions, and any indemnity we may receive from such third-party service providers could be limited by such provider's ability to pay and otherwise might not be sufficient to cover all losses we may experience.

Our employees, independent contractors, consultants, commercial partners and vendors may engage in misconduct or other improper activities, including noncompliance with regulatory standards and requirements.

We are exposed to the risk of employee fraud or other illegal activity by our employees, independent contractors, consultants, commercial partners and vendors. Misconduct by these parties could include intentional, reckless and/or negligent conduct that fails to: (i) comply with the requirements of the FDA and other similar foreign regulatory bodies; (ii) provide true, complete and accurate information to the FDA and other similar foreign regulatory bodies; (iii) comply with manufacturing standards we have established; (iv) comply with healthcare fraud and abuse laws in the United States and similar foreign fraudulent misconduct laws; or (v) report financial information or data accurately or to disclose unauthorized activities to us. Any such misconduct or noncompliance could negatively affect the FDA's review of our regulatory submission, including delaying approval or disallowance of certain information to support the submission, and/or delay a federal or state healthcare programs or a commercial insurer's determination regarding the availability of future reimbursement for product candidates. If we obtain FDA approval of any product candidates and begin commercializing those products in the United States, our potential exposure under such laws will increase significantly, and our costs associated with compliance with such laws are also likely to increase. These laws may impact, among other things, our current activities with principal investigators and research patients, as well as proposed and future sales, marketing and education programs. In particular, the promotion, sales and marketing of healthcare items and services, as well as certain business arrangements in the healthcare industry, are subject to extensive laws designed to prevent fraud, kickbacks, self-dealing and other abusive practices. These laws and regulations may

restrict or prohibit a wide range of pricing, discounting, marketing and promotion, structuring and commission(s), certain customer incentive programs and other business arrangements generally. Activities subject to these laws also involve the improper use of information obtained in the course of patient recruitment for clinical trials.

It is not always possible to identify and deter employee misconduct, and the precautions we take to detect and prevent inappropriate conduct may not be effective in controlling unknown or unmanaged risks or losses or in protecting us from governmental investigations or other actions or lawsuits stemming from a failure to be in compliance with such laws or regulations. Efforts to ensure that our business arrangements will comply with applicable healthcare

laws may involve substantial costs. It is possible that governmental and enforcement authorities will conclude that our business practices may not comply with current or future statutes, regulations or case law interpreting applicable fraud and abuse or other healthcare laws and regulations. If any such actions are instituted against us, and we are not successful in defending ourselves or asserting our rights, those actions could have a significant impact on our business, including the imposition of civil, criminal and administrative penalties, damages, disgorgement, monetary fines, possible exclusion from participation in Medicare, Medicaid and other federal healthcare programs, contractual damages, reputational harm, diminished profits and future earnings, and curtailment of our operations, any of which could adversely affect our ability to operate our business and our results of operations. In addition, the approval and commercialization of any product candidates outside the United States will also likely subject us to foreign equivalents of the healthcare laws mentioned above, among other foreign laws.

We intend to establish a team to launch the Ionojet, if approved, and to launch or market any of our future product candidates. If we are not successful in doing so, our ability to generate revenue and profits will be limited.

Although certain of our employees have commercialization experience, as a company we do not have an internal marketing team and we currently have only limited commercial capabilities. We intend to establish an internal specialty marketing team for the promotion of the use of Ionojet, if approved, and to launch or market any future product candidates. Establishing a marketing team is a difficult undertaking. Experienced and competent representatives and managers must be recruited, hired, trained, assigned appropriate territories, managed and compensated in such a way that they can achieve success in marketing products to a sophisticated audience of healthcare professionals who frequently have little or no time to spend with sales personnel. In addition, our prospective marketing team will compete against the marketing teams of other biotechnology companies, who will be promoting competing products. If we fail to hire and field a high-quality marketing team, we may be unable to generate expected revenues and profits.

In addition, there are significant expenses and risks involved with establishing our own sales and marketing capabilities, including our ability to hire, retain and appropriately incentivize qualified individuals, generate sufficient sales leads, provide adequate training to sales and marketing personnel, and effectively manage a geographically dispersed sales and marketing team. Any failure or delay in the development of our internal sales, marketing and distribution capabilities could delay any product launch, which would adversely impact the commercialization of our product candidates. For example, if we recruit any sales representatives or establish marketing capabilities prior to commercial launch and the commercial launch is delayed or does not occur for any reason, we would have prematurely or unnecessarily incurred these commercialization expenses. This may be costly, and our investment would be lost if we cannot retain or reposition our sales and marketing personnel.

In addition to our own internal marketing team, we may choose to collaborate with third parties that have direct marketing teams and established distribution systems, either to augment our own marketing team and distribution systems or in lieu of our own marketing team and distribution systems. If we are unable to enter into such arrangements on acceptable terms or at all, we may not be able to successfully commercialize our product candidates. To the extent we commercialize our product candidates by entering into agreements with third-party collaborators, we may have limited or no control over the marketing and distribution activities of these third parties, in which case our future revenues would depend heavily on the success of the efforts of these third parties. If we are not successful in commercializing Ionojet or any future product candidates, either on our own or through collaborations with one or more third parties, our future product revenue will suffer and we could incur significant additional losses.

We may rely on collaborations and license arrangements with third parties to commercialize, market and promote our marketed products which may limit our ability to generate revenue and adversely affect our profitability.

We may rely on collaboration and other agreements with third-parties with respect to our product candidates and future marketed products. Any future collaborations or license arrangements may not be successful. We may license our products, in which case we would depend upon collaborations with third-parties to develop these product candidates in the licensed territories and we would depend substantially upon third-parties to

commercialize these product candidates. If we are unable to maintain current collaborations or enter into additional collaborations with established biotechnology or biotechnology service companies to provide the services we need, we may not be able to successfully commercialize our products.

Our reliance on vendors in foreign countries, including China, subjects us to risks and uncertainties relating to foreign laws and regulations and changes in relations between the United States and such foreign countries.

Certain electronic micro-components for our Ionojet devices are sourced from China and Taiwan, and we may in the future source components from vendors located in other foreign countries. Under its current leadership, the government of China has been pursuing economic reform policies, including by encouraging foreign trade and investment. However, there is no assurance that the Chinese government will continue to pursue such policies, that such policies will be successfully implemented, that such policies will not be significantly altered, or that such policies will be beneficial to our partnerships in China. China's system of laws, as well as the laws of other foreign countries where we may source components, can be unpredictable, especially with respect to foreign investment and foreign trade. The United States government has called for substantial changes to foreign trade policy with China and has raised tariffs on several Chinese goods. China has retaliated with increased tariffs on United States goods. Any further changes in United States trade policy could trigger retaliatory actions by affected countries, including China, resulting in trade wars. Changes to Chinese regulations affecting the manufacture of electronic components may also be unpredictable. Changes to regulations in any other country where we may source components in the future may also be unpredictable and could affect the manufacture of electronic components in such countries and our ability to purchase components on a cost-effective basis. Any regulatory changes and changes in United States and China relations, or changes in relations with the United States any other country where we may source components in the future, may have a material adverse effect on our vendors in China and other such countries which could materially harm our business and financial condition.

International trade disputes could result in tariffs and other protectionist measures that could have a material adverse effect on our business, financial condition and results of operations.

Tariffs could increase the cost of our products and raw materials that go into making them. These increased costs could adversely impact the gross margin that we earn on our products. Tariffs could also make our products more expensive for customers, which could make our products less competitive and reduce customer demand. Countries may also adopt other protectionist measures that could limit our ability to offer our products. Political uncertainty surrounding international trade disputes and protectionist measures could also have a negative effect on consumer confidence and spending, which could have a material adverse effect on our business, financial condition and results of operations.

The ongoing COVID-19 global health crisis or any other health crisis may impact our planned operations, including our pivotal clinical trial.

In January 2020, the World Health Organization declared a global pandemic for the novel strain of coronavirus, COVID-19. Since then, the COVID-19 coronavirus has spread to multiple countries, including throughout the United States. We may experience disruptions as a result of the pandemic if the pandemic continues or increases in severity or any other pandemic, including:

- unwillingness of potential study participants to enroll in our clinical trial and/or visit healthcare facilities;
- postponement of enrollment in our clinical trial;
- postponement of the initiation of our clinical trial;
- diversion of healthcare resources away from the conduct of clinical trials, including the diversion of hospitals serving as our clinical trial sites and hospital staff supporting the conduct of our clinical trial;
- interruption of key clinical trial activities, such as clinical site visits by study participants and clinical trial site monitoring, due to limitations on travel imposed or recommended by federal or state governments, employers and others;

- limitations in employee resources that would otherwise be focused on the conduct of our clinical trial, including because of sickness of employees or their families or the desire of employees to avoid contact with large groups of people;
- delays in receiving approval from local regulatory authorities to initiate our clinical trial;
- delays in clinical sites receiving the supplies and materials needed to conduct our clinical trial;

- interruption in global shipping that may affect the manufacture and transport of clinical trial materials necessary for our clinical trial;
- changes in local regulations as part of a response to the COVID-19 coronavirus outbreak which may require us to change the ways in which our clinical trial is conducted, which may result in unexpected costs, or to discontinue the clinical trial altogether;
- delays in necessary interactions with local regulators, ethics committees and other important agencies and contractors due to limitations in employee resources or forced furlough of government employees; and
- delay in the timing of interactions with the FDA due to absenteeism by federal employees or by the diversion of their efforts and attention to approval of other therapeutics or other activities related to COVID-19.

Our business and the business of the suppliers of our clinical product candidate is expected to continue to be materially and adversely affected by the pandemic. While we are currently not experiencing material delays, such events could result in the delay or complete or partial closure of clinical trial sites or one or more manufacturing facilities which could impact our supply of our clinical product candidate. In addition, it could impact economies and financial markets, resulting in an economic downturn that could impact our ability to raise capital or slow down potential partnering relationships.

The effects of the governmental orders may negatively impact productivity, disrupt our business and delay our clinical trial program and timelines, the magnitude of which will depend, in part, on the length and severity of the restrictions and other limitations on our ability to conduct our business in the ordinary course.

In addition, the COVID-19 outbreak could disrupt our operations due to absenteeism by infected or ill members of management or other employees, or absenteeism by members of management and other employees who elect not to come to work due to the illness affecting others in our office, or due to quarantines. The COVID-19 illness could also impact members of our Board of Directors resulting in absenteeism from meetings of the directors or committees of directors, making it more difficult to convene the quorums of the full Board of Directors or its committees needed to conduct meetings for the management of our affairs.

The global outbreak of the virus continues to rapidly evolve. The extent to which the virus may continue to impact our business and clinical trials will depend on future developments, which are highly uncertain and cannot be predicted with confidence, such as the ultimate geographic spread of the disease, the duration of the outbreak, travel restrictions and social distancing in the United States, business closures or business disruptions and the effectiveness of actions taken in the United States and other countries to contain and treat the disease. We do not yet know the full extent of potential delays or impacts on our business, operations, or the global economy as a whole. While the spread of COVID-19 may eventually be contained or mitigated, there is no guarantee that a future outbreak of this or any other widespread epidemics will not occur, or that the global economy will recover, either of which could seriously harm our business.

While we are currently not experiencing any delays, we may in the future experience delays. These delays may result in the need for trials to be redesigned and may impact whether they will be completed on schedule, if at all. Clinical trials can be delayed for a variety of reasons, including the COVID-19 pandemic, delays in obtaining regulatory approval to commence a clinical trial, in securing clinical trial agreements with prospective sites with acceptable terms, in obtaining institutional review board approval to conduct a clinical trial at a prospective site, in recruiting patients to participate in a clinical trial or in obtaining sufficient supplies of clinical trial materials. Manufacturing considerations for clinical development candidates may include an expected several month lead time following a decision to commence any clinical trial(s) and capacity considerations of our third-party contract manufacturers to provide clinical supply of our product candidates could cause delays in clinical trials. Furthermore, due to the COVID-19 pandemic, many manufacturers have been prioritizing the manufacture of COVD-19 related products, increasing the manufacturing lead times for non-COVID-19 related products. Many factors affect patient enrollment, including the size of the patient population, the proximity of patients to clinical sites, the eligibility criteria for the clinical trial, competing clinical trials and new drugs approved for the conditions we are investigating. Clinical investigators will need to decide whether to offer their patients enrollment in clinical trials of our product candidates versus treating these patients with commercially available

drugs that have established safety and efficacy profiles. Any delays in completing our clinical trials will increase our costs, slow down our product development and timeliness and approval process and delay our ability to generate revenue.

We will be subject to consumer protection laws that regulate our marketing practices and prohibit unfair or deceptive acts or practices. Our actual or perceived failure to comply with such obligations could harm our business, and changes in such regulations or laws could require us to modify our products or marketing or advertising efforts.

In connection with the marketing or advertisement of our therapy, we could be the target of claims relating to false, misleading, deceptive or otherwise noncompliant advertising or marketing practices, including under the auspices of the FTC and state consumer protection statutes. If we rely on third parties to provide any marketing and advertising of our products, we could be liable for, or face reputational harm as a result of, their marketing practices if, for example, they fail to comply with applicable statutory and regulatory requirements.

If we are found to have breached any consumer protection, advertising, unfair competition or other laws or regulations, we may be subject to enforcement actions that require us to change our marketing and business practices in a manner that may negatively impact us. This could also result in litigation, fines, penalties and adverse publicity that could cause reputational harm and loss of customer trust, which could have a material adverse effect on our business, financial condition and results of operations.

Technological change may adversely affect commercialization of our products and may cause our products to become obsolete.

The medical device market is characterized by extensive research and development and rapid technological change. Technological progress or new developments in our industry could adversely affect sales of our products. Our products could be rendered obsolete because of future innovations by our competitors or others in the treatment of vascular diseases, which would have a material adverse effect on our business, financial condition and results of operations.

Consolidation in the medical device industry could have an adverse effect on our revenue and results of operations.

Many medical device companies are consolidating to create new companies with greater market power. As the medical device industry consolidates, competition to provide goods and services to industry participants will become more intense. These industry participants may try to use their market power to negotiate price concessions or reductions for our products. If we reduce our prices because of consolidation in the healthcare industry, our revenue would decrease, which could have a material adverse effect on our business, financial condition and results of operations.

Risks Related to Ownership of Our Common Stock

An active public trading market for our common stock may not develop or be sustained.

Prior to this offering, there has been no public market or active private market for trading shares of our common stock. We will list our common stock on NYSE American, in connection with this offering; however, an active trading market may not develop following the completion of this offering or, if developed, may not be sustained. The lack of an active market may impair your ability to sell your shares at the time you wish to sell them or at a price that you consider reasonable. The lack of an active market may also reduce the price of shares of common stock. An inactive market may impair our ability to raise capital by selling shares and our ability to use our capital stock to acquire other companies or technologies. We cannot predict the prices at which our common stock will trade. The initial public offering price of our common stock may not bear any relationship to the market price at which our common stock will trade after this offering.

We cannot be assured that we will be able to maintain our listing on NYSE American.

We anticipate that our securities will be listed on NYSE American, a national securities exchange, upon consummation of this offering. We cannot be assured that we will continue to comply with the rules, regulations or requirements governing the listing of our common stock on NYSE American or that our securities will continue to be listed on NYSE American in the future. If NYSE American should determine after initial listing

that we fail to meet NYSE American requirements, we may be subject to a delisting action by NYSE American. Nonetheless, this offering is contingent upon our obtaining NYSE American listing and, in the event such listing is not approved, this offering will be terminated.

Even if we complete this offering, if NYSE American delists our securities from trading on its exchange at some future date, we could face significant material adverse consequences, including:

- a limited availability of market quotations for our securities;
- reduced liquidity with respect to our securities;
- a determination that our common stock is a "penny stock" which will require brokers trading in our ordinary shares to adhere to more stringent rules, possibly resulting in a reduced level of trading activity in the secondary trading market for our ordinary shares;
- a limited amount of news and analyst coverage for our company; and
- a decreased ability to issue additional securities or obtain additional financing in the future.

Our stock price may be extremely volatile, and your investment in our common stock could suffer a decline in value.

You should consider an investment in our common stock risky and invest only if you can withstand a significant loss and wide fluctuations in the market value of your investment. Investors who purchase our common stock may not be able to sell their shares at or above the purchase price. Security market prices for securities of biotechnology companies have been highly volatile. In addition, the volatility of biotechnology company stocks often does not correlate to the operating performance of the companies represented by such stocks. Some of the factors that may cause the market price of our common stock to fluctuate include:

- adverse results or delays in our clinical trials;
- the timing or delay of achievement of our clinical, regulatory, partnering and other milestones, such as the commencement of clinical development, the completion of a clinical trial, the receipt of regulatory approval or the establishment or termination of a commercial partnership for one or more of our product candidates;
- announcement of FDA approval or non-approval of our product candidates or delays in the FDA review process;
- actions taken by regulatory agencies with respect to our product candidates, our clinical trials or our sales and marketing activities;
- the commercial success of any product approved by the FDA or its foreign counterparts;
- regulatory developments in the United States and foreign countries;
- changes in the structure of healthcare payment systems;
- any intellectual property infringement lawsuit involving us;
- announcements of technological innovations or new products by us or our competitors;
- market conditions for the biotechnology or pharmaceutical industries in general;
- changes in financial estimates or recommendations by securities analysts;
- sales of large blocks of our common stock;
- sales of our common stock by our executive officers, directors and significant stockholders;
- direct sales of our common stock through financing arrangements;
- restatements of our financial results and/or material weaknesses in our internal controls;
- the loss of any of our key scientific or management personnel; and
- announcements regarding the ongoing exploration of the strategic options available to us.

Stock markets in general, and the markets for biotechnology stocks in particular, have experienced extreme volatility and price and volume fluctuations that have often been unrelated or disproportionate to the operating performance or prospects of particular companies. These broad market and industry factors may seriously harm the market price of our common stock, regardless of our operating performance. In the past, class action litigation has often been instituted against companies whose securities have experienced periods of volatility in market price. Any such litigation brought against us could result in substantial costs, which would hurt our financial condition and results of operations, divert management's attention and resources, and possibly delay our clinical trials or commercialization efforts.

Stock prices in recent initial public offerings have been volatile.

Certain recent initial public offerings of companies with public floats comparable to our anticipated public float have experienced instances of extreme price run-ups followed by rapid price declines and stock volatility seemingly unrelated to the underlying performance of the respective company. Our common stock may experience similar rapid and substantial price volatility following our initial public offering, and any such volatility, including any stock-run up, may be unrelated to our actual or expected operating performance and financial condition or prospects, which could make it difficult for prospective investors to assess the rapidly changing value of our stock. Although the specific cause of such volatility is unclear, our anticipated public float may amplify the impact the actions taken by a few stockholders have on the price of our shares, which may cause our share price to deviate, potentially significantly, from a price that better reflects the underlying performance of our business. Should our securities experience run-ups and declines that are seemingly unrelated to our actual or expected operating performance and financial condition or prospects, prospective investors may have difficulty assessing the rapidly changing value of our securities. In addition, investors of our securities may experience losses, which may be material, if the price of our common stock declines after this offering or if such investors purchase shares of our common stock prior to any price decline.

If financial or industry analysts do not publish research or reports about our business or if they issue inaccurate or unfavorable commentary or downgrade our common stock, our stock price and trading volume could decline.

The trading market for our common stock will be influenced by the research and reports that industry or financial analysts publish about us or our business. We do not control these analysts or the content and opinions included in their reports. As a new public company, we may be slow to attract research coverage, and the analysts who publish information about our common stock will have had relatively little experience with our company, which could affect their ability to accurately forecast our results and make it more likely that we fail to meet their estimates. In the event we obtain industry or financial analyst coverage, if any of the analysts who cover us issue an inaccurate or unfavorable opinion regarding our stock price, our stock price would likely decline. In addition, the stock prices of many companies in the biotechnology industry have declined significantly after those companies have failed to meet, or often times failed to exceed, the financial guidance publicly announced by the companies or the expectations of analysts. If our financial results fail to meet, or significantly exceed, our announced guidance or the expectations of analysts or public investors, analysts could downgrade our common stock or publish unfavorable research about us. If one or more of these analysts cease coverage of our company or fail to publish reports on us regularly, we could lose visibility in the financial markets, which in turn could cause our stock price or trading volume to decline.

After this offering, our officers, directors and principal stockholders will continue to exercise significant control over our company, and may be able to control our management and operations, acting in their best interests and not necessarily those of other stockholders.

When this offering is completed, our executive officers, directors and principal stockholders who beneficially own more than 5% or more of our outstanding common stock before this offering will in the aggregate, beneficially own shares representing approximately 46% of our outstanding capital stock immediately after this offering. When this offering is completed, Michael Preston, our Chief Executive Officer, will beneficially own 25.45% of our outstanding capital stock immediately after this offering. As a result, Michael Preston together with these other stockholders, acting together, may be able to significantly influence any matters requiring approval by our stockholders, including the election of directors, the approval of mergers or other business

combination transactions. The interests of this group of stockholders may not always coincide with our interests or the interests of other stockholders. The significant concentration of stock ownership may adversely affect the trading price of our common stock due to the perception that conflicts of interest may exist or arise. Therefore, you should not invest in reliance on your ability to have any control over our company.

Future sales of common stock by our officers and directors and principal stockholders or others of our common stock, or the perception that such sales may occur, could depress the market price of our common stock.

Sales of a substantial number of shares of our common stock after this offering, particularly sales by our directors, executive officers and principal stockholders could adversely affect the market price of our common stock and may make it more difficult to sell common stock at a time and price that you deem appropriate. Based on the total number of outstanding shares of our common stock as of March 13, 2023, upon completion of this offering and the issuance of 775,900 shares (the "Note Shares") of common stock upon conversion of our outstanding Private Placement Notes (as described under "*Description of Securities"*) (certain of the Note Shares are being registered in the Resale Prospectus), we will have an aggregate of 38,875,509 shares of common stock outstanding, assuming no exercise of our outstanding warrants or stock options, and assuming the underwriters do not exercise their option to purchase additional shares.

All of the shares of common stock sold in this offering and the shares of our common stock offered by the selling stockholders in the resale offering will be freely tradable without restrictions or further registration under the Securities Act of 1933, as amended (the "Securities Act"), except for any shares held by our affiliates as defined in Rule 144 under the Securities Act.

A substantial amount of our outstanding shares of common stock is currently restricted from resale as a result of market standoff and "lock-up" agreements, as more fully described in "Shares Eligible for Future Sale." These shares will become available to be sold [181] days after the date of this prospectus. Shares held by directors, executive officers and other affiliates will be subject to volume limitations under Rule 144 under the Securities Act and various vesting agreements. In addition, the underwriters may, in their sole discretion, release all or some portion of the shares subject to market standoff or lock-up agreements prior to the expiration of the lock-up period. See the section entitled "Shares Eligible for Future Sale" for more information. Sales of a substantial number of such shares upon expiration of the market standoff and lock-up agreements, or the perception that such sales may occur, or early release of these agreements, could cause our market price to fall or make it more difficult for you to sell your common stock at a time and price that you deem appropriate.

We intend to file a registration statement on Form S-8 under the Securities Act covering approximately 3,084,550 shares of common stock issued or issuable upon the exercise of stock options, or subject to outstanding options under our 2014 Plan and 5,000,000 shares of common stock reserved for issuance under our 2023 Plan. Once we register the offer and sale of these shares, they can be freely sold in the public market upon issuance, subject to the market standoff or lock-up agreements or unless they are held by "affiliates," as that term is defined in Rule 144 of the Securities Act. If the holders of these shares choose to sell a large number of shares, they could adversely affect the market price for our common stock.

We may also issue shares of our common stock or securities convertible into shares of our common stock from time to time in connection with a financing, acquisition, investment or otherwise. Any such issuance could result in substantial dilution to our existing stockholders and cause the trading price of our common stock to decline.

The offering price of the shares and the other terms of the initial public offering have been determined through negotiations between us and the underwriter.

The initial public offering price of our common stock and other terms of the initial public offering have been determined through negotiations between the Company and the underwriter. This determined price may not reflect the price at which investors in the market will be willing to buy and sell our shares following this offering. You may be unable to sell your shares of common stock at or above the initial offering price. The market price of shares of our common stock following this offering could be subject to wide fluctuations in response to many risk factors listed in this section, and others beyond our control.

The offering price of the initial public offering and resale offering could differ.

The offering price of shares of our common stock in the initial public offering has been determined by negotiations between us and the underwriter. The selling stockholders may sell the resale shares at prevailing market prices or privately negotiated prices after close of the initial public offering and listing of our common

stock on NYSE American. Therefore, the offering prices of the initial public offering and resale offering could differ. As a result, the purchasers in the resale offering could pay more or less than the offering price in the initial public offering.

The resale by the selling stockholders in our resale offering may cause the market price of our common stock to decline.

The resale of shares of our common stock by the selling stockholders in the resale offering, as well as the issuance of common stock in the initial public offering, could result in resales of our common stock by our current stockholders concerned about the potential dilution of their holdings. In addition, the resale by other unregistered stockholders after expiration of the lock-up period could have the effect of depressing the market price for our common stock.

Our initial public offering price is substantially higher than the pro forma as adjusted net tangible book value per share of our outstanding common stock, and new investors will experience immediate and substantial dilution.

Our initial public offering price is substantially higher than the pro forma as adjusted net tangible book value per share of our common stock based on the expected total value of our total assets, less our goodwill and other intangible assets, less our total liabilities immediately following this offering. If you purchase shares of our common stock in this offering, you will experience immediate and substantial dilution of $4.76 per share in the price you pay for our common stock as compared to the pro forma as adjusted net tangible book value as of December 31, 2022, after giving effect to the issuance of shares of our common stock in this offering at the assumed initial public offering price of $5.00 per share, which is the midpoint of the price range set forth on the cover page of this prospectus. Furthermore, if the underwriters exercise their option to purchase additional shares, if outstanding options are exercised, if we issue awards to our employees under our equity incentive plans, or if we otherwise issue additional shares of our common stock, you could experience further dilution. For a further description of the dilution that you will experience immediately after this offering, see the section entitled "Dilution."

Our ability to use our net operating losses and research and development credit carryforwards to offset future taxable income may be subject to certain limitations.

In general, under Sections 382 and 383 of the Internal Revenue Code of 1986, as amended (the "Code"), a corporation that undergoes an "ownership change," generally defined as a greater than 50% change by value in its equity ownership over a three-year period, is subject to limitations on its ability to utilize its pre-change net operating losses ("NOLs"), and its research and development credit carryforwards to offset future taxable income. Our existing NOLs and research and development credit carryforwards may be subject to limitations arising from previous ownership changes, and if we undergo an ownership change, our ability to utilize NOLs and research and development credit carryforwards could be further limited by Sections 382 and 383 of the Code. In addition, our ability to deduct net interest expense may be limited if we have insufficient taxable income for the year during which the interest is incurred, and any carryovers of such disallowed interest would be subject to the limitation rules similar to those applicable to NOLs and other attributes. Future changes in our stock ownership, some of which might be beyond our control, could result in an ownership change under Section 382 of the Code. For these reasons, in the event we experience a change of control, we may not be able to utilize a material portion of the NOLs, research and development credit carryforwards or disallowed interest expense carryovers, even if we attain profitability.

Anti-takeover provisions in our charter documents, which will be effective prior to the effectiveness of this offering, and under Delaware law, could make an acquisition of our company more difficult, limit attempts by our stockholders to replace or remove our current management and limit the market price of our common stock.

Provisions in our second amended and restated certificate of incorporation and second amended and restated bylaws, as they will be in effect prior to the effectiveness of this offering, may have the effect of delaying or preventing a change of control or changes in our management. Our second amended and restated certificate of incorporation and second amended and restated bylaws will include provisions that:

- authorize our board of directors to issue, without further action by the stockholders, shares of undesignated preferred stock with terms, rights, and preferences determined by our board of directors that may be senior to our common stock;
- require that any action to be taken by our stockholders be effected at a duly called annual or special meeting and not by written consent;
- specify that special meetings of our stockholders can be called only by our board of directors, the chairperson of our board of directors, our Chief Executive Officer or our President (in the absence of a Chief Executive Officer);

- establish an advance notice procedure for stockholder proposals to be brought before an annual meeting, including proposed nominations of persons for election to our board of directors;
- prohibit cumulative voting in the election of directors;
- establish that our board of directors will be divided into three classes — Class I, Class II, and Class III — with each class serving staggered three-year terms;
- provide that, so long as our board of directors is classified, directors may only be removed for cause;
- provide that vacancies on our board of directors may be filled only by a majority of directors then in office, even though less than a quorum; and
- require the approval of our board of directors or the holders of two-thirds of our outstanding shares of voting stock to amend our bylaws and certain provisions of our certificate of incorporation.

These provisions may frustrate or prevent any attempts by our stockholders to replace or remove our current management by making it more difficult for stockholders to replace members of our board of directors, which is responsible for appointing the members of our management. In addition, we are governed by the provisions of Section 203 of the Delaware General Corporation Law, which generally, subject to certain exceptions, prohibits a Delaware corporation from engaging in any of a broad range of business combinations with any "interested" stockholder for a period of three years following the date on which the stockholder became an "interested" stockholder. Any of the foregoing provisions could limit the price that investors might be willing to pay in the future for shares of our common stock, and they could deter potential acquirers of our company, thereby reducing the likelihood that you would receive a premium for your shares of our common stock in an acquisition.

Our second amended and restated certificate of incorporation and second amended and restated bylaws, to be in effect prior to the effectiveness of this offering, will provide that the Court of Chancery of the State of Delaware or the federal district court for the District of Delaware will be the exclusive forum for certain disputes between us and our stockholders, which could result in increased costs for our stockholders to bring a claim and could limit our stockholders' ability to obtain a favorable judicial forum for disputes with us or our directors, officers or employees.

Our second amended and restated certificate of incorporation and second amended and restated bylaws, both of which will be in effect prior to the effectiveness of this offering, will provide that, unless the Company consents in writing to the selection of an alternative forum, the Court of Chancery of the State of Delaware (or, in the event that the Court of Chancery does not have jurisdiction, the federal district court for the District of Delaware or other state courts of the State of Delaware) is the exclusive forum for (i) any derivative action or proceeding brought on our behalf; (ii) any action asserting a claim of breach of fiduciary duty owed by, or other wrongdoing by, any director, officer, employee or agent of the Company to the Company or our stockholders, creditors or other constituents; (iii) any action asserting a claim against us arising pursuant to the Delaware General Corporation Law, our second amended and restated certificate of incorporation or our second amended and restated bylaws; (iv) any action to interpret, apply, enforce or determine the validity of our second amended and restated certificate of incorporation or our second amended and restated bylaws; or (v) or any action asserting a claim against us that is governed by the internal affairs doctrine; provided that, the exclusive forum provision will not apply to suits brought to enforce any liability or duty created by the Securities Act, Exchange Act or any other claim for which the federal courts have exclusive jurisdiction; and provided further that, if and only if the Court of Chancery of the State of Delaware dismisses any such action for lack of subject matter jurisdiction, or the Company consents in writing to the selection of an alternative forum, such action may be brought in another state or federal court sitting in the State of Delaware. Our second amended and restated certificate of incorporation and second amended and restated bylaws will also provide that the federal district courts of the United States of America will be the exclusive forum for the resolution of any complaint asserting a cause of action against us or any of our directors, officers, employees or agents and arising under the Securities Act or Exchange Act. Nothing in our second amended and restated certificate of incorporation or second amended and restated bylaws will preclude stockholders that assert claims under the Exchange Act from bringing such claims in state or federal court, subject to applicable law.

We believe these provisions may benefit us by providing increased consistency in the application of Delaware law and federal securities laws by chancellors and judges, as applicable, particularly experienced in resolving corporate disputes, efficient administration of cases on a more expedited schedule relative to other forums and protection against the burdens of multi-forum litigation. However, this choice of forum provision could result in increased costs for our stockholders to bring a claim and could may limit a stockholder's ability to bring a claim in a judicial forum that it finds

favorable for disputes with us or any of our directors, officers, other employees or stockholders, which may discourage lawsuits with respect to such claims, although our stockholders will not be deemed to have waived our compliance with federal securities laws and the rules and regulations thereunder. Furthermore, the enforceability of similar choice of forum provisions in other companies' certificates of incorporation has been challenged in legal proceedings, and it is possible that a court could find these types of provisions to be inapplicable or unenforceable. While the Delaware courts have determined that such choice of forum provisions are facially valid, a stockholder may nevertheless seek to bring a claim in a venue other than those designated in the exclusive forum provisions, and there can be no assurance that such provisions will be enforced by a court in those other jurisdictions. If a court were to find the choice of forum provision that will be contained in our second amended and restated certificate of incorporation and second amended and restated bylaws to be inapplicable or unenforceable in an action, we may incur additional costs associated with resolving such action in other jurisdictions, which could adversely affect our business and financial condition.

Our management has broad discretion in the use of the net proceeds from this offering, and our use of the net proceeds may not enhance our operating results or the price of our common stock.

We intend to use the net proceeds we receive from this offering to fund our ongoing clinical program for Ionojet, primarily for the completion of the reengineered design of the Ionojet technology and submission of a new IDE for our pivotal trial in diabetic foot ulcers, the redemption of all outstanding shares of Series B Preferred Stock, including the premium payments related thereto (see "Use of Proceeds" for additional information), the full satisfaction of the amount owed under the LFEIF Note, including interest, the repayment of loans (including related party loans), payment of deferred salaries and for general corporate purposes, including working capital, sales and marketing activities, research and development activities, general and administrative matters and capital expenditures. We may use a portion of the net proceeds to acquire complementary businesses or products. While we do not have agreements or commitments for any specific acquisitions at this time, we continually evaluate potential acquisition candidates to enhance our product offerings. Accordingly, our management will have considerable discretion over the specific use of the net proceeds that we receive in this offering and might not be able to obtain a significant return, if any, on investment of these net proceeds. You will not have the opportunity as part of your investment decision to assess whether the net proceeds are being used appropriately. Investors in this offering will need to rely upon the judgment of our management with respect to the use of proceeds. Until the net proceeds are used, they may be placed in investments that do not produce significant income, may be held in demand deposit accounts, or in investments intended to be highly liquid that may nevertheless lose value. If we do not use the net proceeds that we receive in this offering effectively, our business and prospects could be harmed, and the market price of our common stock could decline.

Certain of our related parties will directly benefit from the proceeds of this offering.

Prior to this offering, certain of our officers, directors and greater than 5% shareholders made loans to our company, some of which will be repaid out of the proceeds of this offering. Specifically, Michael Preston, our Chairman and Chief Executive Officer, will be repaid the sum of $50,000, David Dantzker, our Deputy Chairman and Chief Medical Officer, will be repaid $30,000, John Fernandes, our Chief Financial Officer, will be repaid approximately $42,000, and Alexander Dolgopolsky, a holder of more than 5% of our outstanding capital stock and our former Chief Scientist, will be repaid $13,000. In total, related parties will receive approximately $135,000 in repayment of loans out of the proceeds of this offering. Additionally, John Fernandes, our Chief Financial Officer, will receive $250,000 in payment of deferred salary out of the proceeds of this offering. Accordingly, the aforementioned related parties will directly benefit from the proceeds of this offering. See "Use of Proceeds" and "Certain Relationships and Related Transactions."

Claims for indemnification by our directors and officers may reduce our available funds to satisfy successful third-party claims against us and may reduce the amount of money available to us.

Our second amended and restated certificate of incorporation and second amended and restated bylaws provide that we will indemnify our directors and officers, in each case to the fullest extent permitted by Delaware law.

In addition, as permitted by Section 145 of the DGCL, our second amended and restated bylaws and the indemnification agreements that we intend to enter into with our directors and officers, among other things provide that:

- We will indemnify our directors and officers for serving us in those capacities, or for serving as a director, officer, employee or agent of other business enterprises at our request, to the fullest extent permitted by Delaware law. Delaware law provides that we may indemnify such person if such person acted in good faith and in a manner such person reasonably believed to be in or not opposed to our best interest and, with respect to any criminal proceeding, had no reasonable cause to believe such person's conduct was unlawful.

- We may, in our discretion, indemnify employees and agents in those circumstances where indemnification is permitted by applicable law.
- We will be required to advance expenses, as incurred, to our directors and officers in connection with defending a proceeding, except that such directors or officers shall undertake to repay such advances if it is ultimately determined that such person is not entitled to indemnification.
- The rights conferred in our bylaws will not be exclusive. We may not retroactively amend our bylaw provisions to reduce our indemnification obligations to directors, officers, employees and agents.

As a result, claims for indemnification by our directors and officers may reduce our available funds to satisfy successful third-party claims against us and may reduce the amount of money available to us.

We do not intend to pay dividends in the foreseeable future. As a result, your ability to achieve a return on your investment will depend on appreciation in the price of our common stock.

We have never declared or paid any cash dividends on our common stock. We currently intend to retain all available funds and any future earnings for use in the operation of our business and do not anticipate paying any dividends on our common stock in the foreseeable future. Any determination to pay dividends in the future will be at the discretion of our board of directors. Consequently, your only opportunity to achieve a return on your investment in our company will be if the market price of our common stock appreciates and you sell your shares at a profit. There is no guarantee that the price of our common stock that will prevail in the market after this offering will ever exceed the price that you pay. For additional information about our dividend policy, see the section entitled “Dividend policy” elsewhere in this prospectus.

We will incur significant increased costs as a result of operating as a public company, and our management will be required to devote substantial time to new compliance initiatives.

As a public company, we will incur legal, accounting and other expenses that we did not incur as a private company. We will be subject to the reporting requirements of the Exchange Act, and will be required to comply with the applicable requirements of SOX, and the Dodd-Frank Wall Street Reform and Consumer Protection Act (“Dodd-Frank”). The listing requirements of the NYSE American, and the rules of the SEC, require that we satisfy certain corporate governance requirements. Our management and other personnel will need to devote a substantial amount of time to ensure that we comply with all these requirements. Moreover, the reporting requirements, rules and regulations will increase our legal and financial compliance costs and will make some activities more time-consuming and costly. Any changes we make to comply with these obligations may not be sufficient to allow us to satisfy our obligations as a public company on a timely basis, or at all. These reporting requirements, rules and regulations, coupled with the increase in potential litigation exposure associated with being a public company, could also make it more difficult for us to attract and retain qualified persons to serve on our board of directors or board committees or to serve as executive officers, or to obtain certain types of insurance, including directors’ and officers’ insurance, on acceptable terms.

After this offering, we will be subject to Section 404 of SOX (“Section 404”), and the related rules of the SEC, which generally require our management and independent registered public accounting firm to report on the effectiveness of our internal control over financial reporting. In order to maintain effective internal controls, we will need additional financial personnel, systems and resources. Beginning with the second annual report on Form 10-K that we will be required to file with the SEC, Section 404 requires an annual management assessment of the effectiveness of our internal control over financial reporting. The rules governing the standards that must be met for management to assess our internal control over financial reporting are complex and require significant documentation, testing, and possible remediation. To comply with the requirements of being a reporting company under the Exchange Act, we will need to upgrade our systems including information technology; implement additional financial and management controls, reporting systems, and procedures; and hire additional accounting and finance staff.

To date, we have never conducted a review of our internal controls for the purpose of providing the reports required by these rules. During the course of our review and testing, we may identify additional deficiencies and

be unable to remediate them before we must provide the required reports. Furthermore, if we have a material weakness in our internal control over financial reporting, we may not detect errors on a timely basis and our financial statements may

be materially misstated. We or our independent registered public accounting firm may not be able to conclude on an ongoing basis that we have effective internal control over financial reporting, which could harm our operating results, cause investors to lose confidence in our reported financial information and cause the trading price of our stock to fall. In addition, as a public company we will be required to file accurate and timely quarterly and annual reports with the SEC under the Exchange Act. Any failure to report our financial results on an accurate and timely basis could result in sanctions, lawsuits, delisting of our shares from NYSE American or other adverse consequences that would materially harm our business and reputation.

For so long as we remain an emerging growth company as defined in the JOBS Act, we intend to take advantage of certain exemptions from various reporting requirements that are applicable to public companies that are not emerging growth companies, including, but not limited to, not being required to comply with the auditor attestation requirements of Section 404. We will remain an emerging growth company until the earlier of (1) the last day of the fiscal year (i) following the fifth anniversary of the completion of this offering, (ii) in which we have total annual gross revenue of at least $1.235 billion, or (iii) in which we are deemed to be a large accelerated filer, which means the market value of our common stock that is held by non-affiliates exceeds $700.0 million as of the prior June 30th, and (2) the date on which we have issued more than $1.0 billion in non-convertible debt during the prior three-year period.

We are an emerging growth company and we cannot be certain if (i) the reduced disclosure requirements or (ii) extended transition periods for complying with new or revised accounting standards applicable to emerging growth companies will make our common stock less attractive to investors. In addition, as a smaller reporting company we will also have reduced disclosure requirements.

We qualify as an emerging growth company. Under the JOBS Act, emerging growth companies can delay adopting new or revised accounting standards until such time as those standards apply to private companies. Under the JOBS Act, emerging growth companies can delay adopting new or revised accounting standards issued subsequent to the enactment of the JOBS Act until such time as those standards apply to private companies. We have elected to use this extended transition period for complying with new or revised accounting standards that have different effective dates for public and private companies until the earlier of the date we (i) are no longer an emerging growth company, or (ii) affirmatively and irrevocably opt out of the extended transition period provided in the JOBS Act. As a result, our financial statements may not be comparable to companies that comply with new or revised accounting pronouncements as of public company effective dates.

In addition, for as long as we continue to be an emerging growth company, we intend to take advantage of certain exemptions from various reporting requirements that are applicable to other public companies including, but not limited to, reduced disclosure obligations regarding executive compensation in our periodic reports and proxy statements and exemptions from the requirements of holding a nonbinding advisory vote on executive compensation and stockholder approval of any golden parachute payments not previously approved. We cannot predict if investors will find our common stock less attractive because we will rely on these exemptions. If some investors find our common stock less attractive as a result, there may be a less active trading market for our common stock and our stock price may be more volatile.

We are also a “smaller reporting company” as defined in the Exchange Act, and have elected to take advantage of certain of the scaled disclosures available to smaller reporting companies. To the extent that we continue to qualify as a “smaller reporting company” as such term is defined in Rule 12b-2 under the Exchange Act, after we cease to qualify as an emerging growth company, certain of the exemptions available to us as an “emerging growth company” may continue to be available to us as a “smaller reporting company,” including exemption from compliance with the auditor attestation requirements pursuant to SOX and reduced disclosure about our executive compensation arrangements. We will continue to be a “smaller reporting company” until we have $250 million or more in public float (based on our common stock) measured as of the last business day of our most recently completed second fiscal quarter or, in the event we have no public float (based on our common stock) or a public float (based on our common stock) that is less than $700 million, annual revenues of $100 million or more during the most recently completed fiscal year.

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General Risk Factors

Our future performance will depend on the continued engagement of key members of our management team.

Our future performance depends to a large extent on the continued services of members of our current management and other key personnel. Our management team is very seasoned and retaining key management is a key element of our success. In the event that we lose the continued services of such key personnel for any reason, this could have a material adverse effect on our business, operations and prospects. We presently do not maintain "key person" life insurance on our executives, which leaves us exposed to the loss of the services of our executives.

If we are not able to attract and retain highly skilled managerial, scientific and technical personnel, we may not be able to implement our business model successfully.

We believe that our management team must be able to act decisively to apply and adapt our business model in the rapidly changing markets in which we will compete. In addition, we will rely upon technical and scientific employees or third-party contractors to effectively establish, manage and grow our business. Consequently, we believe that our future viability will depend largely on our ability to attract and retain highly-skilled managerial, scientific and technical personnel. In order to do so, we may need to pay higher compensation or fees to our employees or consultants than we currently expect and such higher compensation payments would have a negative effect on our operating results.

Competition for experienced, high-quality personnel is intense and we cannot assure that we will be able to recruit and retain such personnel. We may not be able to hire or retain the necessary personnel to implement our business strategy. Our failure to hire and retain such personnel could impair our ability to develop new products and manage our business effectively.

We will need to increase the size of our organization, and we may experience difficulties in managing this growth.

As of March 13, 2023, we had seven employees who work full-time and one employee who works part-time. We will need to expand our managerial, operational, finance and other resources to manage our operations, commercialize Ionojet and related therapies or any other product candidates, if approved, and continue our development activities. Our management and personnel systems and facilities currently in place may not be adequate to support this future growth. Our need to effectively execute our growth strategy requires that we:

- manage any of our future clinical trials effectively;
- identify, recruit, retain, incentivize and integrate additional employees;
- manage our internal development efforts effectively while carrying out our contractual obligations to third parties; and
- continue to improve our operational, financial and management controls, reporting systems and procedures.

Because of our limited financial resources and the limited experience of certain members of our management team in managing a company with such anticipated growth, we may not be able to effectively manage the expansion of our operations or recruit and train additional qualified personnel. The physical expansion of our operations may lead to significant costs and may divert our management and business development resources. Any inability to manage growth could delay the execution of our development and strategic objectives or disrupt our operations.

If product liability lawsuits are brought against us, we may incur substantial liabilities and may be required to limit commercialization of our Ionojet device or any future products we develop.

We face an inherent risk of product liability as a result of the clinical testing of Ionojet and related therapies and any of our future product candidates. We will face further risk if we commercialize Ionojet, our related therapies

or any of our product candidates. For example, we may be sued if any product we sell or any product we develop allegedly causes injury or is found to be otherwise unsuitable during product testing, manufacturing, marketing or sale. Any such product liability claims may include allegations of defects in manufacturing, defects in design, a failure to warn of dangers inherent in the product, negligence, strict liability and a breach of warranties. Claims could also be asserted under state consumer protection acts. If we cannot successfully defend ourselves against product liability claims, we

may incur substantial losses or be required to limit commercialization of our products. Even a successful defense would require significant financial and management resources. Regardless of the merits or eventual outcome, liability claims may result in:

- decreased demand for our products;
- termination of clinical trial sites or entire trial programs;
- injury to our reputation and significant negative media attention;
- withdrawal of clinical trial participants or cancellation of clinical trials;
- significant costs to defend the related litigation;
- a diversion of management's time and our resources;
- substantial monetary awards to trial participants or patients;
- regulatory investigations, product recalls, withdrawals or labeling, marketing or promotional restrictions;
- loss of revenue;
- the inability to commercialize any products we develop; and
- a decline in our share price.

Our inability to obtain and maintain sufficient product liability insurance at an acceptable cost and scope of coverage to protect against potential product liability claims could prevent or inhibit the commercialization of Ionojet or any of our therapies or any future products that we develop. We intend to carry product liability insurance covering our clinical trials and, if approved, our marketed products. Although we maintain such insurance, any claim that may be brought against us could result in a court judgment or settlement in an amount that is not covered, in whole or in part, by our insurance or that is in excess of the limits of our insurance coverage. Our insurance policies also have various exclusions and deductibles, and we may be subject to a product liability claim for which we have no coverage. We will have to pay any amounts awarded by a court or negotiated in a settlement that exceed our coverage limitations or that are not covered by our insurance, and we may not have, or be able to obtain, sufficient capital to pay such amounts. Moreover, in the future, we may not be able to maintain insurance coverage at a reasonable cost or in sufficient amounts to protect us against losses. If and when we obtain approval for marketing our products, we intend to expand our insurance coverage to include the sale of NO and the lease of the Ionojet, however, we may be unable to obtain this liability insurance on commercially reasonable terms.

Our business and operations would suffer in the event of computer system failures.

Despite the implementation of security measures, our internal computer systems, and those of third parties on which we rely, are vulnerable to damage from computer viruses, malware, natural disasters, terrorism, war, telecommunication and electrical failures, cyber-attacks or cyber-intrusions over the internet, attachments to emails, persons inside our organization, or persons with access to systems inside our organization. The risk of a security breach or disruption, particularly through cyber-attacks or cyber-intrusions, including by computer hackers, foreign governments, and cyber-terrorists, has generally increased as the number, intensity and sophistication of attempted attacks and intrusions from around the world have increased. If such an event were to occur and cause interruptions in our operations, it could result in a material disruption of our current or future product development programs. For example, the loss of clinical trial data from completed or any future ongoing or planned clinical trials could result in delays in our regulatory approval efforts and significantly increase our costs to recover or reproduce the data. To the extent that any disruption or security breach was to result in a loss of or damage to our data or applications, or inappropriate disclosure of confidential or proprietary information, we could incur material legal claims and liability, damage to our reputation, and the further development of our product candidates could be delayed.

Any failure to maintain the security of information relating to our patients, customers, employees and suppliers, whether as a result of cybersecurity attacks or otherwise, could expose us to litigation, government enforcement actions and costly response measures, and could disrupt our operations and harm our reputation.

In connection with the pre-clinical and clinical development, sales and marketing of our products and services, we may from time to time transmit confidential information. We also have access to, collect or maintain private or confidential information regarding our clinical trials and the patients enrolled therein, employees, and suppliers, as well as our business. Cyberattacks are rapidly evolving and becoming increasingly sophisticated. It is possible that computer hackers and others might compromise our security measures, or security measures of those parties that we do business with now or in the future and obtain the personal information of patients in our clinical trials, vendors, employees and suppliers or our business information. A security breach of any kind, including physical or electronic break-ins, computer viruses and attacks by hackers, employees or others, could expose us to risks of data loss, litigation, government enforcement actions, regulatory penalties and costly response measures, and could seriously disrupt our operations. Any resulting negative publicity could significantly harm our reputation, which could cause us to lose market share and have an adverse effect on our results of operations.

We may acquire other businesses or form joint ventures or make investments in other companies or technologies that could harm our operating results, dilute our stockholders' ownership, increase our debt or cause us to incur significant expense.

As part of our business strategy, we may pursue acquisitions of businesses and assets. We also may pursue strategic alliances and joint ventures that leverage our technology and industry experience to expand our offerings or other capabilities. Though certain company personnel have business development and corporate transaction experience, including with licensing, mergers and acquisitions, and strategic partnering, as a company we have no experience with acquiring other companies and limited experience with forming strategic alliances and joint ventures. We may not be able to find suitable partners or acquisition candidates, and we may not be able to complete such transactions on favorable terms, if at all. If we make any acquisitions, we may not be able to integrate these acquisitions successfully into our existing business, and we could assume unknown or contingent liabilities. Any future acquisitions also could result in significant write-offs or the incurrence of debt and contingent liabilities, any of which could have a material adverse effect on our financial condition, results of operations and cash flows. Integration of an acquired company also may disrupt ongoing operations and require management resources that would otherwise focus on developing our existing business. We may experience losses related to investments in other companies, which could have a material negative effect on our results of operations. We may not identify or complete these transactions in a timely manner, on a cost-effective basis, or at all, and we may not realize the anticipated benefits of any acquisition, technology license, strategic alliance or joint venture.

To finance any acquisitions or joint ventures, we may choose to issue shares of our common stock as consideration, which would dilute the ownership of our stockholders. If the price of our common stock is low or volatile, we may not be able to acquire other companies or fund a joint venture project using our stock as consideration. Alternatively, it may be necessary for us to raise additional funds for acquisitions through public or private financings. Additional funds may not be available on terms that are favorable to us, or at all.

Declining general economic or business conditions may have a negative impact on our business.

Continuing concerns over U.S. health care reform legislation and energy costs, geopolitical issues, the availability and cost of credit and government stimulus programs in the United States and other countries have contributed to increased volatility and diminished expectations for the global economy. These factors, combined with low business and consumer confidence, could precipitate an economic slowdown and recession. Additionally, political changes in the U.S. and elsewhere in the world have created a level of uncertainty in the markets. If the economic climate does not improve or deteriorates, our business, as well as the financial condition of our suppliers and our third-party payors, could be adversely affected, resulting in a negative impact on our business, financial condition and results of operations.

SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus contains "forward-looking statements." We use words such as "could," "may," "might," "will," "expect," "likely," "believe," "continue," "anticipate," "estimate," "intend," "plan," "project," and other similar expressions to identify some forward-looking statements, but not all forward-looking statements include these words. All of our forward-looking statements involve estimates and uncertainties that could cause actual results to differ materially from those expressed in the forward-looking statements. Accordingly, any such statements are qualified in their entirety by reference to the information described under the caption "Risk Factors" and elsewhere in this prospectus.

The forward-looking statements contained in this prospectus are based on assumptions that we have made in light of our industry experience and our perceptions of historical trends, current conditions, expected future developments, and other factors we believe are appropriate under the circumstances. As you read and consider this prospectus, you should understand that these statements are not guarantees of performance or results. They involve risks, uncertainties (many of which are beyond our control), and assumptions. Although we believe that these forward-looking statements are based on reasonable assumptions, you should be aware that many factors could affect our actual operating and financial performance and cause our performance to differ materially from the performance anticipated in the forward-looking statements. We believe these factors include, but are not limited to, those described under "Risk Factors" and "Management's Discussion and Analysis of Financial Condition and Results of Operations." Should one or more of these risks or uncertainties materialize, or should any of these assumptions prove incorrect, our actual operating and financial performance may vary in material respects from the performance projected in these forward-looking statements.

Further, any forward-looking statement speaks only as of the date on which it is made, and except as required by law, we undertake no obligation to update any forward-looking statement contained in this prospectus to reflect events or circumstances after the date on which it is made or to reflect the occurrence of anticipated or unanticipated events or circumstances. New factors that could cause our business not to develop as we expect emerge from time to time, and it is not possible for us to predict all of them. Further, we cannot assess the impact of each currently known or new factor on our results of operations or the extent to which any factor, or combination of factors, may cause actual results to differ materially from those contained in any forward-looking statements.

MARKET, INDUSTRY AND OTHER DATA

This prospectus includes market and industry data and forecasts that we have derived from independent consultant reports, publicly available information, various industry publications, and our internal data and estimates.

Our internal data and estimates are based upon information obtained from trade and business organizations and other contacts in the markets in which we operate and our management's understanding of industry conditions. Although we believe that such information is reliable, we have not had this information verified by any independent sources.

USE OF PROCEEDS

We estimate that the net proceeds from the sale of shares of our common stock in this offering will be approximately $13.25 million, after deducting underwriting discounts and commissions and estimated offering expenses payable by us, based on an assumed initial public offering price of $5.00 per share, which is the midpoint of the price range set forth on the cover page of this prospectus. If the underwriters exercise in full their option to purchase additional shares of common stock, we estimate that the net proceeds to us from this offering will be approximately $15.35 million, after deducting underwriting discounts and commissions and estimated offering expenses payable by us, based on an assumed initial public offering price of $5.00 per share, which is the midpoint of the price range set forth on the cover page of this prospectus.

Each $1.00 increase (decrease) in the assumed initial public offering price of $5.00 per share of common stock would increase (decrease) the net proceeds to us from this offering, after deducting underwriting discounts and commissions and estimated offering expenses payable by us, by approximately $2.8 million, assuming that the number of shares we are offering, as set forth on the cover page of this prospectus, remains the same. We may also increase or decrease the number of shares of common stock we are offering. Each increase (decrease) of 1,000,000 in the number of shares we are offering would increase (decrease) the net proceeds to us from this offering, after deducting underwriting discounts and commissions and estimated offering expenses payable by us, by approximately $4.6 million, assuming the assumed initial public offering price per share, as set forth on the cover page of this prospectus, remains the same.

We expect to use the net proceeds from this offering, together with our existing cash as follows:

- $[ ] million to fund our ongoing clinical program for Ionojet, of which $[ ] million will specifically be used for completion of the reengineered design of the Ionojet technology and the submission of a new IDE for our pivotal trial in diabetic foot ulcers;
- $1,649,452 for the redemption of all outstanding shares of the Series B Preferred Stock, including accumulated dividends at the simple annual rate of 20% per annum, based upon the stated value of $100 per share, calculated through March 31, 2023, which amount may be increased by a premium payment up to an additional $1 million pursuant to the terms of an agreement with the holder of the Series B Preferred Stock if the net proceeds of the initial public offering exceed $15 million;
- $386,883 in full satisfaction of the amount owed under the LFEIF Note, including interest at the fixed simple rate of 20% per annum calculated through March 31, 2023, which note matures thirty (30) days after the closing of this offering;
- approximately $160,000 in repayment of loans, $135,000 of which will be repaid to related parties ($50,000 to Michael Preston, our Chairman and Chief Executive Officer; $30,000 to David Dantzker, our Deputy Chairman and Chief Medical Officer; $42,000 to John Fernandes, our Chief Financial Officer; and $13,000 to Alexander Dolgopolsky, a holder of more than 5% of our outstanding capital stock and our former Chief Scientist);
- approximately $725,000 in payment of deferred salaries over the 18 months subsequent to this offering, of which $250,000 will be paid to John Fernandes, our Chief Financial Officer; and
- the remainder for working capital, research and development, general and administrative matters and general corporate purposes.

We will require a total of approximately $15 million to complete the reengineered design of the Ionojet technology and the submission of a new IDE for our pivotal trial in diabetic foot ulcers and an additional $15 million to complete the pivotal clinical trial and the premarket application submission process, assuming the completion of such pivotal trial and that the primary and/or secondary outcomes of the trial design are met. Therefore, we will require additional funding of approximately $[__] million to [___], which, although there can be no assurance, we intend to raise in subsequent offerings, both public and private, or by commercial arrangements.

The expected use of the net proceeds from this offering and our existing cash represent our intentions based upon our current plans and business conditions. The amounts and timing of our actual expenditures may vary significantly depending on a number of factors, including the progress of our development and commercialization efforts, the status of and results from our clinical trials, and any collaborations that we may enter into with third parties for our products or product candidates, as well as any unforeseen cash needs. As a result, our management will retain broad discretion over the allocation of the net proceeds from this offering. We have no current understandings, agreements or commitments for any material acquisitions or licenses of any products or product candidates, businesses or technologies.

Pending our application of the net proceeds from this offering, we plan to invest the net proceeds in a variety of capital preservation investments, including short and intermediate-term, interest-bearing obligations, investment-grade instruments, certificates of deposit or direct or guaranteed obligations of the U.S. government.

DIVIDEND POLICY

We have never declared or paid, and we do not anticipate declaring or paying in the foreseeable future, any cash dividends on our common stock. Each holder of the Series B Preferred Stock is entitled to receive dividends at the simple annual rate of twenty percent (20%) of the stated value of $100 per share per annum, payable in cash upon the redemption of such shares. We intend to reinvest any earnings in developing and expanding our business. Any future determination relating to the declaration and payment of dividends will be at the discretion of our board of directors and will depend on then-existing conditions, including our operating results, financial conditions, contractual restrictions, capital requirements, business prospects and other factors our board of directors may deem relevant.

CAPITALIZATION

The following table sets forth our cash and equivalents and capitalization as of December 31, 2022:

- on an actual basis;
- on a pro forma basis to give effect to (i) on January 25, 2023, the issuance of 17,500 shares of common stock in repayment of a loan in the principal amount of $100,000; (ii) on February 27, 2023: (a) the conversion of the 20,000 shares of Series A Preferred Stock into 458,850 shares of special voting common stock, resulting in the conversion of Series A Preferred Stock dividends in the amount of $884,457 to equity; (b) the cashless exercise of $5,000,000 (pre-forward split) warrants into 185,500 shares of special voting common stock, resulting in the reduction of warrant liability of $2,819,325; and (c) the subsequent conversion of all 7,819,000 shares of special voting common stock outstanding into 7,819,000 shares of common stock; and (iii) the filing and effectiveness of our second amended and restated certificate of incorporation prior to the effectiveness of this offering; and
- on a pro forma as adjusted basis to additionally give effect to: (i) the pro forma adjustments set forth above; (ii) the conversion of the Private Placement Notes upon the effectiveness of the registration statement of which this prospectus is a part, into an aggregate of 775,900 shares of common stock at an conversion price of $2.50 per share, which is 50% of the assumed initial public offering price of $5.00 per share, which is the midpoint of the price range set forth on the cover page of this prospectus, (iii) the sale of 3,000,000 shares of common stock in this offering, assuming an initial public offering price of $5.00 per share of common stock (the mid-point of the price range set forth on the cover page of this prospectus), after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us; (iv) the redemption of 10,000 shares of Series B Preferred Stock outstanding, at the price of $100 per share, pursuant to an agreement with the holder of the Series B Preferred Stock; (v) the repayment of the LFEIF Note, which shall become due and payable thirty (30) days after the closing of this offering if not earlier converted at the direction of LFEIF; (vi) the issuance of 145,120 shares of common stock in repayment of an aggregate of $725,600 of outstanding loans pursuant to agreements with the holders of such loans upon consummation of this offering; (vii) the issuance of warrants to purchase an aggregate of 1,231,817 shares of common stock in exchange for deferred salaries and bonuses in the aggregate amount of $6,159,085 upon consummation of this offering; (viii) the issuance of 318,364 shares of common stock in consideration for accrued consulting fees and commissions in the aggregate amount of $1,591,820 upon consummation of this offering; and (ix) the issuance of 64,000 shares of common stock in consideration for $320,000 of outstanding accounts payable upon consummation of this offering.

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The information set forth in the table below is illustrative only and will be adjusted based on the actual initial public offering price and other terms of this offering as determined at pricing. You should read the information in this table together with our audited financial statements and related notes and "Management's Discussion and Analysis of Financial Condition and Results of Operations" appearing elsewhere in this prospectus.

	As of December 31, 2022		
	Actual	Pro Forma	Pro Forma, as adjusted
		(unaudited)	*(unaudited)*
Cash and cash equivalents	$ 554,379	554,379	11,768,044
Convertible notes, net of debt issuance costs	1,609,218	1,609,218	0
Stockholders' equity:			
Common stock (2,000,000 shares authorized, 152,775 shares issued and outstanding as of December 31, 2022, at par value $0.01), 34,572,125 shares issued and outstanding as of December 31, 2022, pro forma, and 38,875,509 shares issued and outstanding as of December 31, 2022, pro forma as adjusted	1,528	345,721	388,757
Special voting common stock (1,000,000 shares authorized, 40,998 shares issued and outstanding as of December 31, 2022, at par value $0.01), no shares issued and outstanding pro forma and no shares issued and outstanding pro forma as adjusted	410	0	0
Preferred stock (1,000,000 shares authorized, at par value $0.01) Series A 8% Convertible Preferred Stock (30,000 shares designated, 20,000 shares issued and outstanding as of December 31, 2022; no shares issued and outstanding pro forma and no shares issued and outstanding pro forma as adjusted); Series B 20% Preferred Stock (10,000 shares designated, 10,000 shares issued and outstanding as of December 31, 2022), 10,000 shares issued and outstanding pro forma and no shares issued and outstanding pro forma, as adjusted	2,932,800	1,000,000	0
Additional paid-in capital	66,651,917	71,497,424	95,110,313
Accumulated deficit	(86,321,534)	(86,321,534)	(86,321,534)
Total stockholders' (deficit)/equity	$ (19,790,087)	(14,937,962)	8,717,961

The number of shares of our common stock to be outstanding upon completion of this offering is based on 33,910,275 shares of our common stock outstanding as of December 31, 2022 (including 7,174,650 shares of special voting common stock) and excludes:

- 4,102,050 shares of common stock issuable upon the exercise of outstanding stock options at a weighted-average exercise price of $2.603 per share;
- 2,508,275 shares of common stock issuable upon the exercise of outstanding warrants at a weighted-average exercise price of $2.99 per share;
- 1,741,600 shares of common stock reserved for future issuance under our 2014 Plan, which shares shall no longer be available for future issuance upon the effectiveness of the 2023 Plan;
- 5,000,000 shares of common stock reserved for future issuance under our 2023 Plan;

- 54,313 shares of common stock issuable upon exercise of outstanding warrants issued to Boustead Securities, LLC, as placement agent for the Private Placement;
- 210,000 shares of common stock issuable upon exercise the Representative's Warrants, which are expected to be issued to the Representative in connection with this offering; and
- 1,231,817 shares of common stock issuable upon the exercise of warrants to be issued in exchange for deferred salaries and bonuses in the aggregate amount of $6,159,085 upon consummation of this offering.

Each $1.00 increase (decrease) in the assumed initial public offering price of $5.00 per share (the midpoint of the price range set forth on the cover page of this prospectus) would increase (decrease) the amount of cash, additional paid-in capital, total stockholders' equity (deficit) and total capitalization on a pro forma as adjusted basis by approximately $2.8 million, assuming the number of shares, as set forth on the cover page of this prospectus, remains the same and after deducting underwriting discounts and commissions and estimated offering expenses payable by us. Similarly, each increase (decrease) of one million shares offered by us would increase (decrease) cash, total stockholders' equity (deficit) and total capitalization on a pro forma as adjusted basis by approximately $4.6 million, assuming the assumed initial public offering price of $5.00 per share (the midpoint of the estimated price range set forth on the cover page of this prospectus) remains the same, and after deducting underwriting discounts and commissions and estimated offering expenses payable by us.

Each one million share increase in the number of shares offered by us together with a concomitant $1.00 increase in the assumed initial public offering price of $5.00 per share (the midpoint of the estimated price range set forth on the cover page of this prospectus) would increase each of cash and total stockholders' (deficit) equity by approximately $11.5 million after deducting underwriting discounts and commissions and any estimated offering expenses payable by us. Conversely, each one million share decrease in the number of shares offered by us together with a concomitant $1.00 decrease in the assumed initial public offering price of $5.00 per share (the midpoint of the estimated price range set forth on the cover page of this prospectus) would decrease each of cash and total stockholders' (deficit) equity by approximately $6.4 million after deducting underwriting discounts and commissions and any estimated offering expenses payable by us. The pro forma as adjusted information discussed above is illustrative only and will be adjusted based on the actual public offering price and other terms of this offering determined at pricing.

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DILUTION

Information contained in this Dilution section reflects a 175-for-1 forward split of our common stock, which is the midpoint of the Forward Split Range, to occur prior to the effectiveness of the registration statement of which this prospectus forms a part.

If you purchase shares of our common stock in this offering, your interest will be diluted immediately to the extent of the difference between the assumed public offering price of $5.00 per share (the mid-point of the range appearing on the front cover of this prospectus) and the as adjusted net tangible book value per share of our common stock immediately upon the consummation of this offering. As of December 31, 2022, we had a historical net tangible book value of $(17,051,086), or $(0.50) per share of common stock. Our historical net tangible book value per share represents total tangible assets less total liabilities, divided by the number of shares of our common stock outstanding as of December 31, 2022.

Our pro forma net tangible book value as of December 31, 2022 was $(13,247,304), or $(0.38) per share of our common stock. Pro forma net tangible book value represents the amount of our total tangible assets less our total liabilities, after giving effect to (i) on January 25, 2023, the issuance of 17,500 shares of common stock in repayment of a loan in the principal amount of $100,000; (ii) on February 27, 2023: (a) the conversion of the 20,000 Series A Preferred Stock into 458,850 shares of special voting common stock, resulting in the conversion of Series A Preferred Stock dividends in the amount of $884,457, to equity; (b) the cashless exercise of $5,000,000 of warrants (pre-forward split) into 185,500 shares of special voting common stock, resulting in the reduction of warrant liability of $2,819,325; and (c) the subsequent conversion of all 7,819,000 shares of special voting common stock outstanding into 7,819,000 shares of common stock, and (iii) the filing and effectiveness of our second amended and restated certificate of incorporation prior to the effectiveness of this offering.

After giving effect to: (i) the pro forma adjustments set forth above; (ii) the conversion upon the effectiveness of the registration statement of which this prospectus is a part of the Private Placement Notes, into an aggregate of 775,900 shares of common stock at a conversion price of $2.50 per share, which is 50% of the assumed initial public offering price of $5.00 per share, which is the midpoint of the price range set forth on the cover page of this prospectus (iii) our sale of 3,000,000 shares of common stock in this offering at an assumed public offering price of $5.00 per share of common stock, which is the midpoint of the price range set forth on the cover page of this prospectus, and after deducting underwriters' commissions and estimated offering expenses, but assuming no exercise of the Representative's Warrants issued to the Representative; (iii) the redemption of 10,000 shares of Series B Preferred Stock outstanding, at the price of $100 per share, including accumulated dividends, pursuant to an agreement with the holder of the Series B Preferred Stock; (iv) the repayment of the LFEIF Note, which shall become due and payable thirty (30) days after the closing of this offering if not earlier converted at the direction of LFEIF; (v) the issuance of 145,120 shares of common stock in repayment of an aggregate of $725,600 of outstanding loans pursuant to agreements with the holders of such loans upon consummation of this offering; (vi) the issuance of warrants to purchase an aggregate of 1,231,817 shares of common stock in exchange for deferred salaries and bonuses in the aggregate amount of $6,159,085 upon consummation of this offering; (vii) the issuance of 318,364 shares of common stock in consideration for accrued consulting fees and commissions in the aggregate amount of $1,591,820 upon consummation of this offering; and (viii) the issuance of 64,000 shares of common stock in consideration for $320,000 in outstanding accounts payable upon consummation of this offering, our pro forma as adjusted net tangible book value as of December 31, 2022 would have been $9,408,419 or $0.24 per share of common stock. This represents an immediate increase in pro forma net tangible book value of $0.62 per share of common stock to existing stockholders and an immediate dilution in net tangible book value of $4.76 per share to purchasers of common stock in this initial public offering.

The following table illustrates this dilution on a per share of common stock basis assuming the underwriters do not exercise their option to purchase additional shares of common stock:

Assumed public offering price per share			$	5.00
Net tangible book value per share as of December 31, 2022	$	(0.50)		
Pro forma net tangible book value per share	$	(0.38)		

Pro forma increase in net tangible book value per share attributable to this offering	$	0.62		
Pro forma as adjusted net tangible book value per share as of December 31, 2022, after giving effect to the offering	$			0.24
Dilution per share to new investors in the offering			$	4.76

The dilution information discussed above is illustrative only and may change based on the actual initial public offering price and other terms of this offering.

A $1.00 decrease in the assumed initial public offering price of $5.00 per share (the midpoint of the price range set forth on the cover page of this prospectus) would decrease our pro forma as adjusted net tangible book value as of December 31, 2022 after this initial public offering by approximately $2,760,000, or approximately $0.07 per share, and would increase dilution to investors in this offering to approximately $0.07 per share, assuming that the number of shares offered by us, as set forth on the cover page of this prospectus, remains the same, after deducting the estimated underwriting discount and estimated offering expenses payable by us. A $1.00 increase in the assumed initial public offering price of $5.00 per share (the midpoint of the price range set forth on the cover page of this prospectus) would decrease our pro forma as adjusted net tangible book value as of December 31, 2022 after this initial public offering by approximately $2,760,000, or approximately $0.07 per share, and would decrease dilution to investors in this initial public offering to approximately $0.07 per share, assuming that the number of shares offered by us, as set forth on the cover page of this prospectus, remains the same, after deducting the estimated underwriting discount and estimated offering expenses payable by us. We may also increase or decrease the number of shares we are offering. An increase of 1,000,000 in the number of shares we are offering would increase our pro forma as adjusted net tangible book value as of December 31, 2022 after this initial public offering by approximately $4,600,000, or approximately $0.12 per share, and would decrease dilution to investors in this offering to approximately $0.12 per share, assuming the assumed initial public offering price per share remains the same, after deducting the estimated underwriting discount and estimated offering expenses payable by us. A decrease of 1,000,000 in the number of shares we are offering would decrease our pro forma as adjusted net tangible book value as of December 31, 2022 after this initial public offering by approximately $4,600,000, or approximately $0.12 per share, and would increase dilution to investors in this initial public offering to approximately $0.12 per share, assuming the assumed initial public offering price per share remains the same, after deducting the estimated underwriting discount and estimated offering expenses payable by us.

If the underwriters exercise their option in full to purchase 450,000 additional shares of common stock in this initial public offering at the assumed offering price of $5.00 per share (the midpoint of the price range set forth on the cover page of this prospectus), the pro forma net tangible book value per share after this initial public offering would be $0.29 per share of common stock, the increase in the pro forma as adjusted net tangible book value per share to existing stockholders would be $0.67 per share of common stock and the dilution to new investors purchasing securities in this initial public offering would be $4.71 per share of common stock.

The following charts illustrate our pro forma proportionate ownership, upon completion of this initial public offering by present stockholders and investors in this initial public offering, compared to the relative amounts paid by each. The charts reflect payment by present stockholders as of the date the consideration was received and by investors in this initial public offering at the public offering price. The charts further assume no changes in net tangible book value other than those resulting from the initial public offering.

	Shares Purchased		Total Consideration		Average Price Per Share ($)
	Amount (#)	Percent (%)	Amount ($)	Percent (%)	
Existing stockholders	35,875,509	92%	48,693,421	76%	1.36
New investors	3,000,000	8%	15,000,000	24%	5.00
Total	38,875,509	100%	63,693,421	100%	1.64

The number of shares of our common stock outstanding before and after this initial public offering reflected in the tables and discussion above are based on (i) 34,572,125 shares of common stock outstanding as of the date of this prospectus, and (ii) 38,875,509 shares of common stock outstanding on a pro forma as adjusted basis after giving effect to: (a) the conversion of the Private Placement Notes upon the effectiveness of the registration statement of which this prospectus is a part into an aggregate of 775,900 shares of common stock at an conversion price of $2.50 per share, which is 50% of the assumed initial public offering price of $5.00 per share, which is the midpoint of the price range set forth on the cover page of this, (b) the sale of 3,000,000 shares of common stock in this offering, assuming an initial public offering price of $5.00 per share of common stock (the mid-point of the price range set forth on the cover page of this prospectus), after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us; (c) the issuance of 145,120 shares of common stock in repayment of an aggregate of $725,600 of outstanding loans pursuant to agreements with the holders of such

loans upon consummation of this offering; (d) the issuance of 318,364 shares of common stock in consideration for accrued consulting fees and commissions in the aggregate amount of $1,591,820 upon consummation of this offering; and (e) the issuance of 64,000 shares of common stock in consideration for $320,000 of outstanding accounts payable upon consummation of this offering, and exclude, as of that date, the following:

- 4,012,050 shares of common stock issuable upon exercise of stock options, at a weighted average exercise price of $2.603 per share;

- 2,508,275 shares of common stock issuable upon the exercise of outstanding warrants at a weighted-average exercise price of $2.99 per share;
- 1,741,600 shares of common stock reserved for issuance under our 2014 Plan, which shares shall no longer be available for future issuance upon the effectiveness of the 2023 Plan;
- 5,000,000 shares of common stock reserved for issuance under the 2023 Plan;
- 54,313 shares of common stock issuable upon exercise of outstanding warrants issued to Boustead Securities, LLC, as placement agent for the Private Placement;
- 210,000 shares of common stock issuable upon exercise of the Representative's Warrants, which are expected to be issued to the Representative in connection with this offering; and
- 1,231,817 shares of common stock issuable upon the exercise of warrants to be issued in exchange for deferred salaries and bonuses in the aggregate amount of $6,159,085 upon consummation of this offering.

The table below assumes the underwriters' exercise their over-allotment option in full:

	Shares Purchased		Total Consideration		Average Price Per Share ($)
	Amount (#)	Percent (%)	Amount ($)	Percent (%)	
Existing stockholders	35,875,509	91%	48,693,421	74%	1.36
New investors	3,450,000	9%	17,250,000	26%	5.00
Total	39,325,509	100%	65,943,421	100%	

The number of shares of our common stock outstanding before and after this offering reflected in the tables and discussion above are based on: (i) 34,572,125 shares of common stock outstanding as of the date of this prospectus, and (ii) 38,875,509 shares of common stock outstanding on a pro forma as adjusted basis after giving effect to: (a) the conversion of the Private Placement Notes upon the effectiveness of the registration statement of which this prospectus is a part into an aggregate of 775,900 shares of common stock at an conversion price of $2.50 per share, which is 50% of the assumed initial public offering price of $5.00 per share, which is the midpoint of the price range set forth on the cover page of this prospectus, (b) the sale of 3,000,000 shares of common stock in this offering, assuming an initial public offering price of $5.00 per share of common stock (the mid-point of the price range set forth on the cover page of this prospectus), after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us; (c) the issuance of 145,120 shares of common stock in repayment of an aggregate of $725,600 of outstanding loans pursuant to agreements with the holders of such loans upon consummation of this offering; (d) the issuance of 318,364 shares of common stock in consideration for accrued consulting fees and commissions in the aggregate amount of $1,591,820 upon consummation of this offering; and (e) the issuance of 64,000 shares of common stock in consideration for $320,000 of outstanding accounts payable upon consummation of this offering, and exclude, as of that date, the following:

- 4,012,050 shares of common stock issuable upon the exercise of outstanding stock options at a weighted-average exercise price of $2.603 per share;
- 2,508,275 shares of common stock issuable upon the exercise of outstanding warrants (not including the LFEIF Warrants) at a weighted-average exercise price of $2.99 per share;
- 1,741,600 shares of common stock reserved for future issuance under our 2014 Plan, which shares shall no longer be available for future issuance upon the effectiveness of the 2023 Plan;
- 5,000,000 shares of common stock reserved for future issuance under our 2023 Plan;
- 54,313 shares of common stock issuable upon exercise of outstanding warrants issued to Boustead Securities, LLC, as placement agent for the Private Placement;

- 210,000 shares of common stock issuable upon exercise of the Representative's Warrants, which are expected to be issued to the Representative in connection with this offering; and
- 1,231,817 shares of common stock issuable upon the exercise of warrants to be issued in exchange for deferred salaries and bonuses in the aggregate amount of $6,159,085 upon consummation of this offering.

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MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

You should read the following discussion and analysis of our financial condition and results of operations together with our financial statements and the related notes to those statements included elsewhere in this prospectus. This discussion and analysis and other parts of this prospectus contain forward-looking statements based upon current beliefs, plans and expectations related to future events and our future financial performance that involve risks, uncertainties and assumptions, such as statements regarding our intentions, plans, objectives, expectations, forecasts and projections. Our actual results and the timing of selected events could differ materially from those anticipated in these forward-looking statements as a result of several factors, including those set forth under the section titled "Risk Factors" and elsewhere in this prospectus. You should carefully read the "Risk Factors" to gain an understanding of the important factors that could cause actual results to differ materially from our forward-looking statements. Please also see the section titled "Special Note Regarding Forward-Looking Statements."

Overview

We are a clinical-stage biotechnology company that has been developing a proprietary patented high-energy plasma device that generates NO in the form of a plasma/NO stream and delivers it to targeted locations of the body. The stream can potentially be used for various therapeutic purposes, including as an anti-infective, anti-inflammatory and tissue-regenerative therapy for chronic wounds and SSTIs. The FDA previously determined that our product will be a Class III medical device reviewed under a PMA application with the FDA's CDRH consulting with the CDER as necessary. The cornerstone of the plasma/NO therapy is our patented delivery platform named "Ionojet" which allows us to turn atmospheric air into a plasma/NO stream that has been shown in investigations: (i) to be non-toxic, (ii) to generate NO activity up to 3 cm below the skin and (iii) to stimulate sustained biological activity in tissue for up to an hour after delivery of the therapy. To date, our clinical activities have been focused on the clinical trials described below, including our dose-ranging feasibility clinical trial for the treatment of diabetic foot ulcers completed in 2018 using the plasma NO stream generated from our Ionojet, and the preparation for our planned pivotal clinical trial, including finalization of the prototype of the Ionojet that we intend to use in our pivotal trial.

Prior to commencing our pivotal trial in diabetic foot ulcers, we will need to submit, and receive approval of, a new IDE filing, permitting the use of the reengineered design of the Ionojet in a new clinical study. We anticipate that we will be able to submit the new IDE approximately six months after consummation of this offering and that it will take approximately three months after submission of the IDE to receive approval thereof from the FDA. After receiving approval of the new IDE, we expect that it will take approximately three months to commence the pivotal trial, which will require IRB approval of the study, identification and initiation of clinical trial sites and patient recruitment activities. We do not believe that the modifications to the device or the requirement to submit, and receive approval of, a new IDE has had, or will have, an effect on our expected timeline for commencement of the pivotal trial.

We plan to seek premarket approval of the Ionojet from the FDA as a Class III medical device, assuming we are able to complete our pivotal trial and the data are favorable. If we are unable to complete our pivotal trial or, upon completion of the trial, the outcomes of the trial design are not met, we may not be able to seek premarket approval of the Ionojet. We expect to submit our PMA application in the second quarter of 2024 and the FDA's review of the PMA can range from 6 to 15 months depending upon whether the FDA raises significant issues during its interactive review. If we receive premarket approval from the FDA of our technology for the treatment of diabetic foot ulcers, our goal is to market our technology to hospitals, wound clinics and private podiatrist offices to treat diabetic foot ulcers and to generate revenue by charging for the device on a usage basis. We do not intend to generate revenue from the sale of the Ionojet device, of which we intend to retain ownership. In addition to wound healing, we believe that our technology has application in many additional indications including dermatology, infection control, podiatry, dentistry, pain and inflammation and cosmetics, as well as potentially in certain respiratory infections, both viral and bacterial, oral infections, dental indications, ophthalmic and facial applications and in topical indications, although to date the only pre-clinical and clinical studies we have conducted with our Ionojet device have been with regard to wound healing, and our pivotal clinical trial will focus solely on diabetic foot ulcers.

The plasma/NO stream generated by our device has the potential to promote healing in various ways as a result of the effect that NO has on immune system regulation, blood vessel regulation, tissue regeneration and defending against infection. In particular, NO represents a potential wound therapeutic agent due to its ability to regulate inflammation, increase blood flow, decrease blood pressure, eradicate bacterial infections, and promote the growth and activity of

immune cells. Since the plasma/NO stream has been shown in investigations to generate NO activity up to 3 cm below the skin, we believe that the delivery of the NO via plasma energy allows the NO to pass through the skin and locally saturate the tissue and that this saturation enhances the NO pathways already present in the human body.

We believe that our therapy is novel in that it is intended to simultaneously both disinfect and promote the healing of infected wounds. We also are not aware of any currently approved technology to deliver site-specific and therapeutically relevant concentrations of NO to skin and soft tissue, as well as to joints and muscles, leading to significantly-increased levels of NO as much as three centimeters beneath the skin. We believe we are the furthest along in the clinical development of a therapy of this kind. We are continuing to explore and effect functional and aesthetic improvements to the device to meet the expectations of the U.S. and overseas markets prior to commercial deployment and intend to use a portion of the proceeds of this offering to implement such improvements to our Ionojet technology and prepare for the submission of a new IDE for our pivotal trial in diabetic foot ulcers.

We are a clinical-stage biotechnology company with a limited operating history. We also have a history of operating losses and expect to continue to incur substantial losses for the foreseeable future. Our independent registered public accounting firm has expressed substantial doubt about our ability to continue as a going concern. Our cash and the proceeds of this offering will only fund our operations for a limited time. The proceeds from this offering will be insufficient to allow us to fully fund completion of our pivotal clinical trial and the premarket approval process, which we estimate will cost $30 million in total. We will need to raise additional capital to commence and complete the pivotal clinical trial.

Recent Developments

Private Placement

On June 20, 2022, we commenced the Private Placement of up to $5,000,000 of convertible promissory notes, pursuant to which we issued: (i) convertible promissory notes in the principal aggregate amount of $450,000 on June 30, 2022; (ii) convertible promissory notes in the principal aggregate amount of $60,000 on August 16, 2022; (iii) convertible promissory notes in the principal aggregate amount of $725,000 on September 23, 2022; (iv) convertible promissory notes in the principal aggregate amount of $315,000 on October 25, 2022; (v) convertible promissory notes in the principal aggregate amount of $288,000 on November 30, 2022; and (vi) a convertible promissory note in the principal amount of $101,749.70 on December 21, 2022 (the Private Placement Notes). The promissory note issued in December 2022 was pursuant to a Subscription Agreement that was executed on or before November 30, 2022. In total the aggregate principal amount of the Private Placement Notes issued in the Private Placement is $1,939,749.70, pursuant to which we received net proceeds of approximately $1,600,000. The Private Placement has terminated. The Private Placement Notes bear interest at 6% per annum and mature three years from the date of issuance. The principal amount due under the Private Placement Notes will be automatically converted into shares of our common stock upon the effectiveness of the registration statement of which this prospectus is a part, with all accrued interest under the Private Placement Notes waived upon conversion pursuant to the terms thereof. The Private Placement Notes are convertible into shares of common stock at a conversion price equal to the quotient obtained by dividing (i) the entire principal amount of the Private Placement Notes plus (if applicable) any accrued but unpaid interest under the Private Placement Notes by (ii) 50% of the initial offering price per share. The holders of the Private Placement Notes are prohibited from converting the Private Placement Notes if such conversion would result in a holder owning in excess of 4.99% of our outstanding common stock. The holders of the Private Placement Notes have agreed not to publicly sell or assign such common stock for a period of 180 days following completion of this offering. The holders of certain of the Private Placement Notes desire to be named as selling stockholders in the Resale Prospectus and, therefore, the terms of their lock-up agreements will be waived by Boustead Securities, LLC immediately prior to the listing of our common stock on a national securities exchange.

Boustead Securities, LLC, the sole book-running manager of this offering, acted as the placement agent for the Private Placement and received a commission equal to 7% of the gross proceeds received by us from the sale of the Private Placement Notes, a non-accountable expense allowance equal to 1% of the gross proceeds received

by us from the sale of the Private Placement Notes and five-year warrants to purchase shares of our common stock at a price equal to the conversion price of the Private Placement Notes in an amount equal to 7% of the shares of common stock underlying the Private Placement Notes.

Amendments to Certificate of Incorporation

On March 1, 2023, we filed a Certificate of Revival to reinstate our Amended and Restated Certificate of Incorporation and to change the name of our corporation to Origin Life Sciences, Inc.

On March 8, 2023, we filed a Certificate of Amendment to our Amended and Restated Certificate of Incorporation for purposes of providing for the conversion of all outstanding shares of special voting common stock to common stock effective immediately upon filing thereof. Upon filing of the Certificate of Amendment, all 7,819,000 outstanding shares of our special voting common stock were converted into 7,819,000 shares of our common stock.

On March 8, 2023, we filed a Certificate of Elimination of the Series A Preferred Stock, at which time the 30,000 shares that had been designated as Series A Preferred Stock were returned to the status of authorized but unissued shares of our preferred stock.

Revenue

To date, we have not generated any revenue from commercial sales of any of our product candidates.

Years Ended December 31, 2022 and 2021

The following table summarizes our results of operations for the fiscal years ended December 31, 2022 and 2021.

	Year Ended December 31,	
	2022	**2021**
Revenue	$ —	$ —
Operating expenses:		
Salaries and benefits (including share-based compensation of $32,799 and $1,969,049, respectively)	1,954,851	4,322,259
Consulting (including share-based compensation of $44,731 and $1,134,813, respectively)	521,297	1,624,709
Other general and administrative	403,407	433,929
Research and development	52,139	9,848
Amortization	93,023	93,023
Total operating expenses	3,027,717	6,483,768
Loss from operations	(3,024,717)	(6,483,768)
Other income and (expense):		
Forgiveness of paycheck protection program loan	183,737	201,250
Warrant expense	(5,886,390)	—
Interest expense	(112,981)	(50,123)
Total other income and (expense)	(5,815,635)	151,127
Loss before provision for income taxes	(8,840,351)	(6,332,641)
Provision for income taxes	—	—
NET LOSS	$ (8,840,351)	$ (6,332,641)
Net loss per share of common share – basic and diluted	$ (48.49)	$ (35.40)
Weighted average number of common shares outstanding during the period – basic and diluted	189,732	189,044

NET LOSS	$ (8,840,351)	$ (6,332,641)
Other comprehensive loss, net of tax:		
Market value adjustments for investments	(41,379)	(20,689)
Foreign currency translation adjustment	6,049	7,852
Total other comprehensive loss	(35,330)	(12,837)
COMPREHENSIVE LOSS	$ (8,875,681)	$ (6,345,478)

Salaries and benefits expenses

Salaries and benefits expenses were $1,954,851 for the fiscal year ended December 31, 2022 and $4,322,259 for the fiscal year ended December 31, 2021. The 55% reduction in salaries and benefits expenses was due primarily to the decrease in share-based compensation, from $1,969,049 for the fiscal year ended December 31, 2021 to $32,799 for the fiscal year ended December 31, 2022, due to a reduction in the number of options granted from 1,750 in 2021 to none in 2022. In addition, at a meeting of the Board of Directors held in January 2023, it was decided to reverse certain salary and bonus accruals from prior years amounting to approximately $495,000.

Consulting expenses

For the fiscal year ended December 31, 2022, consulting expenses were $521,297. For the fiscal year ended December 31, 2021, consulting expenses were $1,624,709. The 68% decrease in consulting expenses was due primarily to the reduction in share-based compensation, from $1,134,813 for the fiscal year ended December 31, 2021 to $44,731 for the fiscal year ended December 31, 2022, again due to a reduction in the number of options granted from 1,000 in 2021 to none in 2022.

Other general and administrative expenses

Other general and administrative expenses were $403,407 for the fiscal year ended December 31, 2022 and $433,929 for the fiscal year ended December 31, 2021. Other general and administrative expenses for the fiscal year ended December 31, 2022 included $207,883 for rent, utilities and office expenses, $180,000 for independent directors' fees, and $15,524 of other expenses. Other general and administrative expenses for the fiscal year ended December 31, 2021 included $214,615 for rent, utilities and office expenses, $180,000 for independent directors' fees; and $39,314 of other expenses.

Research and development expenses

Research and development expenses were $52,139 and $9,848 for the fiscal years ended December 31, 2022 and 2021, respectively. The 429% increase was due primarily to proof-of-concept trials carried out in 2022.

Warrant expense

Warrant expense of $5,886,390 for the fiscal year ended December 31, 2022 relates to 4,000 warrants issued as compensation for financial advisory services.

Liquidity and Capital Resources

Since inception, we have funded our operations primarily through private placements of our common stock, special voting common stock, preferred stock and the issuance of notes. As of December 31, 2022, we had cash, cash equivalents and restricted cash of $605,749 and an accumulated deficit of $86,321,534. As of December 31, 2021, we had cash, cash equivalents and restricted cash of $55,474 and an accumulated deficit of $77,481,183. Subsequent to December 31, 2021, we raised an additional $1,939,740.70 in gross proceeds pursuant to the sale of convertible notes in the Private Placement, which notes will automatically convert into shares of common stock at a conversion price equal to 50% of the price per share sold in this offering. Our current cash is not sufficient to fund our planned operations for at least the next twelve months. However, we believe that our existing cash, including the proceeds of the private placement offering, together with the proceeds of this offering will be sufficient to fund our operations for at least the next twelve months. We expect to require additional liquidity as we continue to execute our business strategy including commencing and completing our planned clinical trial, the cost of which we anticipate will be approximately $15 million. In addition, we are projecting that our operating losses and expected capital needs will exceed our existing cash balances and cash expected to be generated from operations for the foreseeable future. In order to meet our expected obligations and to fund completion of our clinical trial, we intend to raise additional funds through equity and debt financings. However, there can be no assurance that we will be able to complete any additional equity or debt financings on terms acceptable to the Company or at all. If we are unable to raise additional funding to meet our working capital

needs in the future, we will be forced to delay or reduce the scope of our research, delay or cancel our planned pivotal trial and/or limit or cease our operations. As a result, due to the uncertainty in our ability to meet our current operating and capital expenses, there is substantial doubt about our ability to continue as a going concern.

We will require a total of approximately $15 million to complete the reengineered design of the Ionojet technology and the submission of a new IDE for our pivotal trial in diabetic foot ulcers and we intend to use approximately $[__] million of the proceeds from this offering for such purposes. We estimate that we will require an additional $15 million to complete the pivotal clinical trial and the premarket application submission process, assuming the completion of the clinical trial and that the primary and/or secondary outcomes of the trial design are met, which includes general and administrative expenses anticipated to be incurred over the next two years. Therefore, we will require additional funding of approximately $[__] million to [___], which, although there can be no assurance, we intend to raise in subsequent offerings, both public and private, or by commercial arrangements.

Plan of Operation and Future Funding Requirements

We use our capital resources primarily to fund operating expenses, primarily the development of the Ionojet technology and general operating expenses. We plan to pursue regulatory approval for our initial indication, diabetic foot ulcers, by means of a pivotal trial and therefore we expect our research and development expenses to increase significantly after this offering.

At this time, due to the inherently unpredictable nature of research and new product adoption, we cannot reasonably estimate the costs we will incur and the timelines that will be required to complete development, obtain marketing approval and commercialize the Ionojet device or future product candidates, if at all. For the same reasons, if we are able to obtain marketing approval of the Ionojet, we are also unable to predict how quickly we will ramp-up revenue from the therapy produced by our Ionojet device, or whether, or when, if ever, we may achieve profitability from one or more products. Clinical and preclinical development timelines, the probability of success, and costs can differ materially from expectations. In addition, we cannot forecast which product candidates may be best developed and/or monetized through future collaborations, when such arrangements will be secured, if at all, and to what degree such arrangements would affect our development plans and capital requirements.

We have generated operating losses in each period since inception. We have incurred an accumulated deficit of $86,321,534 through December 31, 2022. We expect to incur additional losses in the future as we expand both our marketing and research and development activities. Based on our current plans, we expect that proceeds from the initial public offering will be sufficient to fund our operations for 12 months. We have based this estimate on assumptions that may prove to be wrong, however, and we could use our capital resources sooner than we expect.

The timing and amount of our operating expenditures will depend largely on:

- the timing and progress of the development of our Ionojet device;
- the timing and progress of the submission of our new IDE;
- the timing of the FDA's approval of our new IDE;
- the timing and progress of our pivotal clinical trial;
- the timing and progress of obtaining premarket approval for our Ionojet device;
- the timing and progress of marketing initiatives driving revenue;
- the timing and adoption rate of Ionojet, if approved;
- the payment terms and timing of commercial contracts entered into for manufacturing and distribution of our products to and through third-parties;
- the timing and progress of other preclinical and clinical development activities;
- the number and scope of preclinical and clinical programs we decide to pursue;
- the timing and amount of milestone payments we may receive under any future collaboration agreements;

- our ability to source new business opportunities through licenses and research and development programs and to establish new collaboration arrangements;

- the costs involved in prosecuting and enforcing patent and other intellectual property claims;
- the cost and timing of additional regulatory approvals; and
- our efforts to enhance operational systems and hire additional personnel, including personnel to support finance, sales, marketing, operations and development of our product candidates.

Until such time, if ever, as we can generate substantial revenue from our products, we expect to fund our operations and capital funding needs through equity and/or debt financings. We may also consider entering into collaboration arrangements or selectively partnering with third-parties for clinical development and commercialization. The sale of additional equity would result in additional dilution to our stockholders. The incurrence of additional debt would result in debt service obligations and the instruments governing such debt could provide for operating and financing covenants that would restrict our operations or our ability to incur additional indebtedness or pay dividends, among other items. If we raise additional funds through governmental funding, collaborations, strategic partnerships and alliances or marketing, distribution or licensing arrangements with third-parties, we may have to relinquish valuable rights to our technologies, future revenue streams, research programs or product candidates or grant licenses on terms that may not be favorable to us. If we are not able to secure adequate additional funding, we may be forced to make reductions in spending, extend payment terms with suppliers, liquidate assets where possible, and/or suspend or curtail planned programs. Any of these actions could materially and adversely affect our business, financial condition, results of operations and prospects.

Cash Flows

The following table summarizes our cash flows for the fiscal years ended December 31, 2022 and 2021:

	Year Ended December 31, 2022	Year Ended December 31, 2021
Cash (used in) operating activities	$ (1,358,087)	$ (917,881)
Cash provided by financing activities	$ 1,914,040	$ 729,517
Net increase (decrease) in cash, cash equivalents and restricted cash	$ 550,275	$ (188,353)
Cash, cash equivalents and restricted cash, beginning of year	$ 55,474	$ 243,827
Cash, cash equivalents and restricted cash, end of year	$ 605,749	$ 55,474
Less restricted cash	$ (51,370)	$ (50,966)
Cash and cash equivalents, end of year	$ 554,379	$ 4,508

Operating activities

During the fiscal year ended December 31, 2022, cash used in operating activities was $1,358,087, primarily resulting from our net loss of $8,840,351, offset by non-cash items, principally warrant expense of $5,886,390 and an increase in accrued expenses and accounts payable. During the fiscal year ended December 31, 2021, cash used in operating activities was $917,881, primarily resulting from our net loss of $6,332,641, offset by an increase in share-based compensation and accounts payable and accrued expenses.

Financing activities

During the fiscal year ended December 31, 2022, net cash provided by financing activities was $1,914,040, consisting primarily of $1,609,218 from the issuance of convertible notes and $329,241 from the issuance of common stock. During the fiscal year ended December 31, 2021, net cash provided by financing activities was $729,517, consisting of $545,790 of proceeds from the issuance of common stock and $183,737 of proceeds from a paycheck protection program loan, offset by repayment of a $10 third-party loan.

Contractual Obligations and Commitments

Convertible Promissory Notes

We issued a convertible promissory note, dated as of July 6, 2020, in the principal amount of $250,000 to LFEIF (the "LFEIF Note"), which bears interest at the fixed simple rate of 20% per annum. The LFEIF Note is convertible, at the direction of LFEIF, into shares of our Series B Preferred Stock, such number of shares to be calculated by dividing the

principal amount of the LFEIF Note, plus accrued interest, by $100, rounded to the nearest whole shares. If the LFEIF Note has not been converted to Series B Preferred Stock prior to the effective date of this offering, the principal amount plus accrued interest due under the LFEIF Note shall be due and payable thirty (30) days after the closing of this offering.

Between June 20, 2022 and December 21, 2022, we issued Private Placement Notes in the aggregate principal amount of $1,939,749.70. The Private Placement Notes bear interest at 6% per annum and mature three years from the date of issuance. The principal amount due under the Private Placement Notes will be automatically converted into shares of our common stock upon the effectiveness of the registration statement of which this prospectus is a part, with all accrued interest under the Private Placement Notes waived upon conversion pursuant to the terms thereof. The Private Placement Notes are convertible into shares of common stock at a conversion price equal to the quotient obtained by dividing (i) the entire principal amount of the Private Placement Notes plus (if applicable) any accrued but unpaid interest under the Private Placement Notes by (ii) 50% of the initial offering price per share.

Critical Accounting Estimates

This discussion and analysis of our financial condition and results of operations is based on our financial statements, which have been prepared in accordance with generally accepted accounting principles in the United States, or GAAP. The preparation of these financial statements requires us to make estimates and assumptions that affect the reported amounts of assets and liabilities and the disclosure of contingent assets and liabilities at the date of the financial statements, as well as the reported expenses incurred during the reporting periods. Our estimates are based on our historical experience and on various other factors that we believe are reasonable under the circumstances, that results of which form the basis for making judgments about the carrying value of assets and liabilities that are not readily apparent from other sources. Actual results may differ from these estimated under different assumption or conditions. While our significant accounting policies are described in more detail in the notes to our financial statements included elsewhere in the prospectus, we believe that the following accounting policies are critical to understanding our historical and future performance, as these policies relate to the more significant areas involving management's judgements and estimates.

Impairment of Long-lived Assets

Long lived assets consist primarily of furniture and fixtures, medical equipment, computers, investments and intangible assets and are reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount of an asset may not be recoverable. If circumstances require that a long-lived asset be tested for possible impairment, we compare the undiscounted cash flows expected to be generated by the asset to the carrying amount of the asset. If the carrying amount of the long-lived asset is not recoverable on an undiscounted cash flow basis, impairment is recognized to the extent that the carrying amount exceeds its fair value. We determine fair value using the income approach based on the present value of expected future cash flows or other appropriate measures of estimated fair value. Our cash flow assumptions consider historical and forecasted revenue and operating costs and other relevant factors. Since inception, we have not recorded impairment charges on long-lived assets.

Foreign Currency

Our reporting (functional) currency is the US Dollar ("USD"). Transactions completed in any currency other than the reporting currency are translated to USD at the exchange rate at the date of transaction and are included in earnings. Net foreign currency transaction losses were $5,591 and nil for the years ended December 31, 2022 and 2021, respectively. The functional currency of Origin UK is the British Pound. During 2022 and 2021, Origin UK expenses have been translated to USD at the average monthly rates for the periods concerned and assets and liabilities at the rate prevailing at the balance sheet date. Differences arising from the translation of Origin UK accounts to USD have been charged to accumulated other comprehensive income ("AOCI") in shareholders' equity.

Revenue Recognition

We will generate future revenue from contracts with customers. Revenue will be recognized when the performance obligation is satisfied by transferring control of the promised services to the customer in an amount that reflects the consideration expected to be receive in exchange for those services. We will determine revenue recognition through the following steps:

1. Identification of the contract with the customer
2. Satisfaction of the performance obligations in the contract

3. Determination of the transaction price
4. Allocation of the transaction price to the performance obligations in the contract
5. Recognition of revenue when, or as, the performance obligation is satisfied

Revenue will be recognized when the services are provided to the customer, provided that collection of the resulting receivable is reasonably assured. Management will periodically evaluate the collectability of the receivables and record any allowances necessary.

Research and Development Expenses

Research and development expenses consist primarily of engineering, product development, clinical and regulatory affairs, consulting services, materials, depreciation and other costs associated with products and technologies in development. These expenses include non-employee compensation, supplies, related travel expenses, and facility costs. Clinical expenses include clinical trial design, clinical site reimbursement, data management and travel expenses, and the cost of manufacturing products for clinical trials.

Common Stock Valuation and Share-based Compensation

We provide incentives for employees, consultants and members of the board of directors in the form of options and warrants to acquire our stock. Certain options and warrants vest solely based on continuous employment, while others are also conditional on certain non-market performance conditions being met.

For employees and directors, we are required to determine and recognize as compensation expense the fair value of these equity incentive awards over the requisite service period in the consolidated statements of operations. In addition, share-based compensation expense is based on awards expected to vest and therefore the amount of expense is reduced for estimated forfeitures, if any. We use the straight-line method for expense attribution over the requisite service and performance period. For awards with non-market performance conditions, expense is attributed on a straight-line basis from the date the awards have been considered authorized to the expected date of achievement of the milestone, but only once milestone achievement is considered probable. We established a Remuneration Committee of the Board of Directors in September 2014, which will be replaced by the Compensation Committee upon effectiveness of this offering. Subsequently, we adopted a policy that even if achievement is considered probable, formal approval by the Remuneration Committee is required before performance-based awards are regarded as authorized.

For non-employees, the date at which the fair value of equity incentive awards is measured is equal to the earlier of: 1) the date at which a commitment for performance by the counterparty to earn the equity instrument is reached; or 2) the date at which the counterparty's performance is complete. We recognize share-based compensation expense for the fair value of the vested portion of non-employee awards in the consolidated statement of operations. The fair value of options granted to non-employees is remeasured as the options vest.

The fair value of each option award is estimated on the date of grant using the Black-Scholes option pricing model using the following weighted-average assumptions:

	2021
Dividend yield	—
Expected volatility	130.4%
Risk-free interest rate	0.24% – 0.53%
Expected life (in years)	3.5

The expected term for the options granted reflects the simplified method, which is an average of the contractual term of the options and its vesting period. Expected volatility is based on the historical weekly volatility of comparable public companies calculated over a period reflecting the expected term of the options up to each respective grant date.

Non-cash compensation expense relating to stock options was calculated by using the Black-Scholes option pricing model, amortizing the value calculated over the vesting period and applying a zero-forfeiture percentage as estimated by the Company's management, using historical information.

JOBS Act

The JOBS Act permits an emerging growth company such as us to take advantage of an extended transition period to comply with new or revised accounting standards applicable to public companies until those standards would otherwise apply to private companies. We have elected to avail ourselves of the extended transition period for complying with new or revised financial accounting standards.

We will remain an emerging growth company until the earliest of (i) the last day of our first fiscal year in which we have total annual gross revenues of $1.235 billion or more; (ii) the date on which we are deemed to be a "large accelerated filer" under the rules of the SEC with at least $700.0 million of outstanding equity securities held by non-affiliates; (iii) the date on which we have issued more than $1.0 billion in non-convertible debt securities during the previous three years; or (iv) the last day of our fiscal year following the fifth anniversary of the date of the completion of this offering.

Quantitative and Qualitative Disclosures About Market Risk

As a smaller reporting company, we are not required to provide disclosure regarding quantitative and qualitative market risk.

Recent Accounting Pronouncements

For a description of recent accounting pronouncements, see Note 2 of the notes to our audited financial statements for the year ended December 31, 2022, included elsewhere in this prospectus.

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BUSINESS

Overview

We are a clinical-stage biotechnology company that has been developing a proprietary patented high-energy plasma device that generates NO in the form of a plasma/NO stream and delivers it to targeted locations of the body. The stream potentially can be used for various therapeutic purposes, including as an anti-infective, anti-inflammatory and tissue-regenerative therapy for chronic wounds and SSTIs. The FDA previously determined that our product will be a Class III medical device reviewed under a premarket approval ("PMA") application with the FDA's CDRH consulting with the CDER as necessary. The cornerstone of the plasma/NO therapy is our patented delivery platform named "Ionojet" which allows us to turn atmospheric air into a plasma/NO stream that has been shown in investigations: (i) to be non-toxic, (ii) to generate NO activity up to 3 cm below the skin, and (iii) to stimulate sustained biological activity in tissue for up to an hour after delivery of the therapy. To date, our clinical activities have been focused on the clinical trials described below, including our dose-ranging feasibility clinical trial for the treatment of diabetic foot ulcers completed in 2018 using the plasma NO stream generated from our Ionojet, and the preparation for our planned pivotal clinical trial, including finalization of the prototype of the Ionojet that we intend to use in our pivotal trial.

Prior to commencing our pivotal trial in diabetic foot ulcers, we will need to submit, and receive approval of, a new IDE filing, permitting the use of the reengineered design of the Ionojet in a new clinical study. We anticipate that we will be able to submit the new IDE approximately six months after consummation of this offering and that it will take approximately three months after submission of the IDE to receive approval thereof from the FDA. After receiving approval of the new IDE, we expect that it will take approximately three months to commence the pivotal trial, which will require IRB approval of the study, identification and initiation of clinical trial sites and patient recruitment activities. We do not believe that the modifications to the device or the requirement to submit, and receive approval of, a new IDE has had, or will have, an effect on our expected timeline for commencement of the pivotal trial.

We plan to seek premarket approval of the Ionojet from the FDA as a Class III medical device, assuming we are able to complete our pivotal trial and the data are favorable. If we are unable to complete our pivotal trial or, upon completion of the trial, the outcomes of the trial design are not met, we may not be able to seek premarket approval of the Ionojet. We expect to submit our PMA application in the second quarter of 2024 and the FDA's review of the PMA can range from 6 to 15 months depending upon whether the FDA raises significant issues during its interactive review. If we receive premarket approval from the FDA of our technology for the treatment of diabetic foot ulcers, our goal is to market our technology to hospitals, wound clinics and private podiatrist offices to treat diabetic foot ulcers and to generate revenue by charging for the device on a usage basis. We do not intend to generate revenue from the sale of the Ionojet device, of which we intend to retain ownership. In addition to wound healing, we believe that our technology has application in many additional indications including dermatology, infection control, podiatry, dentistry, pain and inflammation and cosmetics as well as potentially in certain respiratory infections, both viral and bacterial, oral infections, dental indications, ophthalmic and facial applications and in topical indications, although to date the only pre-clinical and clinical studies we have conducted with our Ionojet device have been with regard to wound healing, and our pivotal clinical trial will focus solely on diabetic foot ulcers.

The plasma/NO stream generated by our device has the potential to promote healing in various ways as a result of the effect that NO has on immune system regulation, blood vessel regulation, tissue regeneration and defending against infection. In particular, NO represents a potential wound therapeutic agent due to its ability to regulate inflammation, increase blood flow, decrease blood pressure, eradicate bacterial infections, and promote the growth and activity of immune cells. Since the plasma/NO stream has been shown in investigations to generate NO activity up to 3 cm below the skin, we believe that the delivery of the NO via plasma energy allows the NO to pass through the skin and locally saturate the tissue and that this saturation enhances the NO pathways already present in the human body.

We believe that our therapy is novel in that it is intended to simultaneously both disinfect and promote the healing of infected wounds. We also are not aware of any currently approved technology to deliver site-specific and

therapeutically relevant concentrations of NO to skin and soft tissue, as well as to joints and muscles, leading to significantly increased levels of NO as much as three centimeters beneath the skin. We believe we are the furthest along in the clinical

development of a therapy of this kind. We are continuing to explore and effect functional and aesthetic improvements to the device to meet the expectations of the U.S. and overseas markets prior to commercial deployment and intend to use a portion of the proceeds of this offering to implement such improvements to our Ionojet technology and prepare for the submission of a new IDE for our pivotal trial in diabetic foot ulcers.

We are a clinical-stage biopharmaceutical company with a limited operating history. We also have a history of operating losses and expect to continue to incur substantial losses for the foreseeable future. Our independent registered public accounting firm has expressed substantial doubt about our ability to continue as a going concern. Our cash and the proceeds of this offering will only fund our operations for a limited time. The proceeds from this offering will be insufficient to allow us to fully fund completion of our pivotal clinical trial and the premarket approval process, which we estimate will cost $30 million in total. We will need to raise additional capital to commence and complete the pivotal clinical trial.

Recent Developments

Private Placement

On June 20, 2022, we commenced the Private Placement of up to $5,000,000 of convertible promissory notes, pursuant to which we issued: (i) convertible promissory notes in the principal aggregate amount of $450,000 on June 30, 2022; (ii) convertible promissory notes in the principal aggregate amount of $60,000 on August 16, 2022; (iii) convertible promissory notes in the principal aggregate amount of $725,000 on September 23, 2022; (iv) convertible promissory notes in the principal aggregate amount of $315,000 on October 25, 2022; (v) convertible promissory notes in the principal aggregate amount of $288,000 on November 30, 2022; and (vi) a convertible promissory note in the principal amount of $101,749.70 on December 21, 2022 (the Private Placement Notes). The promissory note issued in December 2022 was pursuant to a Subscription Agreement that was executed on or before November 30, 2022. In total the aggregate principal amount of the Private Placement Notes issued in the Private Placement is $1,939,749.70, pursuant to which we received net proceeds of approximately $1,600,000. The Private Placement has terminated. The Private Placement Notes bear interest at 6% per annum and mature three years from the date of issuance. The principal amount due under the Private Placement Notes will be automatically converted into shares of our common stock upon the effectiveness of the registration statement of which this prospectus is a part, with all accrued interest under the Private Placement Notes waived upon conversion pursuant to the terms thereof. The Private Placement Notes are convertible into shares of common stock at a conversion price equal to the quotient obtained by dividing (i) the entire principal amount of the Private Placement Notes plus (if applicable) any accrued but unpaid interest under the Private Placement Notes by (ii) 50% of the initial offering price per share. The holders of the Private Placement Notes are prohibited from converting the Private Placement Notes if such conversion would result in a holder owning in excess of 4.99% of our outstanding common stock. The holders of the Private Placement Notes have agreed not to publicly sell or assign such common stock for a period of 180 days following completion of this offering. The holders of certain of the Private Placement Notes desire to be named as selling stockholders in the Resale Prospectus and, therefore, the terms of their lock-up agreements will be waived by Boustead Securities, LLC immediately prior to the listing of our common stock on a national securities exchange.

Boustead Securities, LLC, the sole book-running manager of this offering, acted as the placement agent for the Private Placement and received a success fee equal to 7% of the gross proceeds received by us from the sale of the Private Placement Notes, a non-accountable expense allowance equal to 1% of the gross proceeds received by us from the sale of the Private Placement Notes and five-year warrants to purchase shares of our common stock at a price equal to the conversion price of the Private Placement Notes in an amount equal to 7% of the shares of common stock underlying the Private Placement Notes.

Amendments to Certificate of Incorporation

On March 1, 2023, we filed a Certificate of Revival to reinstate our Amended and Restated Certificate of Incorporation and to change the name of our corporation to Origin Life Sciences, Inc.

On March 8, 2023, we filed a Certificate of Amendment to our Amended and Restated Certificate of Incorporation for purposes of providing for the conversion of all outstanding shares of special voting common

stock to common stock effective immediately upon filing thereof. Upon filing of the Certificate of Amendment, all 7,819,000 outstanding shares of our special voting common stock were converted into 7,819,000 shares of our common stock.

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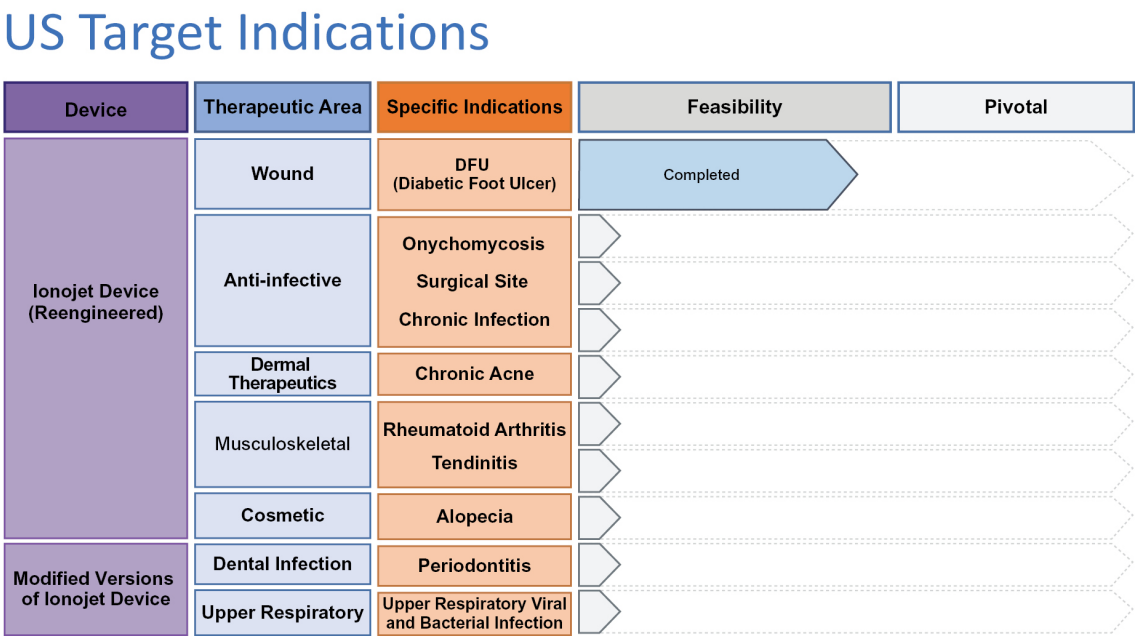
On March 8, 2023, we filed a Certificate of Elimination of the Series A Preferred Stock, at which time the 30,000 shares that had been designated as Series A Preferred Stock were returned to the status of authorized but unissued shares of our preferred stock.

Target Indications

The following is a summary of the targeted indications for which we intend to explore the treatment of using the therapy generated by the Ionojet device, as well as the stage of clinical development for each indication to date. It is anticipated that for all of the indications set forth below our device will generate a plasma/NO stream and deliver it to the patient; however for wounds, anti-infective, dermal therapeutics, burns and musculoskeletal, and cosmetics treatments we plan to use our reengineered Ionojet. For the treatment of dental infections and upper respiratory infections, adaptations to the reengineered Ionojet will be required.



To market additional indications, we will need to obtain a new premarket authorization from the FDA specific to the indication. At this time, we are unable to determine the device class or regulatory pathway for each indication. The type of FDA authorization required for each indication — i.e., 510(k) clearance, de novo classification, a PMA, or a supplement to our original PMA — will depend on factors such as the risk classification of the new indication and the classification of previously authorized technologies. We anticipate that the pilot studies and studies for safety that we have conducted to date for the Ionojet device will be applicable to each of the indications in the chart above. Therefore, subject to the availability of additional financing, we intend to commence feasibility studies to evaluate the effectiveness of the plasma/NO stream for the treatment of each of these indications, assuming we receive FDA approval of our Ionojet device for the treatment of diabetic foot ulcers.

Nitric Oxide

Although at extremely high concentrations NO is a toxic gas, it functions as an important signaling molecule, acting as a messenger molecule, transmitting signals to cells in the cardiovascular, nervous and immune systems. Due to its chemical composition, NO is much more reactive than other signaling molecules and its small size allows it to diffuse through cell membranes and walls to perform various signaling functions in the human body systems.

The main site of the molecule's synthesis is the inner layer of blood vessels, where it diffuses to underlying smooth muscle cells and causes them to relax. This relaxation causes the walls of blood vessels to dilate, which in turn increases blood flow through the vessels and decreases blood pressure. NO's role in dilating blood vessels makes it an important controller of blood pressure. NO is also produced by neurons and is used by the nervous

system as a neurotransmitter to regulate various bodily functions including, digestion, blood flow, memory and vision. In the immune system, NO is produced by macrophages, which are a type of white blood cell that engulfs bacteria and other foreign particles that have invaded the body. The NO released by macrophages kills bacteria, other parasites, and tumor cells by disrupting their metabolism.

NO is critical in defending against infection. According to an article entitled "The potential of nitric oxide releasing therapies as antimicrobial agents," published by the National Center for Biotechnology Information on May 1, 2012, depending on its concentration, NO exerts antimicrobial effects in two ways. At low concentrations, NO acts as a signaling molecule that promotes the growth and activity of immune cells. At high concentrations, NO covalently binds DNA, proteins and lipids, thereby inhibiting or killing target pathogens. NO is an integral and highly conserved part of the host immune response. Few bacteria are able to escape the antimicrobial effect of NO.

According to an article published in the journal, *Biomedicines*, on August 29, 2022 entitled, "Enhancement of Nitric Oxide Bioavailability by Modulation of Cutaneous Nitric Oxide Stores," NO is a key molecule in dermal wound healing and tissue regeneration. There are many reports that state NO represents a promising method to promote wound healing by enhancing cell proliferation, collagen deposition, and angiogenic activities improving granulation tissue formation.

For reference, NO has already been approved by the FDA, and the FDA has therefore determined that it is safe for treatment in humans, albeit in the treatment of a different indication and in a different manner of delivery. It is the active substance in an FDA-approved drug for the treatment, by means of inhalation, of neonates with hypoxemic respiratory failure associated with pulmonary hypertension. According to the FDA's prescribing information for INOmax, an inhaled pulmonary vasodilator manufactured by Mallinckrodt plc, when inhaled, it appears to increase the partial pressure of arterial oxygen by dilating the pulmonary vessels and regulating blood flow in the lungs. Vessel dilation and blood regulation are two of the properties of NO that we believe aid in the healing of diabetic foot ulcers when treated with our Ionojet device.

Chronic Wounds

NO represents a potential wound therapeutic agent due to its ability to regulate inflammation and eradicate bacterial infections. Normal wound healing consists of four interconnected and overlapping phases: hemostasis, inflammation, proliferation, and tissue remodeling, with each phase involving different cell populations. Not all wounds proceed according to a normal healing timeline. Some injuries result in the development of chronic wounds, wherein injured tissue enters a state of pathologic inflammation that results in protracted and incomplete healing. In acute wounds, the four stages of healing typically take place within a month, and the healed tissue closely resembles pre-wound tissue. However, the chronic wound healing timeline can extend for months or even stall in the inflammation phase indefinitely. Systemic factors or diseases that induce tissue hypoxia and/or leave a patient vulnerable to infection often lead to chronic wounds. Conditions that correspond with poor wound healing outcomes include malnutrition, senescence, stress, obesity, alcoholism, cancer, immunodeficiency, and ischemia. However, diabetes is the disease that contributes to the greatest number of diagnosed chronic wounds.

Diabetic Foot Ulcers

Diabetic foot ulcers are a common but serious complication of diabetes mellitus (DM), a metabolic disorder characterized by prolonged hyperglycemia. Either there is insufficient insulin being manufactured or there is tissue insensitivity to insulin. According to the CDC, approximately 37.3 million Americans, or about 1 in 10, are currently living with diabetes. In the last 20 years, the number of adults with diabetes has more than doubled. Prolonged hyperglycemia results in several complications, including neuropathy, vascular disease, foot ulcers, high risk of sepsis, poor wound healing, and limb amputations. Diabetic neuropathy often leads to the development of diabetic foot ulcers, where a thickened wound at the balls of the feet forms regardless of the duration. Foot ulcer is the most common, but serious and costly complication of DM.

The CDC has reported that in 2016 there were 4.9 lower-extremity amputations per 1,000 adults with diagnosed diabetes and that 130,000 diabetes-related hospital discharges involved a lower-extremity amputation. Further, over their lifetime, 12% of people with diabetes develop diabetic foot ulcers. In the United States, the cost of diabetic foot ulcer treatments in annual direct health care costs is $9 to $13 billion, according to an article published in the International Wound Journal in 2020. Because of the serious medical risks and socioeconomic burden of diabetic foot ulcers, there is a critical unmet need for effective diabetic foot ulcer treatment. This need is not adequately addressed by standard-of-care (SOC) wound therapies, which have been demonstrated to yield 12-week closure in less than 50% of patients.

We believe that our therapy, if approved by the FDA, will treat this critical unmet need for an effective treatment of diabetic foot ulcers, by simultaneously both disinfecting and promoting the healing of infected wounds, and delivering site-specific and therapeutically relevant concentrations of NO to the wounds. Our clinical trials to date have demonstrated that our therapy is well-tolerated.

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Our Clinical Trials

Completed Clinical Trials

To date, our technology has been studied in (i) numerous animal studies for safety that were completed between 2013 and 2016, (ii) a single center study of 40 patients in 2013 to treat chronic wounds; (iii) a clinical pilot study in 10 patients to treat diabetic foot ulcers completed in 2016; and (iv) a feasibility clinical trial that was commenced in 2017 and completed in 2018 for the treatment of patients with diabetic foot ulcers, which is described in more detail below.

Non-Controlled Observational Study

A single-center study of approximately 40 patients was an observer initiated, open, non-controlled observational, IRB approved study. The study was initiated by Dr. Treadwell to evaluate the safety aspects of the use of the plasma/NO therapy, generated using the predecessor Russian device to the Ionojet (the Plason), in the promotion of wound-healing and control of infection in the treatment of various chronic wounds, including diabetic foot ulcers. The patients who participated in the study were patients who sought treatment from Dr. Treadwell for a chronic wound that failed to heal using other available treatment options. Origin's only role in the study was to provide the Plason device to Dr. Treadwell. No payments were made to Origin, to Dr. Treadwell or to the patients. As the design of this study was observational and retrospective, the study did not have a protocol, measurable study objectives, or require submission of a final report. The study also did not include patients who received a SoC treatment as a comparison. Upon completion of the study, 100% of patients achieved greater than 50% wound closure after 8 weeks of therapy and 84% had resolution of wound pain, although wound closure and resolution of wound pain were not objectives of the study. There were no device-related adverse events, as determined by Dr. Treadwell.

Clinical Pilot Study

The trial of ten patients with diabetic foot ulcers was a randomized, single-blind, controlled study to evaluate the efficacy and safety of our plasma/NO therapy in subjects with a diabetic foot ulcer who have had an inadequate response to standard of care. The study was designed to be a 10-week trial for 80 patients randomized to receive either sham therapy or plasma/NO treatment. The device used in the study was a modified version of the Plason device, but was not the Ionojet device. The primary objective of this study was to estimate the efficacy of plasma/NO therapy in subjects with an active diabetic foot ulcer. Secondary study objectives were to evaluate the safety and tolerability of treatment of plasma/NO therapy administered one time per week over 10 weeks and to evaluate the effect of therapy on wound pain as measured by a standard pain scale. The primary effectiveness outcome measure of this study was percent change in total wound size using dimensional measurements of the wound. Secondary outcome measures were clearance of wound infection based on clinical observation and wound biopsy cultures and wound pain measured by a standard wound pain scale completed at each visit prior to treatment or any study procedures. For an initial safety evaluation, pursuant to the study protocol, the first ten patients randomized were limited to wound size of 7 cm2 or less and their wounds were assessed 2-4 days after each treatment session. Following completion of the final assessment in the first 10 patients, data was submitted to the FDA for review before the study was to be opened for enrollment of the remaining patients. After submission of the initial safety evaluation data to the FDA, we determined that we wanted to make certain modifications to the device and to conduct a dose-ranging study rather than to continue with enrollment of the remaining patients under this study protocol. There were no device or procedure-related adverse events reported in the safety study, patients' pain ratings and wound size decreased from baseline at the end of treatment, and plasma-generated NO therapy was well-tolerated in patients. The safety study did not evaluate the study objectives of the plasma/NO therapy as compared to SoC.

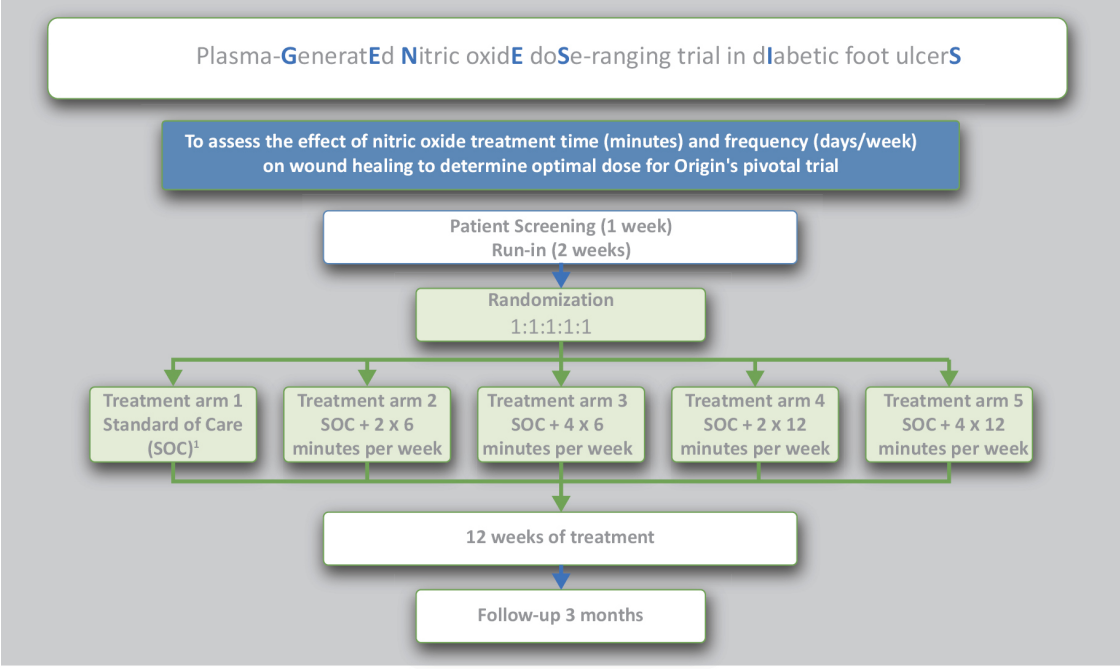
Feasibility Clinical Trial (GENESIS)

In January 2017, we commenced a dose-ranging, feasibility clinical trial, referred to as "GENESIS," based on an IDE filing by us which was approved by FDA in November 2016. The purpose of the GENESIS trial was to evaluate whether the device is safe and well-tolerated, to determine a dose or doses of treatment for use in the pivotal trial and to identify desirable design modifications for the Ionojet. The trial was designed to evaluate the effect of the time and frequency of NO treatment, over a twelve-week treatment period, on wound healing in up

to 100 adult patients with an active diabetic foot ulcer who have an inadequate response to SoC in 15 study sites in the United States. Patients were evaluated for general inclusion/exclusion criteria, including that the wound be greater than or equal to 1 cm^2 in size and less than or equal to 16 cm^2 in size. Those patients meeting the general inclusion/exclusion criteria completed

a run-in period where they received SoC treatment alone for two weeks. Those patients whose wounds were less than 30% closed at the end of the two-week run-in period as compared to the screening visit were considered to have an inadequate response to SoC treatment alone and were included in the study.

The study evaluated four doses of NO treatment (ranging from six minutes twice per week to 12 minutes four times per week) and SoC. As is common in dose-ranging studies, the GENESIS study was not powered to demonstrate statistical differences between groups, but rather provided information that will be used to develop final safety and effectiveness promising hypotheses for a pivotal trial of our plasma/NO therapy. The primary effectiveness measures were wound closure rate (in cm^2 of epithelium coverage per week) and wound closure percentage. All patients in the trial received SoC treatment, which principally comprised bandaging, debridement (removal of dead, damaged or infected tissue) and pressure reduction (so-called offloading). The control arm received SoC only, while the four active arms received SoC plus treatment with our NO therapy at different durations and frequencies. After 83 patients had been randomized, an interim analysis consisting of a total of 63 subjects, 53 of whom completed the twelve-week treatment, was performed. At that time, we determined that we had sufficient information to end enrollment early because we believed the interim results demonstrated the optimal dose of treatment that we should use in the pivotal trial. Feedback from the clinicians at the various clinical trial sites also revealed certain modifications that should be made to the device. Accordingly, we closed the trial without enrolling the full 100 patients permitted under our IDE.



We commissioned an independent interim analysis of the GENESIS study. As mentioned above, this interim analysis was conducted on 63 subjects, 53 of whom completed treatment. During the interim analysis, it was observed by the analyst, who then reported such observation to us, that a majority of the patients at one clinical trial site had a small baseline ulcer size of less than 2 cm^2, while the average baseline ulcer size for the 53 patients was 3.19 cm^2, and that 88% of the patients had wound closure by the end of the treatment period. In this site, there were five patients in the SoC group, all of whom achieved wound closure by the end of the treatment period, while none of the patients in the SoC group achieved wound closure by the end of the treatment period at any of the other clinical trial sites. The independent analyst concluded, and we agreed, that the clinical trial site reported results that were abnormal and warranted exclusion from the analysis, likely because the site did not follow the inclusion/exclusion criteria for the clinical study. This conclusion was made, in part, because in clinical trials involving diabetic foot ulcers, the characteristic healing in the SoC group is approximately 30-35%, which is a stark contrast to the 100% rate of wound closure in the SoC group at this particular site. Therefore, the data were analyzed with and without the 17 subjects from this site.

In the analysis excluding patients from this trial site (n=36), we observed evidence both of healing and of rate of healing at the best-performing dose of 12 minute treatments 4 times per week, with all active arms outperforming the control arm on median percent of wound size reduction at 12 weeks. The best-performing arm of 12 minute treatments

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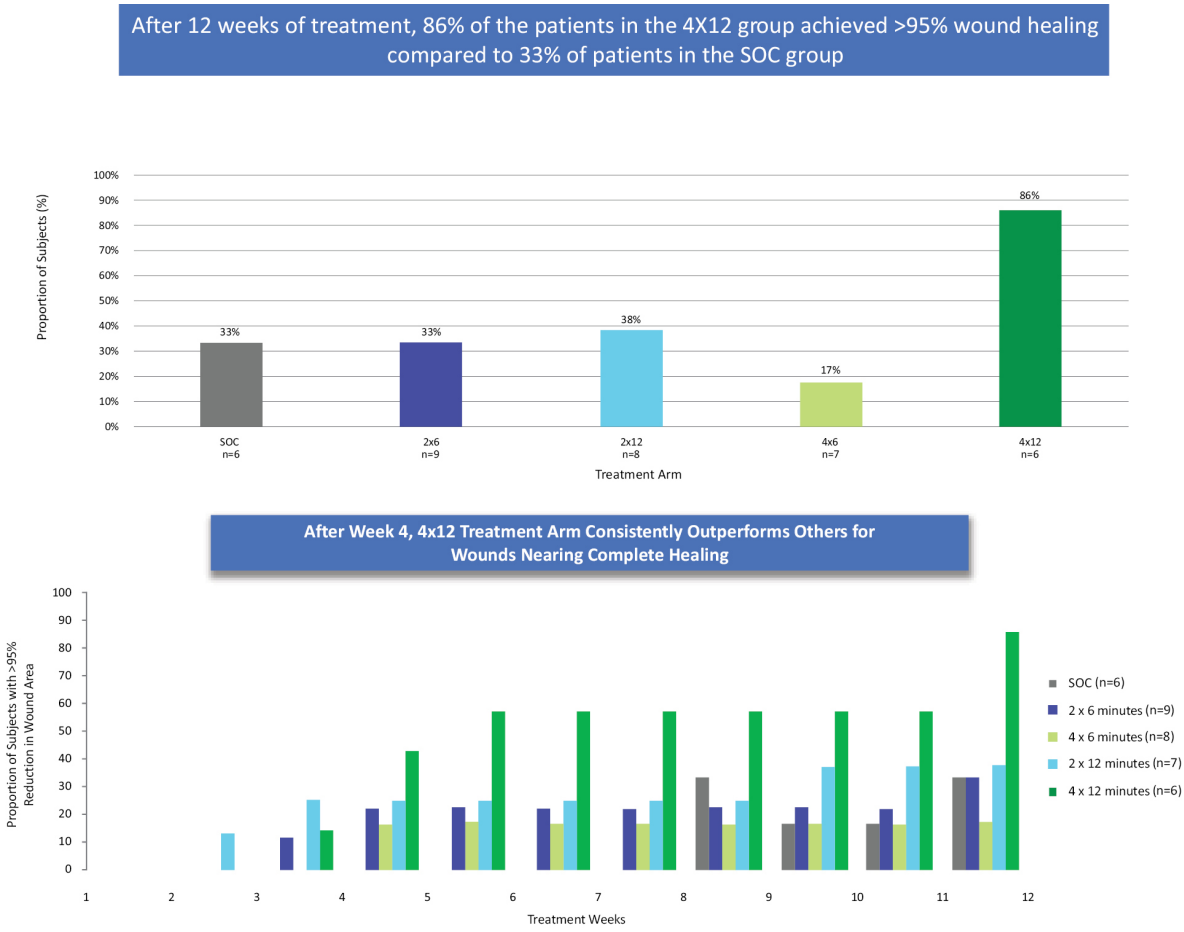
4 times per week delivered a 100% median wound-size reduction at 12 weeks compared to 49% in the control arm and wound closure greater than 95% in 86% of patients at 12 weeks compared to 33% in the control arm. Further, in the best-performing arm of 12 minute treatments 4 times per week, 71% of patients achieved full wound closure after 12 weeks. Although the study was not statistically powered to evaluate the differences between groups, we have concluded that this analysis supports moving forward to a pivotal trial. Equally important, more than 1,000 patient treatments were administered during the trial and there were no recorded therapy-related adverse events.

The following charts depict certain results for the 36 patients (out of the 83 randomized) who, at the time of the interim analysis, had completed treatment and were not at the trial site with abnormal results.



These results, as well as the results previously seen in our clinician-initiated trial in the U.S. and clinical data from multiple trials of the predecessor device in Russia, suggest that treating wounds with NO can promote healing. In addition, animal and human studies demonstrate a prolonged biological response after cessation of active treatment.

After the completion of our dose-ranging GENESIS trial, we prepared a final Clinical Study Report that evaluated a mITT population, which was comprised of all 83 patients who were randomized, including patients that did not complete treatment as well as those patients at the clinical trial site with abnormal results. In the mITT population, the median wound closure percentage at 12 weeks ranged from 57.1% to 98.7% for the various NO treatment arms and was 98.4% for the SoC arm. The wound closure rate ranged from 0.1 cm^2/week to 0.2 cm^2/week for the NO arms and was 0.2 cm^2/week for the SoC arm. Lastly, the percentage of subjects with healed ulcers ranged from 24% to 38% for the NO arms and 38% for the SoC arm. Because these results included subjects who did not complete the study or were at the clinical trial site with abnormal results, we believe that the results of the interim analysis described above (n=36) are more appropriate for determining whether to move forward with the pivotal trial and selecting the most promising dose arms to study. We submitted the

Clinical Study Report on the dose-ranging GENESIS trial, without enrolling the full 100 patients permitted under our IDE, to the FDA during the fourth quarter of 2019. The FDA acknowledged completion of the feasibility investigation and submission of our final report in 2020.

Planned Pivotal Clinical Trial

We have been working on preparations for our planned pivotal trial in diabetic foot ulcers, upon which FDA approval will primarily be based. These preparations fall into three areas: (i) modifications to the Ionojet technology, (ii) medical and (iii) administrative. The following is a summary:

(i) One of the purposes of a feasibility trial is to determine what modifications need to be made to a device prior to a pivotal trial, since the pivotal trial should be carried out with the form of the device that will be marketed post-approval. From clinician feedback and our own observations, we were able to identify several desirable changes that we believe will enhance commercial adoption, and we have been working on the reengineered design of our device in our own facility. We have made what we believe are significant improvements to our Ionojet technology, all of which we are seeking to protect with new U.S. and international patent filings. When these improvements have been completed, which is expected in mid-2023 and subject to the availability of adequate funding and FDA approval of a new IDE for our pivotal trial in diabetic foot ulcers for the device with the modifications, we will look to commence the production of devices for our planned pivotal trial.

(ii) Medically, we have started work on the study design and protocol for our pivotal trial. There are several important decisions to be made about the design of the study, including the dose or doses to be studied. Subject to FDA approval of our protocol, we intend to employ an adaptive study design for the pivotal trial, under which our targeted delta (or superiority over SoC) will not be finalized until we have seen the early results from the treatment arms.

(iii) Administratively, we expect to begin identifying clinical sites and investigators for the trial and assembling the appropriate advisory and review panels in early 2023. The timing of the pivotal trial is dependent on the availability of adequate financing and regulatory approval to conduct the study.

Market Opportunity

Current Indications

Our initial objective is to seek regulatory approvals for our therapy to address the unmet needs of patients suffering from chronic wounds and SSTIs. As discussed, the observational, IRB approved study conducted by Dr. Treadwell in 2013 evaluated the promotion of wound-healing and control of infection in the treatment of various chronic wounds. According to an article published by Fortune Business Insights entitled Chronic Wound Care Market Size, Share & COVID-19 Impact Analysis (March 2022), the chronic wound care market was estimated at $11.61 billion in 2021, of which an estimated $4.4 billion was attributable to North America. The global chronic wound care market is projected to grow from $12.36 billion in 2022 to $19.52 billion by 2029, exhibiting a CAGR of 6.7% during the forecast period. Diabetic foot ulcers comprise 43.1% of the global chronic wound care market, as reported by the same article.

In the United States, the treatment market size for SSTIs, also referred to as acute bacterial skin and skin structure infections (ABSSSI) by the FDA, was valued at $7.3 billion in 2018 and is projected to reach $14.9 billion by 2026, exhibiting a CAGR of 9.5%, as reported by Fortune Business Insights in an article entitled Acute Bacterial Skin and Skin Structure Infections (ABSSSI) Treatment Market Size, Share and Industry Analysis (July 2019).

We initially plan to focus on the diabetic foot ulcer treatment market. According to a report published by GlobeNewswire on July 20, 2022, the global diabetic foot ulcer treatment market was valued at $8.6 billion in 2021 and is projected to reach $14.8 billion by 2030. The North American diabetic foot ulcer treatment market reached $3.8 billion in 2021, contributing to the highest market share that year. In due course we may also look to secure regulatory approval and market our therapy for chronic wounds outside the United States in partnership with local organizations. In the meantime, and in parallel with our pivotal trial on diabetic foot ulcers, we plan, subject to available capital resources, to broaden our approach into other therapeutic areas and, prior to that, to conduct confirmatory pre-clinical studies into blood-flow and infection-control.

The cost of the therapy to the patient is expected to be based upon the dose administered, as measured by frequency and duration of administration. Based upon the current costs associated with advanced wound therapy, we estimate that the reimbursed cost of the therapy for diabetic foot ulcers administered using our Ionojet technology will be approximately $10,000 per patient.

Our strategy is to undertake proof-of-concept work in other wound-healing indications as well as non-wound-healing areas. For the latter, we are looking at target indications in other treatment areas (known as verticals) such as dermatology, infection control, podiatry, dentistry, pain and inflammation and cosmetics, as we believe NO may have clinical relevance to all these verticals. By demonstrating our clinical relevance outside diabetic foot ulcers, we believe we can add greater shareholder value in a shorter timeframe. Selection of target indications will be made on the basis of such factors as market size, regulatory constraint, estimate of likely success and time to completion.

Initial proof-of-concept studies have been carried out under IRB approval in two important indications — infected pacemaker and defibrillator implant wounds (n=7) and infected orthopaedic implant wounds (n=8). Both studies demonstrated that the therapy generated by our medical device was well-tolerated and each was the subject of a poster presented at conferences of the Symposium on Advanced Wound Care, one of the world's leading wound care education organizations, in San Antonio, Texas in 2021 and in Las Vegas, Nevada in 2022. Each study has been conducted by Dr. Treadwell as an observer initiated, open, non-controlled observational, IRB approved study to examine the effect of plasma/NO in treating patients with infected implanted hardware or cardiac pacemakers. In the pacemaker and defibrillator study, seven patients were referred to Dr. Treadwell with infected pacemaker pockets. All seven patients completed the protocol (clearance of the infection) with no reported adverse effects and clearing of the infections without removal of the implant. This trial remains open for additional qualified patients. In the orthopaedic implant study, eight patients were seen by Dr. Treadwell because of infected implanted orthopaedic hardware. All eight patients completed the protocol (clearance of the infection) with no reported adverse effects and clearing of the infections without removal of the hardware. This trial remains open for additional qualified patients. The smaller (orthopaedic) wounds healed with an average of ten weekly treatments while the larger (neurosurgical) wounds healed with an average of 22 weekly treatments. Additional studies are planned in onychomycosis (toenail fungus), radiation burns and sickle cell ulcers, subject to available funding.

Future Indications

In addition, we intend to conduct clinical trials and seek regulatory approval for the use of the plasma/NO therapy generated by our device in the treatment of the following indications, each of which would increase our market opportunity, and, collectively, would increase our market opportunity even more. Although we have not conducted clinical trials for any of the following indications, we anticipate that we will be able to rely upon the safety and early feasibility studies that have been conducted to date using the Ionojet device for our clinical studies in the following indications, assuming that the Ionojet device is approved by the FDA for the treatment of diabetic foot ulcers.

Onychomycosis is a fungal infection that occurs in the fingernails or toenails. According to Verified Market Research, the U.S. onychomycosis market size was valued $2.9 billion in 2021 and is projected to reach $5.5 billion by 2023, growing at a CAGR of 8.6% from 2022 to 2030.

The global surgical site infection control market was valued at $4.2 billion in 2021 and is expected to reach a value of $5.51 billion by 2027, exhibiting a CAGR of 4.63% from 2021 to 2027, as reported by Research and Markets. It is estimated that 35% of the market's growth will originate from North America during the forecasted period.

The United States acne treatment market was valued at $4.27 billion in 2021 and is projected to grow to $6.12 billion by 2029, exhibiting a CAGR of 4.5%, according to Fortune Business Insights. Rheumatoid arthritis is an autoimmune and inflammatory disease, which means that your immune system attacks healthy cells in your body by mistake, causing inflammation in the affected parts of the body. Joints in the hands, wrists and knees are commonly affected by rheumatoid arthritis. An article by Persistence Market Research reports that the global revenue from the rheumatoid arthritis treatment market is valued at $42.9 billion in 2022, with the global market expected to grow at a CAGR of 5.7% to reach a value of approximately $79.1 billion by the end of 2033. The United States market accounts for approximately 39.8% (or approximately $17 billion) of the global market.

According to a report by Grandview Research, the global market size for tendonitis, a condition when a tendon is inflamed, was valued at $199.6 billion in 2021 and is projected to grow at a CAGR of 2.7% from 2022 to 2030. In 2021, North America dominated the global market, accounting for the largest share of 43.4% of the overall revenue, or approximately $86.6 billion.

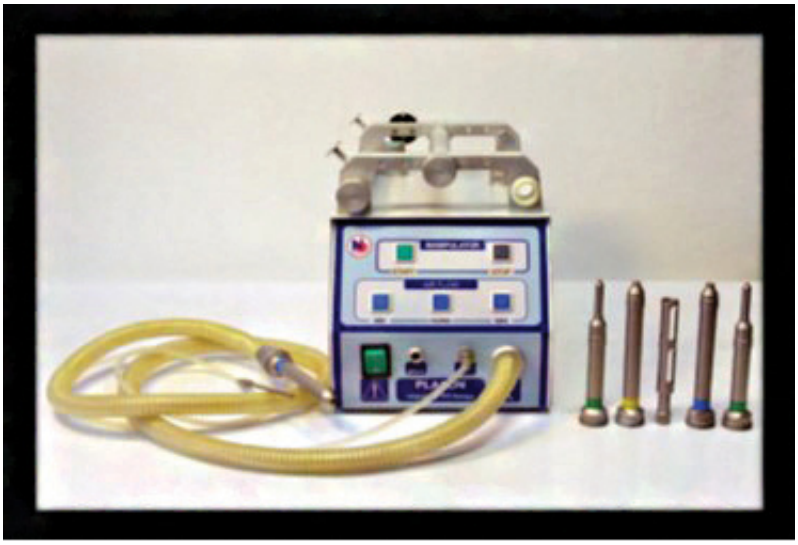
Alopecia is a disease that develops when the body attacks its own hair follicles (where hair grows from), which can cause hair loss anywhere on the body, although it often causes hair loss on the scalp. The global alopecia market revenue was valued at $8.379 billion in 2021, with more than 36.4% being attributed to North America, according to a report by Acumen Research and Consulting. The global alopecia market is expected to grow at a CAGR of 8.2% from 2022 to 2030, achieving a market size of $16.76 billion by 2030.

Periodontal diseases are mainly the result of infections and inflammation of the gums and bone that surround and support the teeth. In its early stage, called gingivitis, the gums can become swollen and red, and they may bleed. In its more serious form, called periodontitis, the gums can pull away from the tooth, bone can be lost, and the teeth may loosen or even fall out. Transparency Market Research reported that the global periodontal treatment market size was valued at $7.6 billion in 2021 and North America held the major market share in 2021.

The United States respiratory tract infection therapeutic market size was estimated at $9 billion in 2022 and is expected to reach $9.9 billion in 2023, projecting a growth at a CAGR of 8.42% to reach $17 billion by 2030, according to an article by Report Linker. Estimated annual costs for viral upper respiratory infections in the United States, not related to influenza, exceeds $22 billion.

Our Ionojet Technology

The Ionojet plasma/NO delivery mechanism derives from a Russian design known as the Plason, which has its origins in four Nobel Prize-winning discoveries, most notably the 1998 Nobel Prize for Medicine and the 1970 Nobel Prize for Physics. Russian-built Plason plasma devices are currently in clinical use in Russia and Europe, where they have received a CE Mark in the past. There have been Plason units placed in service in Europe and Russia since 2002, where the therapy has demonstrated significant effectiveness, both in clinical studies and in medical practice. Our device has been significantly re-engineered and updated from the Plason with higher performance metrics in order to produce a reliable and consistent plasma/NO stream and to address regulatory requirements and “Western” medical expectations. These developments have resulted in the accumulation of important knowhow and intellectual property. We are not aware of any other method of delivering NO in clinically meaningful quantities beneath the surface of the skin.



The original plasma/NO delivery platform, as currently marketed in Europe under the name “Plason” (not an Origin product)

We have acquired the U.S. patent for the delivery of plasma/NO (U.S. Patent # 7,498,000) from the Russian inventor of the Plason (“Plason IP”), pursuant to an Exclusive Option Exercising Agreement dated April 28, 2014. In consideration for exercising the option to purchase the Plason IP, we paid the sum of $1,000,000. We also agreed to pay an annual percentage payment of our audited net sales of devices falling within the scope of protection provided by the Plason IP and within the territory covered by the Plason IP as follows: (i) 5% in 2015;

(ii) 4.5% in 2016; (iii) 4% in 2017; and (iv) 3.5% from 2018 through 2024. While the Ionojet device falls within the scope of protection of the Plason IP, we do not anticipate having to make any such royalty payments due to the fact that we do not intend to sell the Ionojet devices.

Prototype of the U.S. version of our therapy delivery platform that was used in our dose-ranging clinical trial and in our proof-of-concept studies. THIS DEVICE IS CURRENTLY UNDER DEVELOPMENT. THE PROTOTYPE DEPICTED ABOVE IS IN THE PROCSES OF BEING REENGINEERED AND, THEREFORE, IS NOT THE DEVICE WE INTEND TO USE IN OUR PIVOTAL CLINICAL TRIAL.

Additional Uses of Our Ionojet

Inhalation and COVID-19

Ionojet is configured to deliver NO topically to the outside of the body. The range of indications that can potentially be treated in this way is so wide that, although we had long envisaged the potential delivery of NO to treat infections in the oropharynx (i.e., the area behind the oral cavity), sinuses and upper respiratory tract at some time in the future, the commercial and therapeutic opportunities from topical application made inhalation a secondary objective. However, the onset of the COVID-19 pandemic encouraged us to bring our respiratory plans forward. If our plasma-generated NO is able to penetrate the epithelium in a respiratory setting as it does topically, we hypothesized that its anti-infective properties might have an effect against the SARS-CoV-2 virus (i.e., the virus that causes COVID-19).

We believe that our plasma-generated NO, if indeed it is effective in treating coronaviruses, is most likely to do so in their early stage, when the virus is still in the upper respiratory tract and is accessible to inhaled agents. For our plasma-generated NO to be inhaled, we developed a proprietary interface with our existing plasma-generating engine that allows the key metrics to be modulated, so that it delivers NO in a manner that we believe will be well-tolerated for inhalation, but we do not know whether the treatment will be effective. Regardless of its effectiveness against COVID-19, we believe that this system could have value in respiratory infections, both viral and bacterial, oral infections, dental indications, ophthalmic and facial applications and in topical indications where the modified stream may be better tolerated and allow greater comfort to the patient.

We had planned to conduct a five-person safety trial followed by an 80-person randomized controlled trial using our technology, incorporating its new inhalation interface, for the treatment of COVID-19 in newly hospitalized patients. However, shortly after our submission of a preliminary application to FDA for this purpose, it was announced that the FDA and/or EMA would soon be issuing approval for vaccines specifically designed to protect against COVID-19. This led to a general loss of industry focus on treating the virus and to a concentration on prevention. In this context, and given our limited financial resources, we suspended our activities in this area. While our focus is currently on completing our pivotal clinical trial in diabetic foot ulcers and seeking premarket approval of the Ionojet from the FDA as a Class III medical device in the treatment of diabetic foot ulcers, we intend to pursue the above-mentioned opportunities in other upper respiratory tract infections at a future date.

Our Strategy

Our goal is to become the leading provider of topical NO treatments using our proprietary Ionojet device for various therapeutic purposes, including as an anti-infective, anti-inflammatory and tissue-regenerative therapy for chronic wounds and SSTIs.

Key elements of our strategy are as follows:

- *Complete the final prototype of our Ionojet device.* Based upon clinician feedback and the results of our feasibility trial, we were able to identify several desirable changes that we believe will enhance commercial adoption of the Ionojet, and we have been working on the reengineered design of our device in our own facility. We have made what we believe are significant improvements to our Ionojet technology, all of which we are seeking to protect with new U.S. and international patent filings, and which will require FDA approval of an IDE to initiate our pivotal clinical trial.

- *Pivotal trial.* Complete a pivotal clinical trial in diabetic foot ulcers and seek premarket approval of Ionojet from the FDA as a Class III medical device, utilizing a portion of the net proceeds of this offering and securing additional funding. The pivotal trial data, if favorable, will be the primary basis for FDA approval. Conversely, if the data are not favorable, then FDA approval is unlikely.

- *Create a commercial infrastructure for our product candidates.* If the Ionojet is approved as a Class III medical device, we intend to hire and train a focused and dedicated team to launch the marketing of our product to hospitals, wound clinics and private podiatrist offices for the treatment of diabetic foot ulcers. We also intend to use a trained and dedicated team, and/or to enter into marketing partnerships, to launch the marketing of our Ionojet technology for any additional indications that may receive regulatory approval and any of our future product candidates.

- *Expand indications for use.* We believe that our technology has application in many other indications in wound healing as well as in dermatology, infection control, podiatry, dentistry, pain and inflammation and cosmetics. We believe that our technology could also have value in respiratory infections, both viral and bacterial, oral infections, dental indications, ophthalmic and facial applications and in topical indications where the modified stream allows greater comfort to the patient.

- *Strategic Partnerships.* We are exploring the possibility of entering into strategic partnering arrangements to provide further financing for our pivotal clinical trial and for formal clinical studies into other pipeline indications, to supplement the proceeds of this offering.

Barriers to Entry

Currently, the barrier to reliable NO therapies has been the absence of effective delivery mechanisms. Presently, administration of NO is achieved in two ways: (1) drugs that affect the regulation of endogenous NO on a systemic level and (2) devices that attempt to deliver external NO to specific sites. Both of the existing approaches suffer from drawbacks. It is nearly impossible to target systemic delivery with any specificity and thus results both directly and indirectly in many untoward side effects such as hypotension, headache, abnormal vision, flushing and muscle pain, while devices that deliver localized external treatment are often unable to achieve sufficient concentration or penetration to be biologically effective. We believe that our technology will overcome these barriers with its patent-protected plasma/NO delivery platform.

We believe that our therapy will address three key medical concerns:

- the problem of treating patients whose medical conditions are uncontrolled by current SoC;
- the need to provide an alternative to more expensive drug therapies that has low side effects and is cost-effective; and
- the increasing problem of antibiotic resistance.

We believe a potentially critical commercial advantage for our therapy in the United States will be the return of therapeutic control, and thus the transfer of economic reward, from the pharmaceutical company to the clinician. Physicians will be reimbursed for administering the procedure as opposed to gaining no economic advantage from writing a drug prescription. As a result, treatments using our therapy become interactive processes between the patient and caregiver, allowing for more tailored treatment, which we believe should result in better outcomes and lower costs.

Competition

While we believe that our proprietary patented high-energy plasma device that generates NO in the form of a plasma/NO stream is the first technology of its kind in the United States market, we believe other companies developing different forms of NO therapies to treat diabetic foot ulcers to be our closest competitors. One such competitor, SaNOtize Research and Development Corp., based in Vancouver, Canada, is recruiting patients for a Phase I/II efficacy study to evaluate its NO releasing footbath as a treatment for diabetic foot ulcer. Edixomed Ltd., a United Kingdom company, is developing a NO generating gel wound dressing to treat diabetic foot ulcers.

Manufacturing

We do not have a manufacturing infrastructure and do not intend to develop one. We intend to contract with third-parties for the production of Ionojet and any future product candidates and have relationships in place for this purpose.

In the event it is necessary or advisable to acquire supplies from an alternative supplier, we might not be able to obtain them on commercially reasonable terms, if at all. It could also require significant time and expense to redesign our manufacturing processes to work with another company. If approved by the FDA, we anticipate that we will be able to enter into agreements with suppliers to manufacture and distribute the Ionojet and our therapies on commercially reasonable terms.

Sales and Marketing

If our Ionojet device or any of our future product candidates are approved by the FDA or other regulatory authorities, we intend to commercialize them by leveraging our existing commercial infrastructure and hiring and training a small and dedicated marketing team to launch our products in the U.S. We intend to market our Ionojet technology primarily to hospitals, wound clinics and private podiatrist offices. The initial focus of the small internal marketing team we hire will be in the eleven states which currently account for approximately 60% of all diabetic foot ulcers in the United States. In addition, we anticipate entering into a variety of distribution agreements and commercial partnerships in those territories where we do not establish an internal marketing team, including if we expand outside of the U.S. We expect that our specialized commercial team would be comprised of experienced marketing professionals.

Intellectual Property

We rely on a combination of patent, trademark, copyright and trade secret laws and confidentiality, non-disclosure and invention assignment agreements and contractual clauses to protect our intellectual property rights. We consider the protection of our technology to be material to our business. Our success will significantly depend upon our ability to obtain and maintain patent and other intellectual property and proprietary protection for our products, including market and data exclusivity granted by regulatory agencies, as well as patent and other intellectual property and proprietary protection for our novel biological discoveries and other important technology inventions and know-how. In addition to patents, we rely upon unpatented trade secrets, know-

how, and continuing technological innovation to develop and maintain our competitive position. We protect our proprietary information, in part, using confidentiality agreements with our commercial partners, collaborators, employees and consultants and invention assignment agreements with our employees. We also have confidentiality agreements or invention assignment agreements with our commercial

partners and selected consultants. Despite these measures, any of our intellectual property and proprietary rights could be challenged, invalidated, circumvented, infringed or misappropriated, or such intellectual property and proprietary rights may not be sufficient to permit us to take advantage of current market trends or otherwise to provide competitive advantages. For more information, please see "Risk Factors — Risks Related to Our Intellectual Property."

We have three issued and two pending U.S. patents directed to IonoJet and the generation of NO. Our three issued patents relate to our NO generator, which is our core technology, our systemic NO applicator and our mobile console. The patent related to our NO generator will expire in 2025, while our patents on the NO applicator and mobile console are due to expire in 2030. Additionally, we have one patent and one pending patent application in the U.S. and four patents and three pending patent applications outside of the U.S. directed to our Ionojet technology. If our patents expire, we may not be able to adequately protect our intellectual property, and competitors may be able to erode or negate any competitive advantage we may have, which could harm our business and ability to achieve profitability. We have also been granted trademark registration in the U.S. for Ionojet.

In addition, we have acquired the U.S. patent for the delivery of plasma/NO from the Russian inventor of the Plason, the design of which the Ionojet plasma/NO delivery mechanism is derived from, which expires in 2025. The Plason has its origins in four Nobel Prize-winning discoveries, most notably the 1998 Nobel Prize for Medicine and the 1970 Nobel Prize for Physics. Russian-built Plason plasma devices are currently in clinical use in Russia and Europe, where they have received a CE Mark (which is the European Union's mandatory conformity marking for regulating goods sold within the European Economic Area since 1985 and represents a manufacturer's declaration that the product complies with the European Union's New Approach Directives) in the past. There have been Plason units placed in service in Europe and Russia since 2002, where the therapy has demonstrated significant effectiveness, both in clinical studies and in medical practice. Our device has been significantly re-engineered and updated from the Plason with higher performance metrics in order to produce a reliable and consistent plasma/NO stream and to address regulatory requirements and "Western" medical expectations. These developments have resulted in the accumulation of important knowhow and intellectual property.

However, in the U.S., the term of a patent covering a product that cannot be commercialized without FDA approval, including medical devices and drug products, may be eligible for a patent term extension under the Hatch-Waxman Act as compensation for the loss of patent term during the FDA regulatory review process. The period of extension may be up to five years beyond the expiration of the patent, but cannot extend the remaining term of a patent beyond a total of 14 years from the date of product approval. Only one patent among those eligible for an extension may be extended. For patents that might expire during the application phase, the patent owner may request an interim patent extension. An interim patent extension increases the patent term by one year and may be renewed up to four times. For each interim patent extension granted, the post-approval patent extension is reduced by one year. The director of the United States Patent and Trademark Office must determine that approval of the drug covered by the patent for which a patent extension is being sought is likely. Provisions are available in certain other jurisdictions to extend the term of a patent that covers an approved drug or to provide data exclusivity. For example, data exclusivity in the EU as a medicinal product may be available for 10 years from approval and in Japan for eight years from approval. It is possible that issued U.S. patents covering Ionojet may be entitled to patent term extensions. We have applied for, and received, an extension of the patent term for the patent protecting our NO generator, which patent now expires in 2035. If our product candidates receive FDA approval, we intend to apply for any further patent term extensions that may be available to us to extend the term of patents that cover the approved product candidates. We also intend to seek patent term extensions in any jurisdictions where they are available, however, there is no guarantee that the applicable authorities, including the FDA, will agree with our assessment of whether such extensions should be granted, and even if granted, the length of such extensions.

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The following is a list of our U.S. and foreign patents, all of which are owned by us:

Family 1	Title:	Jurisdiction/ Country	Patent Type	Status	Application #	Date Filed	Patent #	Grant Date	Expiration Year
Family 1	METHODS FOR FORMING A DISCRETE STREAM OF MATTER IN A PLASMA STATE	Switzerland	Utility	Issued	18178016.4	Oct 30, 2014	3398618	Dec 9, 2020	2034
Family 1	METHODS FOR FORMING A DISCRETE STREAM OF MATTER IN A PLASMA STATE	Germany	Utility	Issued	18178016.4	Oct 30, 2014	602014073332.8	Dec 9, 2020	2034
Family 1	METHODS FOR FORMING A DISCRETE STREAM OF MATTER IN A PLASMA STATE	European Patent Office	Utility	Issued	18178016.4	Oct 30, 2014	3398618	Dec 9, 2020	2034
Family 1	METHODS FOR FORMING A DISCRETE STREAM OF MATTER IN A PLASMA STATE	France	Utility	Issued	18178016.4	Oct 30, 2014	3398618	Dec 9, 2020	2034
Family 1	METHODS FOR FORMING A DISCRETE STREAM OF MATTER IN A PLASMA STATE	United Kingdom	Utility	Issued	18178016.4	Oct 30, 2014	3398618	Dec 9, 2020	2034
Family 1	METHODS FOR FORMING A DISCRETE STREAM OF MATTER IN A PLASMA STATE	Ireland	Utility	Issued	18178016.4	Oct 30, 2014	3398618	Dec 9, 2020	2034
Family 1	METHODS FOR FORMING A DISCRETE STREAM OF MATTER IN A PLASMA STATE	Italy	Utility	Issued	18178016.4	Oct 30, 2014	502021000019940	Dec 9, 2020	2034

Family 1	METHODS FOR FORMING A DISCRETE STREAM OF MATTER IN A PLASMA STATE	Netherlands	Utility	Issued	18178016.4	Oct 30, 2014	3398618	Dec 9, 2020	2034
Family 2	APPARATUS FOR APPLYING NITRIC OXIDE TO A TREATMENT SITE	Belgium	Utility	Issued	15815265.2	Jun 23, 2015	3160902	Nov 27, 2019	2035
Family 2	APPARATUS FOR APPLYING NITRIC OXIDE TO A TREATMENT SITE	Switzerland	Utility	Issued	15815265.2	Jun 23, 2015	3160902	Nov 27, 2019	2035
Family 2	APPARATUS FOR APPLYING NITRIC OXIDE TO A TREATMENT SITE	Germany	Utility	Issued	15815265.2	Jun 23, 2015	602015042630.4	Nov 27, 2019	2035
Family 2	APPARATUS FOR APPLYING NITRIC OXIDE TO A TREATMENT SITE	Spain	Utility	Issued	15815265.2	Jun 23, 2015	3160902	Nov 27, 2019	2035
Family 2	APPARATUS FOR APPLYING NITRIC OXIDE TO A TREATMENT SITE	France	Utility	Issued	15815265.2	Jun 23, 2015	3160902	Nov 27, 2019	2035
Family 2	APPARATUS FOR APPLYING NITRIC OXIDE TO A TREATMENT SITE	United Kingdom	Utility	Issued	15815265.2	Jun 23, 2015	3160902	Nov 27, 2019	2035
Family 2	APPARATUS FOR APPLYING NITRIC OXIDE TO A	Ireland	Utility	Issued	15815265.2	Jun 23, 2015	3160902	Nov 27, 2019	2035

	TREATMENT SITE								
Family 2	APPARATUS FOR APPLYING NITRIC OXIDE TO A TREATMENT SITE	Italy	Utility	Issued	15815265.2	Jun 23, 2015	502020000018316	Nov 27, 2019	2035
Family 2	APPARATUS FOR APPLYING NITRIC OXIDE TO A TREATMENT SITE	Netherlands	Utility	Issued	15815265.2	Jun 23, 2015	3160902	Nov 27, 2019	2035
Family 2	APPARATUS FOR APPLYING NITRIC OXIDE TO A TREATMENT SITE	United States of America	Utility	Issued	15/321,520	Jun 23, 2015	10406375	Sep 10, 2019	2035
Family 2	APPARATUS FOR APPLYING NITRIC OXIDE TO A TREATMENT SITE	China	Utility	Issued	201580035725.7	Jun 23, 2015	ZL201580035725.7	May 1, 2020	2035
Family 2	APPARATUS FOR APPLYING NITRIC OXIDE TO A TREATMENT SITE	European Patent Office	Utility	Issued	15815265.2	Jun 23, 2015	3160902	Nov 27, 2019	2035

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Family 1	Title:	Jurisdiction/ Country	Patent Type	Status	Application #	Date Filed	Patent #	Grant Date	Expiration Year
Family 2	APPARATUS FOR APPLYING NITRIC OXIDE TO A TREATMENT SITE	India	Utility	Issued	201617043936	Jun 23, 2015	357489	Feb 2, 2021	2035
Family 2	APPARATUS FOR APPLYING NITRIC OXIDE TO A TREATMENT SITE	Republic of Korea	Utility	Issued	10-2016-7036112	Jun 23, 2015	10-2079852	Feb 14, 2020	2035
Family 2	APPARATUS FOR APPLYING NITRIC OXIDE TO A TREATMENT SITE	Mexico	Utility	Issued	MX/a/2016/017143	Jun 23, 2015	376374	Oct 22, 2020	2035
Family 3	Applicator	United States of America	Design	Issued	29/495,119	Jun 27, 2014	D771243	Nov 8, 2016	2030
Family 4	MOBILE CONSOLE	United States of America	Design	Issued	29/495,121	Jun 27, 2014	D751209	Mar 8, 2016	2030
Family 5	METHOD AND DEVICE FOR FORMING AN NO-CONTAINING GAS FLOW FOR AFFECTING A BIOLOGIC...	United States of America	Utility	Issued	10/467,247	Oct 29, 2003	7498000	Mar 3, 2009	2025
Family 6	A DEVICE AND METHOD FOR PRODUCING HIGH-CONCENTRATION, LOW-TEMPERATURE NITRIC OXI...	Brazil	Utility	Pending	112019012098-0	Dec 13, 2017			2038
Family 6	DEVICE AND METHOD FOR PRODUCING HIGH-CONCENTRATION, LOW-TEMPERATURE NITRIC OXIDE	United States of America	Utility	Published	17/106,311	Nov 30, 2020			2038
Family 6	A DEVICE AND METHOD FOR PRODUCING HIGH-CONCENTRATION, LOW-	Canada	Utility	Issued	3,046,325	Dec 13, 2017	3046325	May 4, 2021	2038

	TEMPERATURE NITRIC OXI...								
Family 6	A DEVICE AND METHOD FOR PRODUCING HIGH-CONCENTRATION, LOW-TEMPERATURE NITRIC OXI...	China	Utility	Issued	201780077790.5	Dec 13, 2017	ZL201780077790.5	Sep 23, 2022	2038
Family 6	A DEVICE AND METHOD FOR PRODUCING HIGH-CONCENTRATION, LOW-TEMPERATURE NITRIC OXI...	European Patent Office	Utility	Pending	17881840.7	Dec 13, 2017			2038
Family 6	A DEVICE AND METHOD FOR PRODUCING HIGH-CONCENTRATION, LOW-TEMPERATURE NITRIC OXI...	India	Utility	Pending	201917023724	Dec 13, 2017			2038
Family 6	A DEVICE FOR PRODUCING HIGH-CONCENTRATION, LOW-TEMPERATURE NITRIC OXIDE	Japan	Utility	Issued	2019-531714	Dec 13, 2017	6788744	Nov 4, 2020	2038
Family 6	A DEVICE AND METHOD FOR PRODUCING HIGH-CONCENTRATION, LOW-TEMPERATURE NITRIC OXI...	Republic of Korea	Utility	Issued	10-2019-7020038	Dec 13, 2017	10-2279358	Jul 14, 2021	2038
Family 6	DEVICE AND METHOD FOR PRODUCING HIGH-CONCENTRATION, LOW-TEMPERATURE NITRIC OXIDE	United States of America	Utility	Issued	15/841,228	Dec 13, 2017	10850250	Dec 1, 2020	2038
Family 7	SYSTEM AND METHOD FOR TREATMENT WITH NITRIC	United States of America	Utility	Pending	17/913,409	Mar 18, 2021			2041

	OXIDE						
Family 7	SYSTEM AND METHOD FOR TREATMENT WITH NITRIC OXIDE	Canada	Utility	Pending	3,174,415	Mar 18, 2021	2041

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Family 1	Title:	Jurisdiction/ Country	Patent Type	Status	Application #	Date Filed	Patent #	Grant Date	Expiration Year
Family 7	SYSTEM AND METHOD FOR TREATMENT WITH NITRIC OXIDE	China	Utility	Pending	202180032484.6	Mar 18, 2021			2041
Family 7	SYSTEM AND METHOD FOR TREATMENT WITH NITRIC OXIDE	European Patent Office	Utility	Pending	21775344.1	Mar 18, 2021			2041
Family 7	SYSTEM AND METHOD FOR TREATMENT WITH NITRIC OXIDE	India	Utility	Pending	202217058637	Mar 18, 2021			2041
Family 7	SYSTEM AND METHOD FOR TREATMENT WITH NITRIC OXIDE	Republic of Korea	Utility	Pending	10-2022-7036775	Mar 18, 2021			2041
Family 8	METHODS OF USING A PLASMA-GENERATED STREAM OF NO-CONTAINING GAS FOR TREATMENT OF...	PCT	Utility	Pending	PCT/US22/31027	May 26, 2022			2042

Government Regulation

Medical devices are subject to extensive and rigorous regulation by the FDA and other federal, state and local authorities, such as the Federal Trade Commission ("FTC"), as well as foreign regulatory authorities.

United States

In the U.S., medical devices are subject to regulation by the FDA under the FDCA and its implementing regulations. The FDCA and regulations govern, among other things, the design, manufacture, storage, recordkeeping, approval, labeling, promotion, post-approval monitoring and reporting, distribution and import and export of medical devices. Failure to comply with applicable requirements may subject a device and/or its manufacturer to a variety of administrative and judicial sanctions, such as FDA refusal to grant requests for 510(k) clearance, *de novo* classification, or premarket approval of new products or modified products, issuance of warning letters or untitled letters, mandatory product recalls, import detentions, civil monetary penalties, and/or judicial sanctions, such as product seizures, injunctions, and criminal prosecution.

The FDCA classifies medical devices into one of three categories based on the risks associated with the device and the level of control necessary to provide reasonable assurance of safety and effectiveness. Class I devices are deemed to be low risk and are subject only to the general regulatory controls. Class II devices are moderate risk.

They are subject to general controls and may also be subject to special controls. Class III devices are generally the highest risk devices. They are required to obtain premarket approval and comply with postmarket conditions of approval in addition to general regulatory controls.

Generally, establishments that design and/or manufacture devices are required to register their establishments with the FDA. They also must provide the FDA with a list of the devices that they design and/or manufacture at their facilities.

The FDA enforces its requirements by market surveillance and periodic visits, both announced and unannounced, to inspect or re-inspect equipment, facilities, laboratories and processes to confirm regulatory compliance. These inspections may include the manufacturing facilities of subcontractors. Following an inspection, the FDA may issue a report, known as a Form 483, listing instances where the manufacturer has failed to comply with applicable regulations and/or procedures or, if observed violations are sufficiently severe and urgent, a warning letter. If the manufacturer does not adequately respond to a Form 483 or warning letter, the FDA make take enforcement action against the manufacturer or impose other sanctions or consequences.

Pre-Market Authorization and Notification

While most Class I and some Class II devices may be marketed without prior FDA authorization, most other medical devices can be legally sold within the U.S. only if the FDA has: (i) approved a pre-market approval ("PMA") application prior to marketing, generally applicable to most Class III devices; (ii) cleared the device in response to a premarket notification, or 510(k) submission, generally applicable to Class I and II devices; or (iii) authorized the device to

be marketed through the *de novo* classification process, generally applicable for novel Class I or II devices. PMA applications, 510(k) premarket notifications, and *de novo* requests require payment of substantial user fees that are modified each fiscal year.

In the United States, we plan to seek pre-market approval of Ionojet from the FDA as a Class III device, assuming the completion of our pivotal trial and that the primary and/or secondary outcomes of the trial design are met.

510(k) Premarket Notification

Product marketing in the U.S. for most Class II and a limited number of Class I devices typically follows the 510(k) premarket notification pathway. To obtain 510(k) clearance, a manufacturer must submit a premarket notification demonstrating that the proposed device is substantially equivalent to a legally marketed device, referred to as the "predicate device." A predicate device may be a previously 510(k)-cleared device placed in Class I or Class II via a finding of substantial equivalence to a lawfully marketed Class I or Class II device, or a Class III device that was in commercial distribution before May 28, 1976 and for which the FDA has not yet called for PMA applications, or a product previously placed in Class I or Class II through the *de novo* classification process. A finding of "substantial equivalence" means the FDA must conclude that the proposed device has the same intended use as a predicate device, and it either has the same technological characteristics, or it has different technological characteristics but submitted information (potentially including clinical data) shows it is as safe and effective and does not raise different questions of safety and effectiveness as compared to the predicate device.

The FDA has a user fee goal to apply no more than 90 calendar review days to 510(k) submissions. During the process, the FDA may issue an Additional Information request, which stops the clock. The applicant has no more than 180 days to respond (after which the submission is automatically terminated). Therefore, the total review time could be up to a maximum of 270 days.

After a device receives 510(k) clearance, any modification that could significantly affect its safety or effectiveness, or that would constitute a major change in its intended use, requires a new 510(k) clearance or could require a PMA approval or *de novo* classification. The FDA requires each manufacturer to make this determination in the first instance, but the FDA can review any such decision. If the FDA disagrees with a manufacturer's decision not to seek a new 510(k) clearance for the modified device, the agency may retroactively require the manufacturer to seek 510(k) clearance, *de novo* classification, or PMA approval. The FDA also can require the manufacturer to cease marketing and/or recall the modified device until 510(k) clearance or PMA approval is obtained.

De Novo Classification

Devices of a new type that the FDA has not previously classified based on risk are automatically classified into Class III regardless of the level of risk they pose. To avoid requiring PMA review of novel low- to moderate-risk devices classified in Class III by operation of law, Congress enacted a provision that allows the FDA to classify a novel low- to moderate-risk device into Class I or Class II in the absence of a predicate device that would support 510(k) clearance. The FDA evaluates the safety and effectiveness of devices submitted for review under the *de novo* pathway and devices classified through this pathway can serve as predicate devices for future 510(k) applicants. The *de novo* pathway typically requires clinical data but not to the same degree as a PMA approval.

FDA has a user fee goal to review a *de novo* request in 150 calendar review days. During the process, FDA may issue an Additional Information request, which stops the clock. The applicant has a maximum of 180 days to respond (after which the submission is automatically terminated). Therefore, the total review time could be up to a maximum of 330 days.

PMA Approval

A Class III product not eligible for either 510(k) clearance or *de novo* classification must follow the PMA approval pathway.

Results from adequate and well-controlled clinical trials are required for each indication for which FDA approval is sought. After completion of the required clinical testing, a PMA including the results of all non-clinical, clinical, and other testing and information relating to the product's marketing history, design, labeling, manufacture, and controls, is prepared and submitted to the FDA.

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The PMA approval process is generally more expensive, rigorous, lengthy, and uncertain than the 510(k) premarket notification process and *de novo* classification process and requires proof of the safety and effectiveness of the device to the FDA's satisfaction. As part of the PMA review, the FDA will typically inspect the manufacturer's facilities for compliance with the QSR requirements, which impose elaborate testing, control, documentation and other quality assurance procedures.

The FDA has a user fee goal to review a PMA in 180 calendar review days, if the submission does not require advisory committee input, or 320 review days if the submission does require advisory committee input. During the process, the FDA may issue a major deficiency letter, which stops the review clock. The applicant has up to 180 days to respond (after which the submission is automatically terminated). Therefore, the total review time could be up to a maximum of 360 days, if the submission does not require advisory committee input, or a maximum of 500 days if the submission does require advisory committee input.

If the FDA's evaluation of the PMA application is favorable, the FDA will issue a PMA for the approved indications, which can be more limited than those originally sought by the manufacturer. The PMA can include post-approval conditions that the FDA believes necessary to ensure the safety and effectiveness of the device including, among other things, restrictions on labeling, promotion, sale and distribution. Failure to comply with the conditions of approval can result in material adverse enforcement action, including the loss or withdrawal of the approval and/or placement of restrictions on the sale of the device until the conditions are satisfied.

Even after approval of a PMA, a new PMA or PMA supplement may be required in the event of a modification to the device, its labeling or its manufacturing process. Supplements to a PMA often require the submission of the same type of information required for an original PMA, except that the supplement is generally limited to that information needed to support the proposed change from the product covered by the original PMA.

Clinical Trials

Generally, at least one clinical trial is required to support a PMA application. Clinical studies also may be required for *de novo* classification or a 510(k) premarket notification. Clinical trials may also be conducted or continued to satisfy post-approval requirements for devices with PMAs. For significant risk investigational devices, the FDA regulations require that human clinical investigations conducted in the U.S. be approved under an IDE, which must become effective before clinical testing may commence. A nonsignificant risk investigational device does not require FDA approval of an IDE. In some cases, one or more smaller IDE studies may precede a pivotal clinical trial intended to demonstrate the safety and efficacy of the investigational device. A 30-day waiting period after the submission of each IDE is required prior to the commencement of clinical testing in humans. If the FDA disapproves the IDE within this 30-day period, the clinical trial proposed in the IDE may not begin.

An IDE application must be supported by appropriate data, such as animal and laboratory test results, showing that it is safe to test the device in humans and that the testing protocol is scientifically sound. The IDE application must also include a description of product manufacturing and controls, and a proposed clinical trial protocol. The FDA typically grants IDE approval for a specified number of patients to be treated at specified study centers. During the study, the sponsor must comply with the FDA's IDE requirements for investigator selection, trial monitoring, reporting, and record keeping. The investigators must obtain patient informed consent, follow the investigational plan and study protocol, control the disposition of investigational devices, and comply with reporting and record keeping requirements. Prior to granting PMA approval, the FDA typically inspects the records relating to the conduct of the study and the clinical data supporting the PMA application for compliance with IDE requirements.

Clinical trials must be conducted: (i) in compliance with federal regulations; (ii) in compliance with good clinical practice, or GCP, an international standard intended to protect the rights and health of patients and to define the roles of clinical trial sponsors, investigators, and monitors; and (iii) under protocols detailing the objectives of the trial, the parameters to be used in monitoring safety, and the effectiveness criteria to be evaluated. Clinical trials are typically conducted at geographically diverse clinical trial sites and are designed to permit the FDA to evaluate the overall benefit-risk relationship of the device and to provide adequate information for the labeling of the device when considering whether a device satisfies the statutory standard for commercialized. Clinical trials, for both significant and nonsignificant risk devices, must be approved by an IRB, an appropriately constituted

group that has been formally designated to review and monitor biomedical research involving human subjects and which has the authority to approve, require modifications in, or disapprove research to protect the rights, safety, and welfare of the human research subject.

The FDA may order the temporary, or permanent, discontinuation of a clinical trial at any time, or impose other sanctions, if it believes that the clinical trial either is not being conducted in accordance with the FDA requirements or presents an unacceptable risk to the clinical trial patients. An IRB may also require the clinical trial it has approved to be halted, either temporarily or permanently, for failure to comply with the IRB's requirements, or may impose other conditions or sanctions.

Although the QSR does not fully apply to investigational devices, the requirement for controls on design and development does apply. The sponsor also must manufacture the investigational device in conformity with the quality controls described in the IDE application and any conditions of IDE approval that the FDA may impose with respect to manufacturing.

Postmarket Requirements

After a device is placed on the market, numerous general regulatory controls apply. These include: the QSR, labeling regulations, the medical device reporting regulations (which require that manufacturers report to the FDA if their device may have caused or contributed to a death or serious injury or malfunctioned in a way that would likely cause or contribute to a death or serious injury if it were to recur), and reports of corrections and removals regulations (which require manufacturers to report recalls or removals and field corrections to the FDA if initiated to reduce a risk to health posed by the device or to remedy a violation of the FDCA). Failure to properly identify reportable events or to file timely reports, as well as failure to address each of the observations to FDA's satisfaction, can subject a manufacturer to warning letters, recalls, or other sanctions and penalties.

Advertising, marketing and promotional activities for devices are also subject to FDA oversight and must comply with the statutory standards of the FDCA, and the FDA's implementing regulations. The FDA's oversight authority review of marketing and promotional activities encompasses, but is not limited to, direct-to-consumer advertising, healthcare provider-directed advertising and promotion, sales representative communications to healthcare professionals, promotional programming and promotional activities involving electronic media. The FDA also regulates industry-sponsored scientific and educational activities that make representations regarding product safety or efficacy in a promotional context.

Manufacturers of medical devices are permitted to promote products solely for the uses and indications set forth in the approved or cleared product labeling. A number of enforcement actions have been taken against manufacturers that promote products for "off-label" uses (i.e., uses that are not described in the approved or cleared labeling), including actions alleging that claims submitted to government healthcare programs for reimbursement of products that were promoted for "off-label" uses are fraudulent in violation of the Federal False Claims Act or other federal and state statutes and that the submission of those claims was caused by off-label promotion. The failure to comply with prohibitions on "off-label" promotion can result in significant monetary penalties, revocation or suspension of a company's business license, suspension of sales of certain products, product recalls, civil or criminal sanctions, exclusion from participating in federal healthcare programs, or other enforcement actions. In the United States, allegations of such wrongful conduct could also result in a corporate integrity agreement with the U.S. government that imposes significant administrative obligations and costs.

Violations of the FDCA relating to the inappropriate promotion of approved products may lead to investigations alleging violations of federal and state healthcare fraud and abuse and other laws, as well as state consumer protection laws.

For a Class II or Class III device meeting certain requirements, the FDA also may require post-market surveillance requirements. Additionally, the FDA may place conditions on a PMA-approved device that could restrict the distribution or use of the product. In addition, all classes of devices must comply with quality-control, manufacture, packaging, and labeling procedures under the QSR, and manufacturers are subject to periodic inspections by the FDA for compliance. Accordingly, manufacturers must continue to expend time, money, and effort in the areas of production and quality control to maintain compliance with the QSR. The FDA may withdraw product approvals or recommend or require product recalls if a company fails to comply with regulatory requirements.

Other Healthcare Laws

In addition to FDA restrictions on marketing of pharmaceutical products, several other types of state and federal laws have been applied to restrict certain general business and marketing practices in the pharmaceutical industry. These laws include anti-kickback, false claims, transparency and health information privacy laws and other healthcare laws and regulations.

The federal Anti-Kickback Statute prohibits, among other things, knowingly and willfully offering, paying, soliciting or receiving remuneration to induce, or in return for, purchasing, leasing, ordering or arranging for the purchase, lease or order of any healthcare item or service reimbursable under Medicare, Medicaid, or other federally financed healthcare programs. The Patient Protection and Affordable Care Act as amended by the Health Care and Education Reconciliation Act (collectively, the "ACA") amended the intent element of the federal Anti-Kickback Statute so that a person or entity no longer needs to have actual knowledge of the statute or specific intent to violate it in order to commit a violation. This statute has been interpreted to apply to arrangements between pharmaceutical manufacturers on the one hand and prescribers, purchasers and formulary managers, among others, on the other. Although there are a number of statutory exceptions and regulatory safe harbors protecting certain common activities from prosecution or other regulatory sanctions, the exceptions and safe harbors are drawn narrowly, and practices that involve remuneration intended to induce prescribing, purchases or recommendations may be subject to scrutiny if they do not qualify for an exception or safe harbor. Additionally, the ACA amended the federal Anti-Kickback Statute such that a violation of that statute can serve as a basis for liability under the federal civil False Claims Act. Federal civil and criminal false claims laws, including the federal civil False Claims Act, prohibit any person or entity from knowingly presenting, or causing to be presented, a false claim for payment to the federal government, or knowingly making, or causing to be made, a false statement to have a false claim paid. This includes claims made to programs where the federal government reimburses, such as Medicare and Medicaid, as well as programs where the federal government is a direct purchaser, such as when it purchases off the Federal Supply Schedule. Pharmaceutical and medical device companies have been prosecuted under these laws for, among other things, allegedly providing free product to customers with the expectation that the customers would bill federal programs for the product. In addition, certain marketing practices, including off-label promotion, may also violate false claims laws. Most states also have statutes or regulations similar to the federal Anti-Kickback Statute and civil False Claims Act, which apply to items and services reimbursed under Medicaid and other state programs, or, in several states, apply regardless of the payor.

Other federal statutes pertaining to healthcare fraud and abuse include the Civil Monetary Penalties Law statute, which prohibits, among other things, the offer or payment of remuneration to a Medicaid or Medicare beneficiary that the offeror or payor knows or should know is likely to influence the beneficiary to order or receive a reimbursable item or service from a particular supplier, and the additional federal criminal statutes created by HIPAA, which prohibit, among other things, knowingly and willfully executing or attempting to execute a scheme to defraud any healthcare benefit program or obtain by means of false or fraudulent pretenses, representations or promises any money or property owned by or under the control of any healthcare benefit program in connection with the delivery of or payment for healthcare benefits, items or services.

Further, pursuant to the ACA, CMS issued a final rule that requires certain manufacturers of prescription drugs to collect and annually report information on certain payments or transfers of value to physicians (defined to include doctors, dentists, optometrists, podiatrists and chiropractors), certain other health care professionals (such as physicians assistants and nurse practitioners) and teaching hospitals, as well as ownership and investment interests held by physicians and their immediate family members. The reported data are made available in searchable form on a public website on an annual basis. Failure to submit required information may result in civil monetary penalties.

Analogous state and foreign anti-kickback and false claims laws that may apply to sales or marketing arrangements and claims involving healthcare items or services reimbursed by non- governmental third-party payors, including private insurers, or that apply regardless of payor. In addition, several states now require prescription drug companies to report certain expenses relating to the marketing and promotion of drug products and to report gifts and payments to individual healthcare practitioners in these states. Other states prohibit various

marketing-related activities, such as the provision of certain kinds of gifts or meals. Further, certain states require the posting of information relating to clinical trials and their outcomes. In addition, certain states require medical device companies to implement compliance programs and/or marketing codes.

Privacy and Data Protection Laws

Data privacy and security regulations by both the federal government and the states in which business is conducted may also be applicable. HIPAA, as amended by the Health Information Technology for Economic and Clinical Health Act ("HITECH") and its implementing regulations, imposes requirements relating to the privacy, security and transmission of individually identifiable health information. HIPAA requires covered entities to limit the use and disclosure of protected health information to specifically authorized situations and requires covered entities to implement security measures to protect health information that they maintain in electronic form. Among other things, HITECH made HIPAA's security standards directly applicable to business associates, independent contractors or agents of covered entities that receive or obtain protected health information in connection with providing a service on behalf of a covered entity. HITECH also created four new tiers of civil monetary penalties, amended HIPAA to make civil and criminal penalties directly applicable to business associates, and gave state attorneys general new authority to file civil actions for damages or injunctions in federal courts to enforce the federal HIPAA laws and seek attorneys' fees and costs associated with pursuing federal civil actions.

In addition, state laws govern the privacy and security of health information in specified circumstances, many of which differ from each other in significant ways and may not have the same effect, thus complicating compliance efforts. Certain state laws may be more stringent or broader in scope, or offer greater individual rights, with respect to personal information, and such laws may differ from each other, all of which may complicate compliance efforts. For example, the CCPA, which increases privacy rights for California residents and imposes obligations on companies that process their personal information, came into effect on January 1, 2020. Among other things, the CCPA requires covered companies to provide new disclosures to California consumers about their data collection, use and sharing practices and provide such consumers new data protection and privacy rights, including the ability to opt out of certain sales of personal information. The CCPA provides for civil penalties for violations, as well as a private right of action for certain data breaches that result in the loss of personal information. This private right of action may increase the likelihood of, and risks associated with, data breach litigation. On November 3, 2020, California voters approved a new privacy law, the CPRA, which significantly modifies the CCPA, including by expanding consumers' rights with respect to certain personal information and creating a new state agency to oversee implementation and enforcement efforts. Many of the CPRA's provisions will become effective on January 1, 2023. State laws are changing rapidly and there is discussion in the U.S. of a new comprehensive federal data privacy law.

Healthcare Reform

Healthcare reforms that have been adopted, and that may be adopted in the future, have been focused on cost containment in the healthcare system and could result in reductions in coverage and levels of reimbursement for healthcare products, increases in rebates payable under U.S. government rebate programs and additional downward pressure on pharmaceutical product prices. On September 9, 2021, the Biden administration published a wide-ranging list of policy proposals, most of which would need to be carried out by Congress, to reduce drug prices and drug payment. The Department of Health and Human Services ("HHS") plan includes, among other reform measures, proposals to lower prescription drug prices, including by allowing Medicare to negotiate prices and disincentivizing price increases, and to support market changes that strengthen supply chains, promote biosimilars and generic drugs, and increase price transparency. These initiatives recently culminated in the enactment of the Inflation Reduction Act ("IRA") in August 2022, which will, among other things, allow HHS to negotiate the selling price of certain drugs and biologics that CMS reimburses under Medicare Part B and Part D, although only high-expenditure single-source drugs that have been approved for at least 7 years (11 years for biologics) can be selected by CMS for negotiation, with the negotiated price taking effect two years after the selection year. The negotiated prices, which will first become effective in 2026, will be capped at a statutory ceiling price representing a significant discount from average prices to wholesalers and direct purchasers. The law will also, beginning in October 2023, penalize drug manufacturers that increase prices of Medicare Part B and Part D drugs at a rate greater than the rate of inflation. The IRA also extends enhanced subsidies for individuals purchasing health insurance coverage in ACA marketplaces through plan year 2025. The IRA permits the Secretary of HHS to implement many of these provisions through guidance, as opposed to regulation, for

the initial years. Manufacturers that fail to comply with the IRA may be subject to various penalties, including civil monetary penalties. These provisions will take effect progressively starting in 2023, although they may be subject to legal challenges.

Environmental Matters

Our operations, properties and products are subject to a variety of U.S. and foreign environmental laws and regulations governing, among other things, use of manufacturing components containing substances below established threshold, air emissions, wastewater discharges, management and disposal of hazardous and non-hazardous materials and waste and remediation of releases of hazardous materials. We believe, based on current information that we are in material compliance with environmental laws and regulations applicable to us and rely heavily on our outsourced design and manufacturing partners to assist in maintaining compliance.

Using hazardous substances in our operations, such as the use of NO, which can be rapidly oxidized in air at high concentrations to form nitrogen dioxide (NO_2) (which at high concentrations can irritate airways in the human respiratory system), exposes us to the risk of accidental injury, contamination or other liability from the use, storage, importation, handling, or disposal of hazardous materials. If our or our contract manufacturers' operations result in the contamination of the environment or expose individuals to hazardous substances, we could be liable for damages and fines, and any liability could significantly exceed our insurance coverage and have a material adverse effect on our on our business, financial condition and results of operations.

Evolving climate change concerns or changes in regulations related to such concerns, including restrictions on the manufacture, supply, use and importation of NO, could subject us to additional costs, including the purchase of importation quotas and increased supply chain costs, and restrictions on the sales of our products. Furthermore, various jurisdictions and regulators may take different approaches to and impose differing or inconsistent requirements under environmental and climate change-related laws, which may make it more costly or difficult for us to sell our products (including by requiring that we monitor such developments, incur increased costs, increase time-to-market and develop additional country-specific variants for certain products) or prevent us from selling certain products in certain geographic markets. Future changes to environmental and health and safety laws, including the enactment of new laws, could cause us to incur additional expenses, redesign our products or restrict our operations, which could have a material adverse effect on our business, financial condition and results of operations, including:

- increasing our administrative and other costs;
- increasing or decreasing mandated services;
- causing us to abandon business opportunities we might have otherwise pursued; or
- requiring us to implement additional or different programs and systems.

The use of hazardous substances is regulated and monitored by various environmental regulatory authorities such as the EPA. As such, we are subject to national, state and local laws, regulations and directives pertaining to hazardous substances, pollution and protection of the environment, health and safety, which govern, among other things, emissions to the air, discharges onto land or waters, the maintenance of safe conditions in the workplace, and the generation, handling, storage, transportation, treatment and disposal of waste materials. These laws include, without limitation, the Comprehensive Environmental Response, Compensation, and Liability Act, the Federal Facilities Compliance Act, the Hazardous Materials Transportation Act, and the Resource Conservation and Recovery Act.

Some of these laws, regulations and directives are subject to varying and conflicting interpretations. Many of these laws, regulations and directives provide for substantial fines and potential criminal sanctions for violations and require the installation of costly equipment to reduce the likelihood or impact of hazardous substance releases, whether permitted or not. Failure to comply with these laws and regulations could result in costs for corrective action, penalties or the imposition of other liabilities. We also are subject to laws and regulations that impose liability and clean-up responsibility for releases of hazardous substances into the environment. Under certain of these laws and regulations, a current or previous owner or operator of property may be liable for the costs of remediating the release or spill of hazardous substances on or from its property, without regard to whether the owner or operator knew of, or caused, the contamination, and such owner or operator may incur liability to third parties impacted by such contamination. Failure to comply with applicable environmental laws and regulations and the imposition of environmental liability could have a material adverse effect on our business, financial condition and results of operations.

Third-Party Payer Coverage and Reimbursement

Significant uncertainty exists as to the coverage and reimbursement status of any of our therapies that ultimately may obtain regulatory approval. In both the United States and foreign markets, our ability to commercialize our product candidates successfully, and to attract commercialization partners for our product candidates, depends in significant part on the availability of adequate financial coverage and reimbursement from third-party payers, including, in the United States, governmental payers such as the Medicare and Medicaid programs, managed care organizations, and private health insurers. Medicare is a federally funded program managed by CMS, through local fiscal intermediaries and carriers that administer coverage and reimbursement for certain healthcare items and services furnished to the elderly and disabled. Medicaid is an insurance program for certain categories of patients whose income and assets fall below state defined levels and who are otherwise uninsured, that is both federally and state funded and managed by each state. The federal government sets general guidelines for Medicaid and each state creates specific regulations that govern its individual program. Each payer has its own process and standards for determining whether it will cover and reimburse a procedure or particular product. Private payers often rely on the lead of the governmental payers in rendering coverage and reimbursement determinations. Therefore, achieving favorable CMS coverage and reimbursement is usually a significant gating issue for successful introduction of a new product. The competitive position of some of our products will depend, in part, upon the extent of coverage and adequate reimbursement for such products and for the procedures in which such products are used. Prices at which we or our customers seek reimbursement for our products can be subject to challenge, reduction or denial by the government and other payers.

Some third-party payers also require pre-approval of coverage for new or innovative devices or drugs before they will reimburse healthcare providers that use such treatments. While we cannot predict whether any proposed cost-containment measures will be adopted or otherwise implemented in the future, the announcement or adoption of these proposals could have a material adverse effect on our ability to obtain adequate prices for our products and product candidates and operate profitably.

Trade Laws

Among other matters, U.S. and foreign anti-corruption, anti-money laundering, export control, sanctions, and other trade laws and regulations, which are collectively referred to as Trade Laws, prohibit companies and their employees, agents, clinical research organizations, legal counsel, accountants, consultants, contractors, and other partners from authorizing, promising, offering, providing, soliciting, or receiving directly or indirectly, corrupt or improper payments or anything else of value to or from recipients in the public or private sector. Violations of Trade Laws can result in substantial criminal fines and civil penalties, imprisonment, the loss of trade privileges, debarment, tax reassessments, breach of contract and fraud litigation, reputational harm, and other consequences. We have direct or indirect interactions with officials and employees of government agencies or government-affiliated hospitals, universities, and other organizations. We also expect our non-U.S. activities to increase in time. We plan to engage third parties for clinical trials and/or to obtain necessary permits, licenses, patent registrations, and other regulatory approvals and we can be held liable for the corrupt or other illegal activities of our personnel, agents, or partners, even if we do not explicitly authorize or have prior knowledge of such activities.

Human Capital and Employees

As of March 13, 2023, we had seven full-time employees and one part-time employee. Our employees are not represented by labor unions or covered by collective bargaining agreements. We consider our relationship with our employees to be good.

Corporate History and Information

We were incorporated as a Delaware corporation on June 14, 2010 under the name Plasma Jet Technologies, Inc. and on September 18, 2014 we changed our name to Advanced Plasma Therapies, Inc. pursuant to an amended and restated certificate of incorporation. On October 8, 2015, we filed a certificate of amendment changing our name to Origin, Inc. On March 1, 2023, we filed a Certificate of Revival to reinstate our Amended and Restated Certificate of Incorporation and to change the name of our corporation to Origin Life Sciences, Inc. References

to Origin Life Sciences, Inc. also include references to our wholly owned subsidiaries: (i) Advanced Plasma Therapies, Inc., incorporated in Delaware; (ii) Origin Life Sciences Limited, incorporated in England and Wales; and (iii) Origin Agribusiness Limited incorporated in England and Wales.

Our principal executive offices are located at 2 Research Way, Third Floor, Princeton, NJ 08540, and our telephone number is (609) 250-6000. Our website address is *www.originww.com*. The information contained on, or that can be accessed through, our website is not incorporated by reference into this prospectus, and you should not consider any information contained on, or that can be accessed through, our website as part of this prospectus or in deciding whether to purchase our common stock.

Facilities

Our corporate headquarters are located at 2 Research Way, Third Floor, Princeton, NJ 08540, which are leased pursuant to a Lease Agreement dated June 24, 2015, as amended May 27, 2016 and July 25, 2018 ("Lease Agreement"). The term of the lease ends on June 30, 2023 and the monthly rent for the period July 1, 2022 through June 30, 2023 is approximately $112,525. We believe that these headquarters, consisting of 4,233 square feet, are adequate for our current operations and needs.

Legal Proceedings

On June 28, 2019, we filed a complaint in the United States District Court for the District of New Jersey against Magid Financial Services Inc. ("Magid Financial") and Joseph Magid ("Magid," and, together with Magid Financial, "MFS") (Case 3.:19-cv-14435). We are suing MFS for, inter alia, breach of contract and specific performance in connection with two subscription agreements that Magid Financial entered into with the Company, pursuant to which it agreed to purchase shares of our common stock for the aggregate purchase price of $7,249,200, but did not provide payment. MFS filed a motion to dismiss the Complaint, which was denied by the Court. MFS filed an answer on August 14, 2020. We filed a motion for partial summary judgement on March 11, 2022, which motion has been fully briefed and we are awaiting a decision from the Court.

Additionally, we may, in the ordinary course of business face various claims brought by third parties, and we may, from time to time, make claims or take legal actions to assert our rights, including intellectual property rights as well as claims relating to employment matters and the safety or efficacy of our products. Any of these claims could subject us to costly litigation. If this were to happen, the payment of any such awards could have a material adverse effect on our business, financial condition and results of operations. Additionally, any such claims, whether or not successful, could damage our reputation and business.

MANAGEMENT

Executive Officers and Directors

The following table sets forth information as of March 13, 2023, for individuals who are expected to serve as executive officers and directors following the completion of this offering.

Name	Age	Position
Executive Officers and Directors		
Michael Preston	77	Chairman and Chief Executive Officer
David Dantzker, M.D.	79	Deputy Chairman and Chief Medical Officer
John Fernandes	67	Chief Financial Officer
Terry Treadwell, M.D.	75	Chief Clinical Officer (effective upon completion of this offering)
Non-Executive Directors		
Anthony Brampton	65	Non-Executive Director
Victor Micati	83	Non-Executive Director
Howard Nelson	64	Non-Executive Director

Management

Michael Preston, Chairman and Chief Executive Officer

Michael Preston is a founder of our Company and has served as our Chairman since 2010 and as Chief Executive Officer since 2015. He has also served on the board of directors of Origin Life Sciences Limited, our subsidiary based in the U.K., since 2014. He started his business life at Price Waterhouse, London, and left to pursue an entrepreneurial career, which he devoted to the founding and development of new ventures in services, publishing and technology on both sides of the Atlantic, having taken several of such companies public. Mr. Preston holds both U.S. and U.K. citizenship and has been exclusively engaged in our company's affairs since March 2011. He obtained an M.A. degree in Literae Humaniores from the University of Oxford and is a Fellow of the Institute of Chartered Accountants of England and Wales, of which he has been a member since 1971. We believe Mr. Preston is qualified to serve on our Board of Directors because of his experience in successfully completing initial public offerings for other companies and the continuous dedication he has shown to our Company over the last decade.

David Dantzker, M.D., Deputy Chairman and Chief Medical Officer

Dr. David Dantzker has served as our Chief Medical Officer and Deputy Chairman since 2012. He currently sits on the board of directors of Oligomerix, Inc., a Wheatley MedTech portfolio company, a position he has held since 2001. Since 2010, he has also been a director of Surmodics, Inc., where he is also Chair of the compensation committee. Dr. Dantzker also served as a Senior Medical Advisor to Fluent Health, a medical delivery service, in Mumbai, India from 2021 through 2022. Dr. Dantzker has authored or co-authored 130 research papers and five textbooks and is an internationally recognized expert in pulmonary medicine and critical care. He has been Professor of Medicine at the Universities of Texas and Michigan and the Albert Einstein College of Medicine and served as Chair of the American Board of Internal Medicine, the largest physician-certifying board in the United States. Dr. Dantzker was subsequently President of North Shore-LIJ Health System, a large academic health care system now known as Northwell, and then became a Partner at Wheatley MedTech Partners L.P., a venture capital fund where he managed Wheatley's Life Science and Healthcare investments. Dr. Dantzker holds a B.A. in English from New York University and received his M.D. from the University at Buffalo School of Medicine.

John Fernandes, Chief Financial Officer

John Fernandes joined Origin as Vice President, Finance in 2014. He has served as our Chief Financial Officer since 2015 and also as our Secretary and Treasurer since 2018. Prior to working with Origin, Mr. Fernandes was employed for eighteen years in positions of rising seniority in the finance function of Coty Inc., culminating in the position of Senior Vice President, Corporate — Working Capital. In this position, he was responsible for improving cash flow by more than $250 million over five years. He holds both U.S. and U.K. citizenship. He holds a B.Sc. in biochemistry from the University of St. Andrews, Scotland and has been an Associate of the Institute of Chartered Accountants of England and Wales since 1984.

Terry Treadwell, M.D., Chief Clinical Officer

Upon consummation of this offering, Dr. Terry Treadwell will be appointed to serve as our Chief Clinical Officer. Since 2006, Dr. Treadwell has served as Medical Director of the Institute for Advanced Wound Care and as Senior Editor in Chief to the journal entitled, *Wounds*. He has also served as a consultant and lecturer for 3M from 2010 to the present. In 2022, Dr. Treadwell served as a consultant and investigator for Arch Therapeutics, Inc. and in 2020 he served as a Member of the Safety Committee for MediWound, Inc. From 1973 until 1977, he was a general and vascular surgeon at the Scott and White Memorial Hospital. Dr. Treadwell received his M.D. from the University of Texas Southwestern Medical School.

Non-Executive Directors

Anthony Brampton

Anthony Brampton has served on our Board of Directors since 2014. He has also served on the board of directors of our subsidiary, Origin Life Sciences Limited, a U.K. corporation, since 2015. After working, initially as an analyst, at leading investment banking firms in London, he joined Cazenove & Co. in 1989 and became a corporate finance partner in 1999. Following the acquisition of Cazenove by J.P. Morgan, he became Managing Director, corporate finance at J.P. Morgan Cazenove, with responsibility for healthcare and life sciences. Since his retirement from J.P. Morgan Cazenove in 2006, he has been involved in equity finance in the life sciences field, held a number of non-executive directorships including Abzena plc, a company providing chemistry services to biotechnology and pharmaceutical companies, from 2007 through 2019, Polar Capital Global Healthcare Trust, an investment fund, from 2010 through 2020, Domainex, a provider of preclinical drug discovery services, from 2012 through 2020, and iPulse Ltd., a consumer healthcare company, from 2015 through 2019. Mr. Brampton was also a partner at Longbow Capital, an Investment advisor, from 2014 through 2019. He obtained both a B.A. and an M.Sc. in Biochemistry from the University of Oxford. We believe Mr. Brampton's extensive financial and market knowledge and experience as a director within the biotechnology industry will assist us in complying with the requirements of being a public company.

Victor Micati

Victor Micati has served on our Board of Directors since 2016. Mr. Micati spent his entire career as a senior executive at Pfizer (the world's largest pharmaceutical company), working extensively with Japan, Pfizer's largest overseas market, and then becoming President of Pfizer Europe, based in Brussels, where he served until his retirement. He was subsequently a Board member of an oncology company, Ilex, Inc., and then joined the Board of Enzon Pharmaceuticals, Inc, a pharmaceutical company engaged in developing therapeutics to patients with unmet needs, where he chaired the Governance committee. Mr. Micati also serves as the Chairman of the Board of Oligomerix, Inc., a neuro-biotechnology company, a position he has held since July 2010, where he has also served on the Compensation Committee. Mr. Micati received a B.A. from Middlebury College and an M.B.A. from Columbia Business School. We believe Mr. Micati's knowledge and experience working in the pharmaceutical and biotechnology industries will assist us as we work to complete the development of our technology and commercialization activities.

Howard Nelson

Howard Nelson is a founder of our Company and has served on our Board of Directors since June 2010. Additionally, Mr. Nelson served as our Chief Executive Officer from 2010 through 2015 and then as President from 2015 through 2019. From April 2019 to the present, Mr. Nelson has served as the Chief Executive Officer and Chair of the board of directors of RedShift Energy Inc., a company that is developing hydrogen and sulfur recovery technology, an innovative plasma process that dissociates hydrogen sulfide into hydrogen and sulfur, without carbon emissions. From February 2020 to the present, he has served as the President of IPD Products Inc., a manufacturer and seller of air sterilizers. From April 2019 to the present, he has served as the Chief Executive Officer of LDS Technology Consultants, Inc., a research and development company that offers unique solutions and a variety of services with the aid of plasma science. He has also been an adjunct professor of management at the College of New Jersey since 2007. From 2012 to the present, Mr. Nelson has also served in various positions for the New Jersey Sharing Network Organ Procurement Organization, New Jersey's federally-

designated nonprofit organization responsible for saving and enhancing lives through organ and tissue donation, including Trustee, Chairman of the Board, Vice Chairman, Treasurer, and a member of the Executive Committee, Compensation Committee, Finance Committee, and Audit Committee. Currently, Mr. Nelson serves as Trustee and Treasurer at the New Jersey Sharing Network Management

Company. He held senior business development positions at both Pfizer and Bristol Myers Squibb. He has an A.B. from Princeton University and an M.B.A. from Tulane University. We believe that Mr. Nelson's experience as an executive and director, particularly as it relates to plasma science, will assist us as we complete the development of our technology and commercialization activities.

Science and Technology Consultant

Upon completion of this offering, Ferid Murad, M.D., Ph.D., will provide advisory and consulting services regarding our science and technology. We intend that Dr. Murad will work with our management team in planning, developing and executing further scientific, clinical, and research and development initiatives and strategies. Dr. Murad received his M.D. and Ph.D. from Western Reserve University School of Medicine and was awarded the Nobel Prize in Physiology or Medicine in 1998 for the discovery that NO acts as a signaling molecule in the cardiovascular system.

Selection of Officers

Our executive officers serve at the discretion of our Board of Directors. There are no familial relationships among our directors and executive officers.

Board Composition

Following the effectiveness of this offering, and subject to the terms of our second amended and restated certificate of incorporation and second amended and restated bylaws, which will become effective prior to effectiveness of this offering, our Board of Directors will consist of five members and will be a classified board of directors, with each director serving a staggered, three-year term. As a result, only one class of directors will be elected at each annual meeting of our stockholders, with the other classes continuing for the remainder of their respective three-year terms. The terms of the directors will expire upon the election and qualification of successor directors at the first annual meeting of stockholders held after consummation of this offering for the Class I directors, at the second annual meeting of stockholders held after consummation of this offering for the Class II directors and at the third annual meeting of stockholders held after consummation of this offering for the Class III directors. Our directors will be divided among the three classes as follows:

- the Class I director will be Howard Nelson and his term will expire at the first annual meeting of stockholders;
- the Class II directors will be Anthony Brampton and Victor Micati and their terms will expire at the second annual meeting of stockholders; and
- the Class III directors will be Michael Preston and David Dantzker and their term will expire at the third annual meeting of stockholders.

Upon expiration of the term of a class of directors, new directors for that class will be elected for three-year terms at the annual meeting of stockholders during the year in which that term expires. Each director's term shall continue until the election and qualification of his or her successor, or the director's earlier death, resignation or removal. Any additional directorships resulting from an increase in the number of authorized directors will be distributed among the three classes so that, as nearly as possible, each class will consist of one-third of the directors.

The classification of our Board of Directors may have the effect of delaying or preventing a change of our management, a change of control or other corporate actions. Under Delaware law and our Certificate of Incorporation, for so long as our Board of Directors is divided into classes, our directors may be removed only for cause.

Director Independence

Under the rules of NYSE American, independent directors must comprise a majority of our Board of Directors. The rules of NYSE American impose several requirements with respect to the independence of our directors. Our Board of Directors has conducted a review of its composition, the composition of its proposed committees

and the independence of each director in accordance with Section 803 of the NYSE American LLC Company Guide. Based upon information requested from and provided by each director concerning his or her background, employment and affiliations, including family relationships, our Board of Directors has determined that Anthony Brampton, Victor Micati and Howard Nelson do not have relationships that would interfere with the exercise of independent judgment in

carrying out the responsibilities of a director and that each of these directors is "independent" as that term is defined Section 803 of the NYSE American LLC Company Guide. In making this determination, our Board of Directors considered relationships that each director has with the Company, including the transactions described under the section entitled "Certain Relationships and Related Party Transactions."

Committees of the Board of Directors

Our Board of Directors intends to establish an audit committee, a compensation committee and a nominating and corporate governance committee in connection with this offering, each of which will have the composition and responsibilities described below. Each committee will operate under a written charter that satisfies the applicable rules of the SEC and the listing standards of NYSE American. Members will serve on these committees until their resignation or until otherwise determined by our Board of Directors. From time to time, our Board of Directors may establish other committees to facilitate the management of our business as it sees fit and in accordance with applicable law and our corporate governance documents.

Audit Committee. After effectiveness of this offering, our Audit Committee will consist of Anthony Brampton and Victor Micati, with Anthony Brampton serving as the Chair of the Audit Committee. Our Board of Directors has determined that the two directors who will serve on our Audit Committee are independent within the meaning of the rules and regulations of NYSE American and Rule 10A-3 under the Exchange Act. In addition, our Board of Directors has determined that Anthony Brampton qualifies as an audit committee financial expert within the meaning of SEC regulations and meets the financial sophistication requirements of NYSE American.

The Audit Committee will oversee and monitor our financial reporting process and internal control system, review and evaluate the audit performed by our registered independent public accountants and report to the Board of Directors any substantive issues found during the audit. The Audit Committee will be directly responsible for the appointment, compensation and oversight of the work of our registered independent public accountants. The Audit Committee will also review and approve all transactions with affiliated parties.

Compensation Committee. After effectiveness of this offering, our Compensation Committee will consist of Victor Micati and Anthony Brampton, with Anthony Brampton serving as the Chair of the Compensation Committee. Our Board of Directors has determined that the two directors who will serve on our compensation committee are independent under the listing standards, are "non-employee directors" as defined in rule 16b-3 promulgated under the Exchange Act and are "outside directors" as that term is defined in Section 162(m) of the Internal Revenue Code of 1986, as amended, or the Code.

The Compensation Committee will provide advice and make recommendations to the Board of Directors in the areas of employee salaries, benefit programs and director compensation. The Compensation Committee will also review and approves corporate goals and objectives relevant to the compensation of our President, Chief Executive Officer and other officers, and make recommendations in that regard to the Board of Directors as a whole.

Nominating and Corporate Governance Committee. After effectiveness of this offering, our Nominating and Corporate Governance Committee will consist of Anthony Brampton and Howard Nelson, with Anthony Brampton serving as the Chairman of the Nominating and Corporate Governance Committee. The Nominating and Corporate Governance Committee will nominate individuals to be elected to the Board of Directors by our stockholders. The Nominating and Corporate Governance Committee will consider recommendations from stockholders if submitted in a timely manner in accordance with the procedures set forth in our Bylaws and will apply the same criteria to all persons being considered. All members who will serve on the Nominating and Corporate Governance Committee are independent directors as defined under the listing standards of the NYSE American.

Compensation Committee Interlocks and Insider Participation

No member of our Compensation Committee will be serving, or will have ever served, as an officer or employee of ours. None of our executive officers currently serves, or has served during the last completed year, as a member

of the Board of Directors, Compensation Committee or other board committee performing equivalent functions of any entity that has one or more executive officers who served as a member of our Board of Directors during the last completed year.

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Code of Business Conduct and Ethics

Prior to the completion of this offering, we will adopt a code of business conduct and ethics that is applicable to all of our employees, officers and directors. The full text of our code of business conduct and ethics will be available on our website at *www.originww.com*. If we amend or grant any waiver from a provision of our code of ethics that applies to our directors or executive officers, we will publicly disclose such amendment or waiver on our website and as required by applicable law, including by filing a Current Report on Form 8-K.

Limitation of Liability and Indemnification

Our second amended and restated certificate of incorporation and second amended and restated bylaws, which will be in effect prior to the effectiveness of this offering, will provide that we will indemnify our directors and officers, and may indemnify our employees and other agents, to the fullest extent permitted by Delaware law. The indemnification agreements that we intend to enter into with each of our directors and executive officers may, in some cases, be broader than the specific indemnification provisions contained under Delaware law.

In addition, as permitted by Delaware law, our second amended and restated certificate of incorporation that will be in effect prior to the effectiveness of this offering includes provisions that eliminate the personal liability of our directors and officers for monetary damages resulting from breaches of certain fiduciary duties as a director or officer, as applicable, except to the extent such an exemption from liability thereof is not permitted under the Delaware General Corporation Law. The effect of these provisions is to restrict our rights and the rights of our stockholders in derivative suits to recover monetary damages against a director or officer for breach of fiduciary duties as a director or officer, subject to certain exceptions in which case the director or officer would be personally liable. An officer may not be exculpated for any action brought by or in the right of the corporation. A director may not be exculpated for improper distributions to stockholders. Further, pursuant to Delaware law a director or officer may not be exculpated for:

- any breach of his or her duty of loyalty to us or to our stockholders;
- acts or omissions not in good faith or that involve intentional misconduct or a knowing violation of law; and
- any transaction from which the director or officer derived an improper personal benefit.

If Delaware law is amended to authorize corporate action further eliminating or limiting the personal liability of a director or officer, then the liability of our directors and/or officers will be eliminated or limited to the fullest extent permitted by Delaware law, as so amended. Our certificate of incorporation does not eliminate a director or officer's duty of care and, in appropriate circumstances, equitable remedies, such as injunctive or other forms of non-monetary relief, remain available under Delaware law. This provision also does not affect a director or officer's responsibilities under any other laws, such as the federal securities laws or other state or federal laws. Under our bylaws, we will also be empowered to purchase insurance on behalf of any person whom we are required or permitted to indemnify.

In the case of an action or proceeding by or in the right of our company or any of our subsidiaries, no indemnification will be provided for any claim where a court determines that the indemnified party is prohibited from receiving indemnification. We believe that these charter and bylaw provisions are necessary to attract and retain qualified persons as directors and officers.

The limitation of liability and indemnification provisions in our certificate of incorporation and bylaws may discourage stockholders from bringing a lawsuit against directors for breach of their fiduciary duties. They may also reduce the likelihood of derivative litigation against directors and officers, even though an action, if successful, might benefit us and our stockholders. Moreover, a stockholder's investment may be harmed to the extent we pay the costs of settlement and damage awards against directors and officers pursuant to these indemnification provisions.

Insofar as indemnification for liabilities arising under the Securities Act may be permitted to our directors, officers and controlling persons pursuant to the foregoing provisions, or otherwise, we have been advised that, in the opinion of the SEC, such indemnification is against public policy as expressed in the Securities Act, and is, therefore, unenforceable.

There is no pending litigation or proceeding naming any of our directors or officers as to which indemnification is being sought, nor are we aware of any pending or threatened litigation that may result in claims for indemnification by any director or officer.

We intend to enter, into separate indemnification agreements with each of our directors and executive officers, in addition to the indemnification that will be provided for in our certificate of incorporation and bylaws. The indemnification agreements and our amended restated certificate of incorporation and bylaws that will be in effect prior to the effectiveness of this offering require us to indemnify our directors, executive officers and certain controlling persons to the fullest extent permitted by Delaware law. See the section titled "Description of Securities — Limitations on Liability and Indemnification of Officers and Directors" for additional information.

Director Compensation

The following table shows certain information with respect to the compensation of all of our current non-employee directors for the fiscal year ended December 31, 2022:

Name	Fees Earned or Paid in Cash ($)	Stock Awards ($)	Option Awards ($)	Total ($)
Victor Micati	$ 90,000[(1)]	$ —	—	$ 90,000
Anthony Brampton	$ 90,000[(2)]	$ —	—	$ 90,000

(1) In lieu of the cash payment that was due to Victor Micati for the fiscal year ended December 31, 2022, we intend to issue shares of common stock to Mr. Micati, which shares will be equal to a value of $90,000 in accordance with Financial Accounting Standard Board Accounting Standards Codification Topic 718 for stock-based compensation transactions (ASC 718). The valuation assumptions used in determining such amounts are described in Note 2 in the accompanying audited financial statements and elsewhere in this prospectus.

(2) In lieu of the cash payment that was due to Anthony Brampton for the fiscal year ended December 31, 2022, we intend to issue shares of common stock to Mr. Brampton, which shares will be equal to a value of $90,000 in accordance with Financial Accounting Standard Board Accounting Standards Codification Topic 718 for stock-based compensation transactions (ASC 718). The valuation assumptions used in determining such amounts are described in Note 2 in the accompanying audited financial statements and elsewhere in this prospectus.

We do not have a formal policy with regard to compensation of our non-employee directors, however, we have agreed to pay each of Victor Micati and Anthony Brampton an annual salary of $90,000. Howard Nelson does not receive a salary in connection with his services as a director.

The table below shows the aggregate number of option awards outstanding at fiscal year-end of our non-employee directors.

Name	Number of Shares Subject to Outstanding Options as of December 31, 2022
Victor Micati	52,500
Anthony Brampton	52,500
Howard Nelson	—

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EXECUTIVE COMPENSATION

Our named executive officers for the fiscal year ended December 31, 2022, which consist of our principal executive officer and the next most highly compensated executive officers, are:

- Michael Preston, Chairman and Chief Executive Officer
- John Fernandes, Chief Financial Officer
- David Dantzker, M.D., Deputy Chairman and Chief Medical Officer

Summary Compensation Table

The following table sets forth information regarding the compensation that was awarded to, earned by, or paid to our named executive officers during the fiscal years ended December 31, 2022 and 2021.

Name and Principal Position	Year	Salary ($)[1]	Bonus ($)[1]	Option Awards ($)[2]	All Other Compensation ($)[1][3]	Total ($)
Michael Preston	2022	$ 300,000	$ 90,000		$ 11,100	$ 401,100
Chairman & Chief Executive Officer	2021	$ 300,000	$ 60,000		$ 11,100	$ 371,100
John Fernandes	2022	$ 250,000	$ 75,000		$ 11,100	$ 336,100
Chief Financial Officer	2021	$ 250,000	$ 50,000	$ 450,419	$ 11,100	$ 761,519
David Dantzker, M.D.	2022	$ 250,000	$ 75,000			$ 325,000
Deputy Chairman & Chief Medical Officer	2021	$ 250,000	$ 50,000			$ 300,000

(1) All salary, bonuses and other compensation has been earned, but not paid as of the date of this prospectus, as each executive officer has elected to defer such compensation for the periods indicated.

(2) In accordance with SEC rules, this column reflects the aggregate fair value of the stock and option awards granted during the respective fiscal year computed as of their respective grant dates in accordance with Financial Accounting Standard Board Accounting Standards Codification Topic 718 for stock-based compensation transactions (ASC 718). The valuation assumptions used in determining such amounts are described in Note 10 in the accompanying audited financial statements and elsewhere in this prospectus.

(3) All other compensation is related to car allowances.

Outstanding Equity Awards at Fiscal Year-End

As of December 31, 2022, the following equity awards are outstanding for our named executive officers, which give effect to the 175-for-1 forward stock split of our common stock, which is the midpoint of the Forward Split Range.

			Option Awards[1]			
Name	Award Type	Grant Date	Number of securities underlying unexercised options or warrants exercisable	Number of securities underlying unexercised options or warrants unexercisable	Option or Warrant exercise price ($)	Option or Warrant expiration date
Michael Preston	Stock Option	3-31-14	525,000[2]		$ 1.03	3-30-2024
Michael Preston	Warrant	6-30-14	804,825[2]		$ 1.03	6-29-2027
Michael Preston	Warrant	2-20-15	1,130,675[2]		$ 1.03	2-19-2028

David Dantzker, M.D.	Stock Option	3-31-14	525,000[2]	$	1.03	3-30-2024
David Dantzker, M.D.	Stock Option	1-15-13	875,000[2]	$	0.20	1-14-2026
John Fernandes	Stock Option	5-1-15	52,500[3]	$	3.49	4-30-2025
John Fernandes	Stock Option	10-5-15	122,500[3]	$	3.49	10-4-2025
John Fernandes	Stock Option	9-14-17	126,000[3]	$	6.29	9-13-2027
John Fernandes	Stock Option	1-29-21	78,750[2]	$	8.00	1-28-2028

(1) Unless otherwise indicated, vesting of all options and warrants is subject to continued service on the applicable vesting date.

(2) The shares subject to the options/warrants, as applicable, vested in full upon the date of grant.
(3) The shares subject to the stock options vest over three years in four equal installments, (i) 25% on the date of grant; and (ii) 25% on the first, second and third anniversary of the date of grant.

Narrative Disclosure to Summary Compensation Table

Employment Arrangements with Our Named Executive Officers

The following is a summary of the employment arrangements that we have entered into with our named executive officers. Capitalized terms used in the descriptions below are those defined in the particular agreement being summarized.

Michael Preston

We entered into an employment agreement with Michael Preston (the "Preston Agreement") on May 30, 2013, as amended on September 30, 2013, December 30, 2013, November 1, 2015 and December 22, 2022. Mr. Preston was originally employed as Executive Chairman and Acting Chief Financial Officer, but as of November 1, 2015 he has served as our Executive Chairman and Chief Executive Officer. Pursuant to the November 1, 2015 amendment to the Preston Agreement, the term of his employment was extended until March 30, 2017, which shall automatically renew for successive one-year terms unless either party gives 60 days' notice of an intention not to renew. Mr. Preston's current annual base salary is $300,000 and he receives a monthly car allowance of $925. He is entitled to receive a discretionary bonus as well as the following mandatory bonuses: (i) a cash payment of $75,000 upon achievement of our initial round of financing with minimum gross proceeds to us of not less than $2 million (the "First Funding Milestone"), which was paid in 2014 after achievement of the milestone (ii) a cash payment of $175,000 upon achievement of the primary endpoints of our feasibility study such that we may proceed to our pivotal trial or the FDA's approval of an IDE that permits us to proceed directly to a pivotal trial (the "First Trial Milestone"), which was paid in 2015 after achievement of the milestone (iii) a cash payment of $160,000 upon achievement of the primary endpoints of our pivotal trial (the "Second Trial Milestone"). Within 15 days of the occurrence of the First Funding Milestone, The First Trial Milestone or the Second Trial Milestone, Mr. Preston is entitled to a grant of warrants to purchase our common stock in an amount equal to 3.75% of our issued and outstanding voting capital stock on the date of issuance, which are exercisable for a period of seven years, at an exercise price equal to the price per share in our most recently completed round of funding. After achievement of the First Funding Milestone and the First Trial Milestone, pursuant to the Preston Agreement, we issued the following two warrants to Mr. Preston, both of which remain outstanding and unexercised: (i) on June 30, 2014, we issued a warrant to purchase up to 804,825 shares of common stock at an exercise price of $1.03 per share, which warrant expires on the 13th anniversary of the date of issuance pursuant to an extension of the initial expiration date; and (ii) on February 20, 2015, we issued a warrant to purchase up to 1,130,675 shares of common stock at an exercise price of $3.49 per share, which warrant expires on the 13th anniversary of the date of issuance pursuant to an extension of the initial expiration date.

Either party may terminate the Preston Agreement upon 60 days written notice, however, in the event Mr. Preston terminates his employment for any reason, he is not entitled to any benefits. Upon termination of Mr. Preston's employment as a result of his death, disability, or termination by the Company with Cause (as such term is defined in the Preston Agreement), Mr. Preston shall be entitled to all accrued but unpaid salary and bonus amounts, post-termination rights available to an executive pursuant to our prevailing employee benefits policies, and, if applicable, payments under life or disability insurance plans ("Accrued Benefits"). If Mr. Preston's employment is terminated by the Company with No Reason, he is entitled to Accrued Benefits as well as a cash payment in an amount equal to the greater of one year's base salary or payment through the balance of the then current term of employment. In the event Mr. Preston's employment is terminated as a result of his death, disability or by the Company with No Reason, he will retain the right, on a post-termination basis, to receive any mandatory cash bonuses and with respect to the warrants issued upon achievement of the First Funding Milestone, the First Trial Milestone and/or the Second Trial Milestone, he shall have the full remaining term of the warrants to exercise all vested warrants and the unvested warrants shall continue to vest upon achievement of the milestone following such termination. In the event Mr. Preston's Agreement is terminated for Cause or Mr. Preston terminated the agreement for any reason he will have the full remaining term of the warrants to exercise all vested warrants and rights to any unvested warrants will immediately terminate. The Preston Agreement also contains confidentiality, non-compete and non-solicitation provisions.

On December 8, 2022, at a meeting of the Remuneration Committee of our Board of Directors, a proposal was approved which requires that, in the event of termination of the Preston Agreement by reason of his death or disability, we provide Mr. Preston's wife and children with health insurance, at our own expense, for a period of eighteen (18) months from such termination.

John Fernandes

On November 1, 2014, we entered into an employment agreement with John Fernandes (the "Fernandes Agreement") to serve as our Vice President of Finance. Pursuant to the Fernandes Agreement, Mr. Fernandes' became our Chief Financial Officer after six months of employment, on May 1, 2015, at which time his annual salary was increased to $200,000 and he was granted options to purchase 52,500 shares of our common stock at the price of $3.48 per share, which vest equally over a four-year period, pursuant to our 2014 Plan. Mr. Fernandes' annual base salary is currently $250,000. He also receives an additional $925 per month car allowance and is eligible to receive a bonus of up to 30% of his salary, in our sole discretion. Upon becoming Chief Financial Officer, Mr. Fernandes became entitled to six months written notice prior to termination without Cause (as such term is defined in the Fernandes Agreement), but we may terminate his employment for Cause without prior notice. If Mr. Fernandes resigns for Good Reason (as such term is defined in the Fernandes Agreement), he is entitled to receive six months' salary in twelve equal bi-monthly payments, provided that he signs and delivers to us a General Release. The Fernandes Agreement also provides that Mr. Fernandes will be subject to certain confidentiality and non-compete provisions.

David Dantzker, M.D.

We entered into an employment agreement with Dr. Dantzker dated November 1, 2015 (the "Dantzker Agreement") to serve as our Chief Medical Officer, pursuant to which he currently receives an annual salary of $250,000 and is eligible to receive a bonus of up to 30% of his salary, in our sole discretion. Dr. Dantzker is entitled to six months written notice prior to termination without Cause (as such term is defined in the Dantzker Agreement), but we may terminate his employment for Cause without prior notice. If Dr. Dantzker resigns for Good Reason (as such term is defined in the Dantzker Agreement), he is entitled to receive six months' salary in twelve equal bi-monthly payments, provided that he signs and delivers to us a General Release. Dr. Dantzker is required to devote no less than 90% of his full business time, labor, skill and energy to our business pursuant to the Dantzker Agreement. The Dantzker Agreement also provides that Dr. Dantzker will be subject to certain confidentiality and non-compete provisions.

Terry Treadwell, M.D.

We have entered into an employment agreement with Dr. Treadwell, dated as of November 15, 2022 (the "Treadwell Agreement"), to serve as our Chief Clinical Officer effective upon consummation of this offering, provided that we raise gross proceeds of at least $15 million. Pursuant to the Treadwell Agreement, he will receive an annual salary of $250,000 and is eligible to receive an annual bonus of up to 30% of his annual base salary, in our sole discretion. If Dr. Treadwell resigns for Good Reason (as such term is defined in the Treadwell Agreement) or is terminated by us other than for Cause (as such term is defined in the Treadwell Agreement), he is entitled to receive 50% of his then current base salary, payable in twelve equal bi-monthly payments, provided that he signs and delivers to us a General Release. Dr. Treadwell is required to devote no less than 50% of his business time, labor, skill and energy to our business pursuant to the Treadwell Agreement. The Treadwell Agreement also provides that Dr. Treadwell will be subject to certain confidentiality and non-compete provisions.

Equity Compensation Plan Information

The following table sets forth information concerning equity compensation granted to various consultants and employees of the Company pursuant to individual compensation arrangements as of December 31, 2022, which does not include the 2023 Stock Incentive Plan that we intend to adopt, which will become effective upon completion of this offering:

Plan Category	Number of securities to be issued upon exercise of outstanding securities	Weighted-average exercise price of outstanding securities	Number of securities remaining available for future issuance under equity compensation

			plans
Equity compensation plans approved by security holders	3,084,550	$ 3.31	1,741,600
Equity compensation plans not approved by security holders	—	$ —	—
Total	3,084,550	$ 3.31	1,741,600

2014 Equity Incentive Plan

The principal provisions of the Advanced Plasma Therapies, Inc. 2014 Equity Incentive Plan (the 2014 Plan) are summarized below. We intend to adopt the Origin Life Sciences, Inc. 2023 Stock Incentive Plan (the "2023 Plan"), which will become effective upon the completion of this offering. Upon the effectiveness of the 2023 Plan, it will replace the 2014 Plan, except with respect to awards outstanding under the 2014 Plan, and no further awards will be available for grant under the 2014 Plan.

Administration

The 2014 Plan vests broad powers in a committee of at least two people as the board of directors may appoint (the "Committee") to administer and interpret the 2014 Plan. Unless altered by action of the board of directors, the Committee shall be the compensation committee. Except when limited by the terms of the 2014 Plan, the Committee has the authority to, among other things: select the persons to be granted awards; determine the type, size and term of awards; establish performance objectives and conditions for earning awards; determine whether such performance objectives and conditions have been met; and accelerate the vesting or exercisability of an award. In its discretion, the compensation committee may delegate all or part of its authority and duties with respect to granting awards to one or more of our officers, subject to certain limitations and provided applicable law so permits.

Our board of directors may amend, alter, suspend, discontinue or terminate the 2014 Plan, or any portion thereof, and the Committee is able to amend any outstanding award at any time; provided, however, that no such amendment, alteration, suspension, discontinuation or termination may adversely affect awards then outstanding without the holder's permission. In addition, any amendments seeking to increase the total number of shares reserved for issuance under the 2014 Plan or modifying the classes of participants eligible to receive awards under the 2014 Plan requires ratification by our stockholders in accordance with applicable law. Additionally, as described more fully below, neither the board of directors nor the Committee is permitted to take any action that is considered a "repricing" of outstanding options or stock appreciation rights without shareholder consent.

Eligibility

Any of our current or prospective employees, directors, officers, consultants, or advisors, or those of our affiliates, are eligible to participate in the 2014 Plan and may be selected by the Committee to receive an award.

Vesting

The Committee determines the vesting conditions for awards as set forth in an applicable award agreement. These conditions may include the continued employment or service of the participant, the attainment of specific individual or corporate performance goals, or other factors as determined in the Committee's discretion (collectively, "Vesting Conditions").

Shares of Stock Available for Issuance

Subject to certain adjustments, the maximum number of shares of common stock originally authorized for issuance under the 2014 Plan in connection with awards was 3,850,000 shares. In February 2020, pursuant to approval of the board of directors and our shareholders, the maximum number of shares authorized for issuance under the 2014 Plan was increased to 5,075,000, shares, of which 1,741,600 remain available for issuance as of the date of this prospectus. All available shares may be utilized toward the grant of any type of award under the 2014 Plan. The 2014 Plan imposes a $100,000 limitation on the total grant date fair value with respect to which incentive stock options are exercisable for the first time by an individual optionee during any single calendar year.

In the event of any merger, consolidation, reorganization, recapitalization, stock split, reverse stock split, split up, combination of shares, exchange of shares, or other like change in capital structure (other than ordinary cash dividends), or other similar corporate event or transaction that affects our common stock, the Committee shall make adjustments to the number and kind of shares authorized by the 2014 Plan and covered under outstanding 2014 Plan awards as it determines appropriate and equitable.

Shares subject to 2014 Plan awards that expire without being fully exercised or that are otherwise forfeited, cancelled or terminated may again be made available for issuance under the 2014 Plan. In addition, shares withheld in settlement of a tax withholding obligation, or in satisfaction of the exercise price payable upon exercise of an option, will again become available for issuance under the 2014 Plan.

Types of Awards

The following types of awards may be granted to participants under the 2014 Plan: (i) incentive stock options, or ISOs; (ii) nonqualified stock options, or NQOs and together with ISOs, options, (iii) stock appreciation rights, (iv) restricted stock, or (v) restricted stock units.

Stock Options. An option entitles the holder to purchase from us a stated number of shares of common stock. An ISO may only be granted to an employee of ours or our eligible affiliates. The Committee will specify the number of shares of common stock subject to each option and the exercise price for such option, provided that the exercise price may not be less than the fair market value of a share of common stock on the date the option is granted. Notwithstanding the foregoing, if ISOs are granted to any 10% stockholder, the exercise price shall not be less than 110% of the fair market value of common stock on the date the option is granted.

Generally, options may be exercised in whole or in part through a cash payment. The Committee may, in its sole discretion, permit payment of the exercise price of an option in the form of previously acquired shares based on the fair market value of the shares on the date the option is exercised, through means of "net settlement," which involves the cancellation of a portion of the option to cover the cost of exercising the balance of the option or by such other means as it deems acceptable.

All options shall be or become exercisable in accordance with the terms of the applicable award agreement. The maximum term of an option shall be determined by the Committee on the date of grant but shall not exceed 10 years (5 years in the case of ISOs granted to any 10% stockholder). In the case of ISOs, the aggregate fair market value (determined as of the date of grant) of common stock with respect to which such ISOs become exercisable for the first time during any calendar year cannot exceed $100,000. ISOs granted in excess of this limitation will be treated as non-qualified stock options.

Stock Appreciation Rights. A stock appreciation right represents the right to receive, upon exercise, any appreciation in a share of common stock over a particular time period. The base price of a stock appreciation right shall not be less than the fair market value of a share of common stock on the date the stock appreciation right is granted. This award is intended to mirror the benefit the participant would have received if the Committee had granted the participant an option. The maximum term of a stock appreciation right shall be determined by the Committee on the date of grant but shall not exceed 10 years. Distributions with respect to stock appreciation rights may be made in cash, shares of common stock, or a combination of both, at the board of director's discretion.

Unless otherwise provided in an award agreement or determined by the Committee, if a participant terminates employment with us (or our affiliates) due to death or disability, the participant's unexercised options and stock appreciation rights may be exercised, to the extent they were exercisable on the termination date, for a period of twelve months from the termination date or until the expiration of the original award term, whichever period is shorter. Unless otherwise provided in an award agreement or determined by the Committee, if a participant terminates employment with us (or our affiliates) due to retirement from active employment with the us or any affiliate on or after age 65, the participant's unexercised options, all of which shall be treated as NQOs, may be exercised, to the extent they were exercisable on the termination date, for a period of twelve months from the termination date or until the expiration of the original award term, whichever period is shorter. If the participant terminates employment with us (or our affiliates) for cause, all unexercised options and stock appreciation rights (whether vested or unvested) shall terminate and be forfeited on the termination date. If the participant's employment terminates for any other reason, any vested but unexercised options and stock appreciation rights may be exercised by the participant, to the extent exercisable at the time of termination, for a period of 90 days from the termination date (or such time as specified by the Committee at or after grant) or until the expiration of the original option or stock appreciation right term, whichever period is shorter. Unless otherwise provided by the Committee, any options and stock appreciation rights that are not exercisable at the time of termination of employment shall terminate and be forfeited on the termination date.

Restricted Stock. A restricted stock award is a grant of shares of common stock, which are subject to forfeiture restrictions during a restriction period. Unless otherwise provided by the Committee in an award agreement, the restriction period shall lapse with respect to 100% of the unvested shares of restricted stock granted on the third anniversary of the date of grant. The Committee will determine the price, if any, to be paid by the participant for

each share of common stock subject to a restricted stock award. The restricted stock may be subject to Vesting Conditions. If the specified Vesting Conditions are not attained, the participant will forfeit the portion of the restricted stock award with respect to which those conditions are not attained, and the underlying common stock will be forfeited to us. At the end of the

restriction period, if the Vesting Conditions have been satisfied, the restrictions imposed will lapse with respect to the applicable number of shares. Unless otherwise provided in an award agreement or determined by the Committee, upon termination a participant will forfeit all restricted stock that then remains subject to forfeiture restrictions.

Restricted Stock Units. Restricted stock units are granted in reference to a specified number of shares of common stock and entitle the holder to receive, on the achievement of applicable Vesting Conditions, shares of common stock. Unless otherwise provided in an award agreement or determined by the Committee, upon termination a participant will forfeit all restricted stock units that then remain subject to forfeiture.

Change of Control

In the event of a change of control, unless otherwise provided in a grant agreement, employment agreement or other agreement between the Company and the participant, and unless otherwise determined by an affirmative vote of a majority of the board of directors prior to the occurrence of such change of control: (i) all outstanding stock options and stock appreciation rights shall immediately vest and become exercisable in full, whether or not otherwise exercisable at such time, and any such stock option and stock appreciation right shall remain exercisable in full thereafter until it expires pursuant to its terms; (ii) the restricted period of all restricted stock and restricted stock unit awards granted under the 2014 Plan shall lapse, and the shares of stock subject to such awards shall be distributed to the participant within thirty (30) days of the change of control to the extent permitted under Section 409A of the Code; and (iii) the restricted period of performance-based awards shall end, at which time the Committee shall determine the extent to which the participant has met the performance goals and shall grant partial or full payment of performance-based awards.

Repricing

Neither our board of directors nor the Committee may, without obtaining prior approval of our stockholders, reduce the exercise price in effect for outstanding options under the 2014 Plan.

Miscellaneous

Generally, awards granted under the 2014 Plan shall be nontransferable except by will or by the laws of descent and distribution. No participant shall have any rights as a stockholder with respect to shares covered by options or restricted stock units, unless and until such awards are settled in shares of common stock. The Company's obligation to issue shares or to otherwise make payments in respect of 2014 Plan awards will be conditioned on the Company's ability to do so in compliance with all applicable laws and exchange listing requirements. The 2014 Plan will expire 10 years after it becomes effective.

2023 Stock Incentive Plan

We intend to adopt the 2023 Plan, which will become effective upon the completion of this offering. Upon the effectiveness of the 2023 Plan, it will replace the 2014 Plan, except with respect to awards outstanding under the 2014 Plan, and no further awards will be available for grant under the 2014 Plan. Additionally, any awards that are cancelled or expire under the 2014 Plan will not be reissued. The 2023 Plan will become effective immediately after the registration statement of which this prospectus is a part is declared effective. The principal provisions of the 2023 Plan are summarized below.

Administration

The 2023 Plan vests broad powers in a committee to administer and interpret the 2023 Plan. Our board of directors has initially designated the compensation committee to administer the 2023 Plan. Except when limited by the terms of the 2023 Plan, the compensation committee has the authority to, among other things: select the persons to be granted awards; determine the type, size and term of awards; establish performance objectives and conditions for earning awards; determine whether such performance objectives and conditions have been met; and accelerate the vesting or exercisability of an award. In its discretion, the compensation committee may delegate all or part of its authority and duties with respect to granting awards to one or more of our officers, subject to certain limitations and provided applicable law so permits.

Our board of directors may amend, alter or discontinue the 2023 Plan and the compensation committee may amend any outstanding award at any time; provided, however, that no such amendment or termination may adversely affect awards then outstanding without the holder's permission. In addition, any amendments seeking to increase the total number of shares reserved for issuance under the 2023 Plan or modifying the classes of participants eligible to receive awards under the 2023 Plan will require ratification by our stockholders in accordance with applicable law. Additionally, as described more fully below, neither the compensation committee nor the board of directors is permitted to reprice outstanding options or stock appreciation rights without shareholder consent.

Eligibility

Any of our employees, directors, consultants, and other service providers, or those of our affiliates, are eligible to participate in the 2023 Plan and may be selected by the compensation committee to receive an award.

Vesting

The compensation committee determines the vesting conditions for awards. These conditions may include the continued employment or service of the participant, the attainment of specific individual or corporate performance goals, or other factors as determined in the compensation committee's discretion (collectively, "Vesting Conditions").

Shares of Stock Available for Issuance

Subject to certain adjustments, the maximum number of shares of common stock that may be issued under the 2023 Plan in connection with awards is 5,000,000 shares. In addition, the maximum number of shares of common stock that may be issued under the 2023 Plan will automatically increase on January 1 of each calendar year for a period of ten years commencing on January 1, 2024 and ending on (and including) January 1, 2033, in a number of shares of common stock equal to 4.5% of the total number of shares of common stock outstanding on December 31 of the preceding calendar year; provided, however that the board of directors may act prior to January 1 of a given calendar year to provide that the increase for such year will be a lesser number of shares of common stock. All available shares may be utilized toward the grant of any type of award under the 2023 Plan. The 2023 Plan imposes a $250,000 limitation on the total grant date fair value of awards granted to any non-employee director in his or her capacity as a non-employee director in any single calendar year.

In the event of any merger, consolidation, reorganization, recapitalization, stock split, reverse stock split, split up, spin-off, combination of shares, exchange of shares, stock dividend, dividend in kind, or other like change in capital structure (other than ordinary cash dividends), or other similar corporate event or transaction that affects our common stock, the compensation committee shall make adjustments to the number and kind of shares authorized by the 2023 Plan and covered under outstanding 2023 Plan awards as it determines appropriate and equitable. Shares subject to 2023 Plan awards that expire without being fully exercised or that are otherwise forfeited, cancelled or terminated may again be made available for issuance under the 2023 Plan. However, shares withheld in settlement of a tax withholding obligation, or in satisfaction of the exercise price payable upon exercise of an option, will not again become available for issuance under the 2023 Plan.

Types of Awards

The following types of awards may be granted to participants under the 2023 Plan: (i) incentive stock options, or ISOs; (ii) nonqualified stock options, or NQOs and together with ISOs, options, (iii) stock appreciation rights, (iv) restricted stock, or (v) restricted stock units.

Stock Options. An option entitles the holder to purchase from us a stated number of shares of common stock. An ISO may only be granted to an employee of ours or our eligible affiliates. The compensation committee will specify the number of shares of common stock subject to each option and the exercise price for such option, provided that the exercise price may not be less than the fair market value of a share of common stock on the date the option is granted. Notwithstanding the foregoing, if ISOs are granted to any 10% stockholder, the exercise price shall not be less than 110% of the fair market value of common stock on the date the option is granted.

Generally, options may be exercised in whole or in part through a cash payment. The compensation committee may, in its sole discretion, permit payment of the exercise price of an option in the form of previously acquired shares based on the fair market value of the shares on the date the option is exercised, through means of "net settlement," which involves the cancellation of a portion of the option to cover the cost of exercising the balance of the option or by such other means as it deems acceptable.

All options shall be or become exercisable in accordance with the terms of the applicable award agreement. The maximum term of an option shall be determined by the compensation committee on the date of grant but shall not exceed 10 years (5 years in the case of ISOs granted to any 10% stockholder). In the case of ISOs, the aggregate fair market value (determined as of the date of grant) of common stock with respect to which such ISOs become exercisable for the first time during any calendar year cannot exceed $100,000. ISOs granted in excess of this limitation will be treated as non-qualified stock options.

Stock Appreciation Rights. A stock appreciation right represents the right to receive, upon exercise, any appreciation in a share of common stock over a particular time period. The base price of a stock appreciation right shall not be less than the fair market value of a share of common stock on the date the stock appreciation right is granted. This award is intended to mirror the benefit the participant would have received if the compensation committee had granted the participant an option. The maximum term of a stock appreciation right shall be determined by the compensation committee on the date of grant but shall not exceed 10 years. Distributions with respect to stock appreciation rights may be made in cash, shares of common stock, or a combination of both, at the compensation committee's discretion.

Unless otherwise provided in an award agreement or determined by the compensation committee, if a participant terminates employment with us (or our affiliates) due to death or disability, the participant's unexercised options and stock appreciation rights may be exercised, to the extent they were exercisable on the termination date, for a period of twelve months from the termination date or until the expiration of the original award term, whichever period is shorter. If the participant terminates employment with us (or our affiliates) for cause, (i) all unexercised options and stock appreciation rights (whether vested or unvested) shall terminate and be forfeited on the termination date, and (ii) any shares in respect of exercised options or stock appreciation rights for which we have not yet delivered share certificates will be forfeited and we will refund to the participant the option exercise price paid for those shares, if any. If the participant's employment terminates for any other reason, any vested but unexercised options and stock appreciation rights may be exercised by the participant, to the extent exercisable at the time of termination, for a period of ninety days from the termination date (or such time as specified by the compensation committee at or after grant) or until the expiration of the original option or stock appreciation right term, whichever period is shorter. Unless otherwise provided by the compensation committee, any options and stock appreciation rights that are not exercisable at the time of termination of employment shall terminate and be forfeited on the termination date.

Restricted Stock. A restricted stock award is a grant of shares of common stock, which are subject to forfeiture restrictions during a restriction period. The compensation committee will determine the price, if any, to be paid by the participant for each share of common stock subject to a restricted stock award. The restricted stock may be subject to Vesting Conditions. If the specified Vesting Conditions are not attained, the participant will forfeit the portion of the restricted stock award with respect to which those conditions are not attained, and the underlying common stock will be forfeited to us. At the end of the restriction period, if the Vesting Conditions have been satisfied, the restrictions imposed will lapse with respect to the applicable number of shares. Unless otherwise provided in an award agreement or determined by the compensation committee, upon termination a participant will forfeit all restricted stock that then remains subject to forfeiture restrictions.

Restricted Stock Units. Restricted stock units are granted in reference to a specified number of shares of common stock and entitle the holder to receive, on the achievement of applicable Vesting Conditions, shares of common stock. Unless otherwise provided in an award agreement or determined by the Compensation committee, upon termination a participant will forfeit all restricted stock units that then remain subject to forfeiture.

Change in Control

In the event of a change in control, the compensation committee may, on a participant-by-participant basis: (i) cause any or all outstanding awards to become vested and immediately exercisable (as applicable), in whole or in part; (ii) cause any outstanding option or stock appreciation right to become fully vested and immediately exercisable for a reasonable period in advance of the change in control and, to the extent not exercised prior to that change in control, cancel that option or stock appreciation right upon closing of the change in control; (iii) cancel any unvested award or unvested portion thereof, with or without consideration; (iv) cancel any award in exchange for a substitute award; (v) redeem any restricted stock or restricted stock unit for cash and/or other substitute consideration with value equal to the fair market value of an unrestricted share on the date of the change in control; (vi) cancel any outstanding option or stock appreciation right with respect to all common stock for which the award remains unexercised in exchange for a cash payment equal to the excess (if any) of the fair market value of the common stock subject to the option or stock appreciation right over the exercise price of the option or stock appreciation right; (vii) impose vesting terms on cash or substitute consideration payable upon cancellation of an award that are substantially similar to those that applied to the cancelled award immediately prior to the change in control, and/or earn-out, escrow, holdback or similar arrangements, to the extent such arrangements are applicable to any consideration paid to stockholders in connection with the change in control; (viii) take such other action as the compensation committee shall determine to be reasonable under the circumstances; and/or (ix) in the case of any award subject to Section 409A of the Code, the compensation committee shall only be permitted to use discretion to alter the settlement timing of the award to the extent that such discretion would be permitted under Section 409A of the Code.

Repricing

Neither our board of directors nor the compensation committee may, without obtaining prior approval of our stockholders: (i) implement any cancellation/re-grant program pursuant to which outstanding options or stock appreciation rights under the 2023 Plan are cancelled and new options or stock appreciation rights are granted in replacement with a lower exercise per share; (ii) cancel outstanding options or stock appreciation rights under the 2023 Plan with an exercise price per share in excess of the then current fair market value per share for consideration payable in our equity securities; or (iii) otherwise directly reduce the exercise price in effect for outstanding options or stock appreciation rights under the 2023 Plan.

Miscellaneous

Generally, awards granted under the 2023 Plan shall be nontransferable except by will or by the laws of descent and distribution. No participant shall have any rights as a stockholder with respect to shares covered by options or restricted stock units, unless and until such awards are settled in shares of common stock. The Company's obligation to issue shares or to otherwise make payments in respect of 2023 Plan awards will be conditioned on the Company's ability to do so in compliance with all applicable laws and exchange listing requirements. The awards will be subject to our recoupment and stock ownership policies, as may be in effect from time to time. The 2023 Plan will expire 10 years after it becomes effective.

Employee Benefit Plans

Effective July 1, 2015, we adopted the Origin, Inc. 401(k) Profit Sharing Plan and Trust (the "401k Plan"). The 401k Plan is available to certain U.S. employees age 21 and older upon commencement of employment or July 1, 2015, whichever date is later. We match a portion of employee contributions up to 3.5% of their compensation. In addition, we may make profit sharing contributions. We made contributions to the 401k Plan of nil and $10,411 for the years ended December 31, 2022 and 2021, respectively.

In May 2015, we began making contributions to Simplified Employee Pension Plans ("SEP Plans") for certain of our executives. We can make discretionary contributions not to exceed 6.0% of employee wages. There were no contributions made to the SEP Plans for the years ended December 31, 2022 and 2021.

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CERTAIN RELATIONSHIPS AND RELATED PARTY TRANSACTIONS

Each of the related party transactions described below was negotiated on an arm's length basis. We believe that the terms of such agreements are as favorable as those we could have obtained from parties not related to us. The following are summaries of certain provisions of our related party agreements and are qualified in their entirety by reference to all of the provisions of such agreements. Because these descriptions are only summaries of the applicable agreements, they do not necessarily contain all of the information that you may find useful. We therefore urge you to review the agreements in their entirety. Copies of the forms of the agreements have been filed as exhibits to the registration statement of which this prospectus is a part and are available electronically on the website of the SEC at *www.sec.gov*.

In addition to the compensation arrangements, including employment, termination of employment and change in control arrangements, with our directors and executive officers, including those discussed in the sections titled "Management" and "Executive Compensation," the following is a description of each transaction since January 1, 2021 or any currently proposed transaction in which:

- we have been or are to be a party to;
- the amount involved exceeded or exceeds $120,000 or 1% of the average of our total assets as of the end of the last two completed fiscal years; and
- any of our directors, executive officers or holders of more than 5% of our outstanding capital stock, or any immediate family member of, or person sharing the household with, any of these individuals or entities, had or will have a direct or indirect material interest.

For information on our compensation arrangements, including employment, termination of employment and change in control arrangements, with our directors and executive officers, see the sections titled "Management" and "Executive Compensation."

On September 13, 2021, we granted stock options to purchase 175,000 shares of our common stock at an exercise price of $8.00 per common share to Terry Treadwell, who will serve as our Chief Clinical Officer effective upon consummation of the initial public offering. The options are exercisable for a period of ten years from the date of issuance, all of which vested immediately upon grant.

Michael Preston, our Chief Executive Officer, has made loans to the Company in the aggregate amount of $505,400, of which $384,400 remained outstanding as of December 31, 2022, as reflected in Note 13 of our accompanying audited financial statements. Subsequent to December 31, 2022, $10,000 was repaid, leaving a balance of $374,400 outstanding as of March 13, 2023. The loans are not evidenced by written documents. The loans do not bear interest and do not have a maturity date.

Alexander Dolgopolsky, a holder of more than 5% of our outstanding capital stock and our former Chief Scientist, has made a loan to the Company in the amount of $33,000, of which $20,000 has been repaid and $13,000 remained outstanding as of December 31, 2022, as reflected in Note 13 of our accompanying audited financial statements. The loan is not evidenced by a written document. The loan does not bear interest and does not have a maturity date.

John Fernandes, our Chief Financial Officer, has made loans to the Company in the aggregate amount of approximately $104,000, of which approximately $53,000 remained outstanding as of December 31, 2022, as reflected in Note 13 of our accompanying audited financial statements. Subsequent to December 31, 2022, $11,500 was repaid, leaving a balance of approximately $42,000 outstanding as of March 13, 2023. The loans are not evidenced by written documents. The loans do not bear interest and do not have a maturity date.

During the fiscal year ended 2022, David Dantzker, our Chief Medical Officer and Deputy Chairman, made a loan to the Company in the amount of $30,000, the entire amount of which remained outstanding as of December 31, 2022, as reflected in Note 13 of our accompanying audited financial statements, and which remains outstanding as of March 13, 2023. The loan is not evidenced by a written document. The loan does not bear interest and does not have a maturity date.

During the fiscal year ended 2022, Anthony Brampton, a director, made a loan to the Company in the amount of $25,000, the entire amount of which has been repaid as of December 31, 2022. The loan was not evidenced by a written document. The loan does not bear interest and does not have a maturity date.

On October 25, 2022, we issued a convertible promissory note in the amount of $25,000 to Anthony Brampton, a director, which bears interest at 6% per annum and matures three years from the date of issuance. The principal amount due under the note will be automatically converted into shares of our common stock upon the effectiveness of the registration statement of which this prospectus is a part, at a conversion price equal to the quotient obtained by dividing (i) $25,000 plus (if applicable) any accrued but unpaid interest under the note by (ii) 50% of the initial public offering price per share.

Indemnification Agreements

We intend to enter, into separate indemnification agreements with each of our directors and executive officers, in addition to the indemnification that will be provided for in our certificate of incorporation and bylaws. The indemnification agreements and our amended restated certificate of incorporation and bylaws that will be in effect prior to the effectiveness of this offering require us to indemnify our directors, executive officers and certain controlling persons to the fullest extent permitted by Delaware law. See the section titled "Description of Securities — Limitations on Liability and Indemnification of Officers and Directors" for additional information.

Our Policy Regarding Related Party Transactions

Our board of directors recognizes the fact that transactions with related persons present a heightened risk of conflicts of interest and/or improper valuation (or the perception thereof). Prior to the closing of this offering, our board of directors will adopt a written policy on transactions with related persons that is in conformity with the requirements for issuers having publicly held common stock that is listed on NYSE American. Under the new policy:

- any related person transaction, and any material amendment or modification to a related person transaction, must be reviewed and approved or ratified by the Audit Committee; and
- any employment relationship or transaction involving an executive officer and any related compensation must be approved by the compensation committee of the board of directors or recommended by the compensation committee to the board of directors for its approval.

In connection with the review and approval or ratification of a related person transaction:

- management must disclose to the committee or disinterested directors, as applicable, the name of the related person and the basis on which the person is a related person, the material terms of the related person transaction, including the approximate dollar value of the amount involved in the transaction, and all the material facts as to the related person's direct or indirect interest in, or relationship to, the related person transaction;
- management must advise the committee or disinterested directors, as applicable, as to whether the related person transaction complies with the terms of our agreements governing our material outstanding indebtedness that limit or restrict our ability to enter into a related person transaction;
- management must advise the committee or disinterested directors, as applicable, as to whether the related person transaction will be required to be disclosed in our applicable filings under the Securities Act or the Exchange Act, and related rules, and, to the extent required to be disclosed, management must ensure that the related person transaction is disclosed in accordance with the Securities Act and the Exchange Act and related rules; and
- management must advise the committee or disinterested directors, as applicable, as to whether the related person transaction constitutes a "personal loan" for purposes of Section 402 of SOX.

In addition, the related person transaction policy provides that the committee or disinterested directors, as applicable, in connection with any approval or ratification of a related person transaction involving a non-

employee director, should consider whether such transaction would compromise the director's status as an "independent," "outside," or "non-employee" director, as applicable, under the rules and regulations of the SEC, NYSE American, and the Code.

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PRINCIPAL STOCKHOLDERS

The following table sets forth the beneficial ownership of our common stock as of March 13, 2023, by:

- each person, or group of affiliated persons, who is known by us to beneficially own more than 5% of our common stock;
- each of the named executive officers;
- each of our directors; and
- all of our current executive officers and directors as a group

As of March 13, 2023, we had 34,572,125 shares of common stock outstanding, held by approximately 390 stockholders of record. As of March 13, 2023, we had 10,000 shares of Series B Preferred Stock outstanding, held by one stockholder of record.

We have determined beneficial ownership in accordance with the rules of the SEC, and thus it represents sole or shared voting or investment power with respect to our securities. Unless otherwise indicated below, to our knowledge, the persons and entities named in the table have sole voting and sole investment power with respect to all shares that they beneficially owned, subject to community property laws where applicable. The information does not necessarily indicate beneficial ownership for any other purpose, including for purposes of Sections 13(d) and 13(g) of the Exchange Act.

We have based our calculation of the percentage of beneficial ownership of our common stock prior to this offering on 35,348,025 shares of our common stock outstanding as of March 13, 2023, which gives effect to the issuance of 775,900 shares of common stock issuable upon conversion of the Private Placement Notes. We have based our calculation of the percentage of beneficial ownership after this offering on shares of our voting securities outstanding immediately after the completion of this offering, assuming no exercise by the underwriters of their option to purchase additional shares and based on an assumed initial public offering price of $5.00 per share, which is the midpoint of the price range set forth on the cover page of this prospectus. We have deemed shares of our common stock subject to stock options that are currently exercisable or exercisable within 60 days of March 13, 2023, to be outstanding and to be beneficially owned by the person holding the stock option for the purpose of computing the percentage ownership of that person. We did not deem these shares outstanding, however, for the purpose of computing the percentage ownership of any other person. Unless otherwise indicated, the address of each beneficial owner listed in the table below is c/o Origin Life Sciences, Inc., 2 Research Way, Third Floor, Princeton, NJ 08540.

	Shares Beneficially Owned Prior to this Offering		Shares Beneficially Owned After this Offering	
Name of Beneficial Owner	**Shares of Common Stock**	**Percentage of Common Stock**	**Shares of Common Stock**	**Percentage of Common Stock**
Named Executive Officers and Directors				
Michael Preston	12,626,950[(1)]	27.09%	12,626,950	25.45%
David Dantzker, M.D.	1,400,000[(2)]	3.81%	1,400,000	3.52%
John Fernandes	437,150[(3)]	1.22%	437,150	1.13%
Anthony Brampton	136,500[(4)]	*	136,500	*
Howard Nelson	1,647,975[(5)]	4.66%	1,647,975	4.30%
Victor Micati	99,575[(6)]	*	99,575	*
All executive officers and directors as a group (6 persons)	16,348,150	33.70%	16,348,500	31.74%
5% Stockholders other than executive officers and directors				

Square Table LLC	8,810,375[7]	24.69%	8,810,375	17.76%
Isaac Anthony	1,785,875[8]	5.05%	1,785,875	4.66%
Alexander Dolgopolsky, Ph.D.	3,671,500[9]	10.39%	3,671,500	9.57%

* Represents beneficial ownership of less than one percent.

(1) Includes: (i) 481,075 shares of common stock owned by Michael Preston; (ii) 218,750 shares of common stock owned by the Matthew JT Preston 2015 Child's Trust; (iii) 218,750 shares of common stock owned by the Robert TN Preston 2015 Child's Trust; (iv) 218,750 shares of common stock owned by the Hanna D Preston 2015 Child's Trust; (v) 218,750 shares of common stock owned by the Samuel RM Preston 2015 Child's Trust; (vi) a grant of an option to purchase 525,000 shares

of common stock at an exercise price of $1.03 per share, which is exercisable until March 31, 2024; (vii) a warrant to purchase up to 804,825 shares of common stock at an exercise price of $1.03 per share, which is exercisable until June 30, 2027; (viii) a warrant to purchase up to 1,130,675 shares of common stock at an exercise price of $3.49 per share, which is exercisable until February 20, 2028; and (ix) 8,810,375 shares of common stock beneficially owned by Square Table LLC, a limited liability company of which Michael Preston is the sole manager with sole voting and disposition power over such shares. The beneficiaries of the Matthew JT Preston 2015 Child's Trust, Robert TN Preston 2015 Child's Trust, the Hanna D Preston 2015 Child's Trust and Samuel RM Preston 2015 Child's Trust (collectively, the "Preston Trusts") are Michael Preston's children. The trustee of the Preston Trusts is Sherri Preston, Michael Preston's wife, who has sole voting and disposition power over the shares held by the Preston Trusts. The Preston Trusts have an address at 8 Abbey Road, Orangeburg NY 10962.

(2) Includes: (i) a grant of an option to purchase 875,000 shares of common stock at an exercise price of $0.20 per share, which is exercisable until January 15, 2026; and (ii) a grant of an option to purchase 525,000 shares of common stock at an exercise price of $1.03 per share, which is exercisable until March 31, 2024.

(3) Includes: (i) 57,400 shares of common stock owned by John Fernandes; (ii) a warrant to purchase up to 52,500 shares of common stock at an exercise price of $3.49 per share, which is exercisable until May 1, 2025; (iii) a warrant to purchase up to 122,500 shares of common stock at an exercise price of $3.49 per share, which is exercisable until October 5, 2025; (iv) a warrant to purchase up to 126,000 shares of common stock at an exercise price of $4.12 per share, which is exercisable until September 14, 2027; and (v) a warrant to purchase up to 78,750 shares of common stock at an exercise price of $8.00 per share, which is exercisable until January 29, 2031.

(4) Includes: (i) 84,000 shares of common stock owned by Anthony Brampton; (ii) a grant of an option to purchase 21,875 shares of common stock at an exercise price of $3.49 per share, which is exercisable until September 30, 2024; and (iii) a grant of an option to purchase 30,625 shares of common stock at an exercise price of $3.49 per share, which is exercisable until October 5, 2025.

(5) Includes: (i) 260,925 shares of common stock owned by Howard Nelson; (ii) 1,387,050 shares of common stock owned by the HAN Trust, of which Howard Nelson is trustee with sole voting and disposition power with respect to the shares owned by the trust, with an address at 20 Back Brook Rd, Ringoes, NJ 08551.

(6) Includes: (i) 47,075 shares of common stock owned by Victor Micati; (ii) a grant of an option to purchase 21,875 shares of common stock at an exercise price of $3.49 per share, which is exercisable until September 30, 2024; and (iii) a grant of an option to purchase 30,625 shares of common stock at an exercise price of $3.49 per share, which is exercisable until October 5, 2025.

(7) Includes: (i) 8,473,500 shares of common stock; and (ii) 336,875 shares of common stock issuable upon the exercise of the LFEIF Warrants at an exercise price of $4.00 per share. Michael Preston, our Chairman and Chief Executive Officer, is the sole manager of Square Table LLC.

(8) Includes: (i) 1,733,375 shares of common stock owned by Isaac Anthony; and (ii) 52,500 shares of common stock owned by IRA Services Trust Company FBO Isaac Anthony.

(9) Includes: (i) 3,096,975 shares of common stock owned by Alexander Dolgopolsky; (ii) 574,525 shares owned by the Luba Dolgopolsky Trust Fund, of which Alexander Dolgopolsky's daughter is the beneficiary and Yelena Epstein, Alexander Dolgopolsky's wife, is the trustee with sole voting and disposition power with respect to the shares owned by the trust. The Luba Dolgopolsky Trust Fund has address at 63 Buckhorn Road, Richboro, PA 18954.

The following is a chart representing beneficial ownership of our outstanding preferred stock, all of which are Series B Preferred Stock, as of March 13, 2023. However, within thirty days of consummation of this offering, all of the outstanding shares of Series B Preferred Stock will be redeemed by us, the cost of which will be paid, in part, from the proceeds of this offering. Therefore, upon the redemption of all outstanding shares of Series B Preferred Stock, which will take place within thirty days of consummation of this offering pursuant to an agreement with the holder of the Series B Preferred Stock, there will be no shares of Series B Preferred Stock outstanding.

	Shares Beneficially Owned Prior to this Offering		Shares Beneficially Owned After this Offering	
Name of Beneficial Owner	Shares of Series B Preferred Stock	Percentage of Series B Preferred Stock	Shares of Series B Preferred Stock	Percentage of Series B Preferred Stock
LF Equity Income Fund	10,000	100%	10,000	100%

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DESCRIPTION OF SECURITIES

The following description of our securities and the provisions of our amended and restated certificate of incorporation and our amended and restated bylaws and our second amended and restated certificate of incorporation and second amended and restated bylaws, which will become effective prior to the effectiveness of this offering, are summaries and are qualified by reference to such documents. We have filed copies of these documents with the SEC as exhibits to our registration statement of which this prospectus forms a part. The descriptions of the common stock and preferred stock are summaries and are qualified by reference to the amended and restated certificate of incorporation, amended and restated bylaws, second amended and restated certificate of incorporation, and second amended and restated bylaws.

Summary of Amended and Restated Certificate of Incorporation and Amended and Restated Bylaws (currently in effect)

Pursuant to our Amended and Restated Certificate of Incorporation, we are authorized to issue 476,000,000 shares of capital stock. Our authorized capital stock consists of:

- 300,000,000 shares of common stock, par value $0.01 per share ("Common Stock");
- 175,000,000 shares of special voting common stock, par value $0.01 per share ("Special Voting Common Stock"); and
- 1,000,000 shares of preferred stock, par value $0.01 per share ("Preferred Stock").

We are selling shares of Common Stock in this offering based on an assumed initial public offering price of $5.00 per share, which is the midpoint of the price range set forth on the cover page of this prospectus. All of our Common Stock outstanding upon consummation of this offering will be fully paid and non-assessable.

The following description of our securities and provisions of our amended and restated certificate of incorporation and amended and restated bylaws are summaries of material terms and provisions and are qualified by reference to our amended and restated certificate of incorporation and amended and restated bylaws, copies of which have been filed with the SEC as exhibits to the registration statement of which this prospectus is a part.

Common Stock and Special Voting Common Stock

Holders of Common Stock and Special Voting Common stock have the same rights and privileges and rank equally, share ratably and are identical in all respects, except with regard to voting. Shares of Common Stock and Special Voting Common Stock are treated equally, identically and ratably, on a per share basis, with respect to: (i) the payment of dividends; (ii) liquidation, dissolution, distribution or winding up of the Company; and (iii) a merger or consolidation with respect to any consideration into which shares are converted or any consideration paid. In connection with a subdivision, merger or reclassification, shares of Common Stock and Special Voting Common Stock shall be proportionately subdivided, combined or reclassified in a manner that maintains the same proportionate equity ownership as between the holders of Common Stock and Special Voting Common Stock. Shares of Common Stock and Special Voting Common Stock are not redeemable and do not carry preemptive rights. The absence of preemptive rights could result in a dilution of the interest of the existing stockholders should additional shares of our Common Stock and Special Voting Common Stock be issued. In addition, the rights of holders of our Common Stock and Special Voting Common Stock are subject to, and may be adversely affected by, the rights of holders of shares of any series of Preferred Stock currently designated or that we may designate and issue in the future. On March 8, 2023, effective immediately upon the filing of the Certificate of Amendment, each share of Special Voting Common Stock issued and outstanding or held in treasury automatically, and without any further action required by us or the holders of the Special Voting Common Stock, was converted into and is treated as one outstanding, fully-paid and nonassessable share (or treasury share) of Common Stock.

Voting Rights

The holders of Common Stock and the holders of Special Voting Common Stock shall at all times vote on all matters (including the election of directors) together as one class except as otherwise required by the DGCL. Our directors are elected by a plurality of the votes cast by the stockholders entitled to vote at our annual meeting of stockholders, and will not be entitled to cumulative voting rights.

Each holder of Common Stock is entitled to one vote for each share of Common Stock held on any matter that is submitted to a vote or for the consent of the stockholders of the Company. Holders of all outstanding shares of Special Voting Common Stock are entitled to, in the aggregate, a total number of votes for all such outstanding shares of Special Voting Common Stock held on any matter that is submitted to a vote or for the consent of stockholders, equal to the lesser of: (i) the aggregate number of outstanding shares of Special Voting Common Stock; and (ii) 19.5% of the total number of votes attaching to all outstanding equity securities of the Company (including Common Stock, Special Voting Common Stock and voting preferred stock) which have the right to vote or consent on the matter submitted. All voting rights of the Special Voting Common Stock shall be divided proportionately among the outstanding shares of Special Voting Common Stock (including, if applicable, on a fractional basis).

Preferred Stock

Our Board is authorized, without action by our stockholders, to designate and issue up to 1,000,000 shares of preferred stock in one or more series, 10,000 of which have been designated as Series B Preferred Stock. No shares of preferred stock will be outstanding upon the redemption of all outstanding shares of the Series B Preferred Stock within thirty days of completion of this offering, pursuant to an agreement with the holder of the Series B Preferred Stock.

Our Board has the right to fix the voting rights, if any, designations, powers, preferences, the relative, participating, optional or other special rights, if any, and any qualifications, limitations and restrictions thereof, applicable to the shares of each series of designated preferred stock. Our Board is able to, without stockholder approval, issue shares of preferred stock with voting and other rights that could adversely affect the voting power and other rights of the holders of our Common Stock and could have anti-takeover effects. The ability of our Board to issue preferred stock without stockholder approval could have the effect of delaying, deferring or preventing a change of control of us or the removal of existing management.

Series B Preferred Stock

On January 9, 2020, the Company executed a Securities Purchase Agreement with LFEIF, pursuant to which LFEIF purchased 10,000 shares of Series B Preferred Stock of the Company for $1,000,000 and was granted warrants to purchase 245,000 shares of Common Stock. On July 6, 2020, the Company executed a second Securities Purchase Agreement with LFEIF, pursuant to which LFEIF agreed to purchase 2,500 shares of Series B Preferred Stock, together with warrants to purchase 91,875 shares of Common Stock, for $250,000 (the warrants granted to LFEIF in January 2020 and July 2020, to purchase in the aggregate 336,875 shares of Common Stock, are collectively referred to as the "LFEIF Warrants," the terms of which are described under "Description of Securities — Warrants — LFEIF Warrants." However, the Certificate of Designations, Preferences and Rights of the Series B Preferred Stock (the "Series B COD") only designated 10,000 shares of Series B Preferred Stock, all of which were previously issued and outstanding. In lieu of filing an amendment to the Series B COD to increase the number of shares designated as Series B Preferred Stock and issuing to LFEIF an additional 2,500 shares of Series B Preferred Stock, LFEIF agreed to accept a convertible promissory note in the principal amount of $250,000, the terms of which are described under "Description of Securities — Convertible Promissory Notes."

The following are the key terms of the Series B Preferred Stock pursuant to the Series B COD, with a par value $0.01 per share and a stated value of $100 per share ("Series B Stated Value"):

Dividends: Each holder of the Series B Preferred Stock is entitled to receive dividends at the simple rate of twenty percent (20%) of the Series B Stated Value per share per annum, payable in cash only upon redemption of the Series B Preferred Stock, prior to and in preference to any declaration or payment of any dividend on the Common Stock.

Redemption Right: Commencing on the earlier to occur of (i) December 31, 2020 and (ii) the completion by the Company (following the closing of the financing in which the shares of Series B Preferred Stock are first issued) of an equity or debt financing yielding gross proceeds of $15 million or greater (the "Series B Redemption Date"), at the option of the holders of a majority of the then outstanding shares of the Series B Preferred Stock, the Company shall be required to redeem all of the shares of Series B Preferred Stock for cash. The redemption

price paid shall be equal to the Series B Stated Value for each share of Series B Preferred Stock plus accrued but unpaid dividends thereon, multiplied by the number of shares of Series B Preferred Stock held by such holder (the "Redemption Purchase Price") (which, in the case of shares of Series B Preferred Stock purchased by LFEIF, would be $1.25 million plus accrued dividends). Notwithstanding the foregoing, at any time, at the election of the Company and upon written notice to the

holders of the Series B Preferred Stock, the Company shall have the right to effect a redemption of all of the shares of Series B Preferred Stock of each holder, for cash, for an amount equal to the Redemption Purchase Price. Upon the date the Redemption Purchase Price is paid to a holder, the Series B Preferred Stock held by such holder shall be deemed cancelled without any further action required of the holder or the Company.

No Conversion. The shares of Series B Preferred Stock are not convertible into shares of Common Stock or other Company securities.

Liquidation Preference. In the event of a liquidation, dissolution or winding up of the Company, the holders of the Series B Preferred Stock shall be entitled to receive out of the assets of the Company legally available for distribution, prior to and in preference to distributions to the holders of Common Stock or any subordinate Company capital stock, and either in preference to or pari passu with the holders of any other series of preferred stock that may be issued in the future that is expressly made senior or pari passu, as the case may be, an amount equal to the Series B Stated Value per share of the Series B Preferred Stock plus accrued but unpaid dividends thereon. The remaining assets of the Company shall be distributed to the holders of the outstanding equity securities of the Company in accordance with their liquidation rights.

Voting Rights. As of and following January 21, 2020, each share of Series B Preferred Stock will entitle the holder thereof to one (1) vote on any matter brought before holders of Common Stock at any annual or special meeting of the Company's stockholders.

Warrants

LFEIF Warrants

On January 9, 2020 and July 13, 2020, we issued the LFEIF Warrants, which grant the holders the right to purchase up to an aggregate of 336,875 shares of Common Stock at the exercise price of $4.00 per share. The LFEIF Warrants expire on the fifth (5th) anniversary of the date of issuance. Square Table LLC, a limited liability company of which Michael Preston, our Chief Executive Officer, is the sole manager, is the holder of the LFEIF Warrants as a result of a third-party transaction.

Other Outstanding Warrants

On June 30, 2014 we issued a warrant to purchase up to 804,825 shares of Common Stock at an exercise price of $1.03 per share to Michael Preston, who at the time was our Executive Chairman and Acting Chief Financial Officer, in pursuant to performance requirements in his employment contract. The warrant expires on the thirteenth (13th) anniversary of the date of issuance.

On February 20, 2015, we issued a warrant to purchase up to 1,130,675 shares of Common Stock at an exercise price of $3.49 per share to Michael Preston, who at the time was our Executive Chairman and Acting Chief Financial Officer, pursuant to performance requirements in his employment contract. The warrant expires on the thirteenth (13th) anniversary of the date of issuance.

On March 29, 2018, we issued a warrant to purchase 197,400 shares of Common Stock at an exercise price of $6.29 to Wheatsheaf Group Limited ("Wheatsheaf") in connection with its purchase of the company's interest in OWS Agri Limited, an entity previously owned jointly by us and Wheatsheaf. The warrant expires on the seventh (7th) anniversary of the date of issuance.

On June 30, 2022, August 16, 2022, September 23, 2022, October 25, 2022, November 30, 2022 and December 21, 2022, we issued to Boustead Securities, LLC, as placement agent for the Private Placement, warrants to purchase up to a number of shares of our common stock equal to 7% of the shares of our common stock into which the Private Placement Notes in the aggregate principal amount of $1,939,749.70 convert. The warrants expire on the fifth (5th) anniversary of the date of issuance.

On October 28, 2022, we issued a warrant to purchase 3,500 shares of our common stock at an exercise price of $0.000057 per share to an advisor for services rendered. The warrant expires on the second anniversary of the date of issuance.

On November 18, 2022, we issued a warrant to purchase 13,125 shares of our common stock at an exercise price of $0.000057 per share to an advisor for services rendered. The warrant expires on the seventh anniversary of the date of issuance.

On November 18, 2022, we issued a warrant to purchase 8,750 shares of our common stock at an exercise price of $5.14 per share to an advisor for services rendered. The warrant expires on the seventh anniversary of the date of issuance.

On November 18, 2022, we issued a warrant to purchase 13,125 shares of our common stock at an exercise price of $8.00 per share to an advisor for services rendered. The warrant expires on the seventh anniversary of the date of issuance.

Representative's Warrants

We have agreed to issue to the Representative warrants to purchase 210,000 shares of our Common Stock (the "Representative's Warrants") as a portion of the underwriting compensation payable to the underwriters in connection with this offering. The Representative's Warrants will be exercisable commencing six months after the date of effectiveness of the registration statement of which this prospectus forms a part, at an exercise price equal to 110% of the initial public offering price, for a period of five years from such effective date. Please see "Underwriting — Representative's Warrants" for a description of the Representative's Warrants.

Stock Options

As of the date of this prospectus, there are 5,075,000 shares of Common Stock reserved for issuance pursuant to the 2014 Plan, of which 3,084,550 are reserved for issuance pursuant to stock option agreements issued pursuant to the 2014 Plan, with a weighted exercise price of $3.31 per share, and 1,741,600 shares remain available for issuance.

Convertible Promissory Notes

We issued the LFEIF Note, dated as of July 6, 2020, in the principal amount of $250,000, which bears interest at the fixed simple rate of 20% per annum. The LFEIF Note is convertible, at the direction of LFEIF, into shares of our Series B Preferred Stock, such number of shares to be calculated by dividing the principal amount of the LFEIF Note, plus accrued interest, by $100, rounded to the nearest whole shares. If the LFEIF Note has not been converted to Series B Preferred Stock prior to the effective date of this offering, the principal amount plus accrued interest due under the LFEIF Note shall be due and payable thirty (30) days after the closing of this offering.

On June 20, 2022, we commenced the Private Placement of up to $5,000,000 of convertible promissory notes, pursuant to which we issued: (i) convertible promissory notes in the principal aggregate amount of $450,000 on June 30, 2022; (ii) convertible promissory notes in the principal aggregate amount of $60,000 on August 16, 2022; (iii) convertible promissory notes in the principal aggregate amount of $725,000 on September 23, 2022; (iv) convertible promissory notes in the principal aggregate amount of $315,000 on October 25, 2022; (v) convertible promissory notes in the principal aggregate amount of $288,000 on November 30, 2022; and (vi) a convertible promissory note in the principal amount of $101,749.70 on December 21, 2022 (the Private Placement Notes). The promissory note issued in December 2022 was pursuant to a Subscription Agreement that was executed on or before November 30, 2022. In total the aggregate principal amount of the Private Placement Notes issued in the Private Placement is $1,939,749.70, pursuant to which we received net proceeds of approximately $1,600,000. The Private Placement has terminated. The Private Placement Notes bear interest at 6% per annum and mature three years from the date of issuance. The principal amount due under the Private Placement Notes will be automatically converted into shares of our common stock upon the effectiveness of the registration statement of which this prospectus is a part, with all accrued interest under the Private Placement Notes waived upon conversion pursuant to the terms thereof. The Private Placement Notes are convertible into shares of common stock at a conversion price equal to the quotient obtained by dividing (i) the entire principal amount of the Private Placement Notes plus (if applicable) any accrued but unpaid interest under the Private Placement Notes by (ii) 50% of the initial offering price per share. The holders of the Private Placement Notes are prohibited from converting the Private Placement Notes if such conversion would result in a holder owning

in excess of 4.99% of our outstanding common stock. The holders of the Private Placement Notes have agreed not to publicly sell or assign such common stock for a period of 180 days following completion of this offering. The holders of certain

of the Private Placement Notes desire to be named as selling stockholders in the Resale Prospectus and, therefore, the terms of their lock-up agreements will be waived by Boustead Securities, LLC immediately prior to the listing of our common stock on a national securities exchange.

Summary of Second Amended and Restated Certificate of Incorporation and Second Amended and Restated Bylaws (to be in effect prior to effectiveness of this offering)

Prior to the effectiveness of this offering, our authorized capital stock will consist of 100,000,000 shares of capital stock:

- 90,000,000 shares of common stock, par value $0.01 per share; and
- 10,000,000 shares of preferred stock, par value $0.01 per share.

We are selling shares of common stock in this offering based on an assumed initial public offering price of $5.00 per share, which is the midpoint of the price range set forth on the cover page of this prospectus. All of our common stock outstanding upon consummation of this offering will be fully paid and non-assessable.

The following description of our capital stock and provisions of our second amended and restated certificate of incorporation and second amended and restated bylaws, which will become effective prior to the effectiveness of this offering, are summaries of material terms and provisions and are qualified by reference to our second amended and restated certificate of incorporation and second amended and restated bylaws, copies of which have been filed with the SEC as exhibits to the registration statement of which this prospectus is a part. The descriptions of our common stock and preferred stock reflect the content of the second amended and restated certificate of incorporation and second amended and restated bylaws that will become effective prior to the effectiveness of this offering.

Certain provisions of our second amended and restated certificate of incorporation and our second amended and restated bylaws summarized below (both of which will become effective prior to the effectiveness of this offering), and under Delaware law, may be deemed to have an anti-takeover effect and may delay or prevent a tender offer or takeover attempt that a stockholder might consider in its best interest, including those attempts that might result in a premium over the market price for the shares of common stock.

Common Stock

Upon effectiveness of this offering, we will be authorized to issue one class of common stock. Holders of our common stock will be entitled to one vote for each share of common stock held of record for the election of our directors and all other matters requiring stockholder action, except with respect to amendments to our certificate of incorporation that alter or change the powers, preferences, rights or other terms of any outstanding preferred stock if the holders of such affected series of preferred stock are entitled to vote on such an amendment. Our directors are elected by a plurality of the votes cast by the stockholders entitled to vote at our annual meeting of stockholders, and will not be entitled to cumulative voting rights. Holders of common stock will be entitled to receive such dividends, if any, as may be declared from time to time by our Board of Directors in its discretion out of funds legally available therefor. The payment of dividends, if any, on shares of our common stock will be subject to the prior payment of dividends on any outstanding preferred stock, of which there will be none upon redemption of the Series B Preferred within thirty days following completion of this offering. Upon our liquidation or dissolution, the holders of our common stock will be entitled to receive a pro rata portion of all assets remaining available for distribution to stockholders after payment of all liabilities and provision for the liquidation of any shares of preferred stock outstanding at that time. The holders of our common stock will have no preemptive, subscription or redemption rights, and will have no rights to convert their common stock into any other securities. The absence of preemptive rights could result in a dilution of the interest of the existing stockholders should additional shares of our common stock be issued. In addition, the rights of holders of our common stock are subject to, and may be adversely affected by, the rights of holders of shares of any series of preferred stock that we may designate and issue in the future.

Preferred Stock

Upon effectiveness of this offering, our Board of Directors will be authorized, without action by our stockholders, to designate and issue up to 10,000,000 shares of preferred stock in one or more series, 10,000 of which will

be designated as Series B Preferred Stock. Our Board of Directors will have the right to fix the voting rights, if any, designations, powers, preferences, the relative, participating, optional or other special rights, if any, and any qualifications, limitations and restrictions thereof, applicable to the shares of each series of designated preferred stock. Our Board of Directors

will be able to, without stockholder approval, issue shares of preferred stock with voting and other rights that could adversely affect the voting power and other rights of the holders of our common stock and could have anti-takeover effects. The ability of our Board of Directors to issue preferred stock without stockholder approval could have the effect of delaying, deferring or preventing a change of control of us or the removal of existing management. Although we do not currently intend to issue any shares of preferred stock, we cannot assure you that we will not do so in the future.

Series B Preferred Stock

Our second amended and restated certificate of incorporation will designate 10,000 shares of our authorized preferred stock as Series B Preferred Stock, all of which will be outstanding upon effectiveness of the second amended and restated certificate of incorporation. Upon the redemption of all outstanding shares of Series B Preferred Stock, which will take place within thirty days of consummation of this offering pursuant to an agreement with the holder of the Series B Preferred Stock, there will be no shares of Series B Preferred Stock outstanding.

The following are the key terms of the Series B Preferred Stock, with a par value $0.01 per share and a stated value of $100 per share ("Series B Stated Value"), pursuant to the second amended and restated certificate of incorporation:

Dividends: Each holder of the Series B Preferred Stock is entitled to receive dividends at the simple rate of twenty percent (20%) of the Series B Stated Value per share per annum, payable in cash only upon redemption of the Series B Preferred Stock, prior to and in preference to any declaration or payment of any dividend on the Common Stock.

Redemption Right: Commencing on completion by the Company (following the closing of the financing in which the shares of Series B Preferred Stock are first issued) of an equity or debt financing yielding gross proceeds of $15 million or greater (the "Series B Redemption Date"), at the option of the holders of a majority of the then outstanding shares of the Series B Preferred Stock, the Company shall be required to redeem all of the shares of Series B Preferred Stock for cash. The redemption price paid shall be equal to the Series B Stated Value for each share of Series B Preferred Stock plus accrued but unpaid dividends thereon, multiplied by the number of shares of Series B Preferred Stock held by such holder (the "Redemption Purchase Price") (which, in the case of shares of Series B Preferred Stock purchased by LFEIF, would be $1.25 million plus accrued dividends). Notwithstanding the foregoing, at any time, at the election of the Company and upon written notice to the holders of the Series B Preferred Stock, the Company shall have the right to effect a redemption of all of the shares of Series B Preferred Stock of each holder, for cash, for an amount equal to the Redemption Purchase Price. Upon the date the Redemption Purchase Price is paid to a holder, the Series B Preferred Stock held by such holder shall be deemed cancelled without any further action required of the holder or the Company.

No Conversion. The shares of Series B Preferred Stock are not convertible into shares of Common Stock or other Company securities.

Liquidation Preference. In the event of a liquidation, dissolution or winding up of the Company, the holders of the Series B Preferred Stock shall be entitled to receive out of the assets of the Company legally available for distribution, prior to and in preference to distributions to the holders of Common Stock or any subordinate Company capital stock, and either in subordinate to or pari passu with the holders of any other series of preferred stock that may be issued in the future that is expressly made senior or pari passu, as the case may be, an amount equal to the Series B Stated Value per share of the Series B Preferred Stock plus accrued but unpaid dividends thereon. The remaining assets of the Company shall be distributed to the holders of the outstanding equity securities of the Company in accordance with their liquidation rights.

Voting Rights. Each share of Series B Preferred Stock will entitle the holder thereof to one (1) vote on any matter brought before holders of Common Stock at any annual or special meeting of the Company's stockholders.

Forum Selection

Our second amended and restated certificate of incorporation and second amended and restated bylaws, both of which will be in effect prior to the effectiveness of this offering, will provide that unless we consent in writing

to the selection of an alternative forum, the Court of Chancery of the State of Delaware (or, in the event that the Court of Chancery does not have jurisdiction, the federal district court for the District of Delaware or other state courts of the

State of Delaware) is the exclusive forum for (i) any derivative action or proceeding brought on our behalf; (ii) any action asserting a claim of breach of fiduciary duty owed by, or other wrongdoing by, any director, officer, employee or agent of the Company to the Company or our stockholders, creditors or other constituents; (iii) any action asserting a claim against us arising pursuant to the Delaware General Corporation Law, our second amended and restated certificate of incorporation or our second amended and restated bylaws; (iv) any action to interpret, apply, enforce or determine the validity of our second amended and restated certificate of incorporation or our second amended and restated bylaws; or (v) or any action asserting a claim against us that is governed by the internal affairs doctrine; provided that, the exclusive forum provision will not apply to suits brought to enforce any liability or duty created by the Securities Act, Exchange Act or any other claim for which the federal courts have exclusive jurisdiction; and provided further that, if and only if the Court of Chancery of the State of Delaware dismisses any such action for lack of subject matter jurisdiction, or the Company consents in writing to the selection of an alternative forum, such action may be brought in another state or federal court sitting in the State of Delaware. Our second amended and restated certificate of incorporation and second amended and restated bylaws will also provide that the federal district courts of the United States of America will be the exclusive forum for the resolution of any complaint asserting a cause of action against us or any of our directors, officers, employees or agents and arising under the Securities Act or Exchange Act. Nothing in our second amended and restated certificate of incorporation or second amended and restated bylaws will preclude stockholders that assert claims under the Exchange Act from bringing such claims in state or federal court, subject to applicable law.

Anti-Takeover Provisions

Our second amended and restated certificate of incorporation and second amended and restated bylaws, both of which will be in effect prior to the effectiveness of this offering, contain provisions that may delay, defer, or discourage another party from acquiring control of us. We expect that these provisions, which are summarized below, will discourage coercive takeover practices or inadequate takeover bids. These provisions are also designed to encourage persons seeking to acquire control of us to first negotiate with our board of directors, which we believe may result in an improvement of the terms of any such acquisition in favor of our stockholders. However, they also give our board of directors the power to discourage acquisitions that some stockholders may favor.

Section 203 of the Delaware General Corporation Law

We are subject to Section 203 of the Delaware General Corporation Law. Subject to certain exceptions, Section 203 prevents a publicly held Delaware corporation from engaging in a "business combination" with any "interested stockholder" for three years following the date that the person became an interested stockholder, unless the interested stockholder attained such status with the approval of our board of directors or unless the business combination is approved in a prescribed manner. A "business combination" includes, among other things, a merger or consolidation involving us and the "interested stockholder" and the sale of more than 10% of our assets. In general, an "interested stockholder" is any entity or person beneficially owning 15% or more of our outstanding voting stock and any entity or person affiliated with or controlling or controlled by such entity or person.

Classified Board of Directors

Upon effectiveness of this offering, our Board will be divided into three classes serving three-year terms, with one class being elected each year by a plurality of the votes cast by the stockholders entitled to vote on the election.

Proposals of business and nominations

Our second amended and restated bylaws will generally regulate proposals of business and nominations for election of directors by stockholders. In general, Section 2.5 will require stockholders intending to submit proposals or nominations at a stockholders' meeting to provide the Company with advance notice thereof, including information regarding the stockholder proposing the business or nomination as well as information regarding the proposed business or nominee. Sections 2.4 and 2.5 will provide a time period during which business or nominations must be provided to the Company that will create a predictable window for the

submission of such notices, eliminating the risk that the Company finds a meeting will be contested after printing its proxy materials for an uncontested election and providing the Company with a reasonable opportunity to respond to nominations and proposals by stockholders.

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Blank Check Preferred Stock

Our Board will have the right to issue preferred stock in one or more series and to determine the designations, rights, preferences of such preferred stock without stockholder approval.

Board Vacancies

Our second amended and restated bylaws will generally provide that only our Board (and not the stockholders) may fill vacancies and newly created directorships.

Stockholder Action by Written Consent

Our second amended and restated certificate of incorporation and our second amended and restated bylaws will provide that any action required or permitted to be taken by our stockholders at an annual meeting or special meeting of stockholders may only be taken if it is properly brought before such meeting and may be taken by written consent in lieu of a meeting only if the action to be effected by such written consent and the taking of such action by such written consent have been previously approved by the board of directors.

Special Meetings of Stockholders

Our second amended and restated certificate of incorporation and second amended and restated bylaws will also provide that, except as otherwise required by law, special meetings of the stockholders may only be called by our board of directors.

Amendment of Certificate of Incorporation or By-laws

The Delaware General Corporation Law provides generally that the affirmative vote of a majority of the shares entitled to vote on any matter is required to amend a corporation's certificate of incorporation or by-laws, unless a corporation's certificate of incorporation or by-laws, as the case may be, requires a greater percentage. Upon effectiveness of this offering, our bylaws may be amended or repealed by a majority vote of our board of directors or by the affirmative vote of the holders of at least 66 2/3% of the votes which all our stockholders would be eligible to cast in an election of directors. In addition, the affirmative vote of the holders of at least 66 2/3% of the votes which all our stockholders would be eligible to cast in an election of directors will be required to amend or repeal or to adopt any provisions inconsistent with any of the provisions of our certificate.

Limitations on Liability and Indemnification of Officers and Directors

Our second amended and restated certificate of incorporation and second amended and restated bylaws provide indemnification for our directors and officers to the fullest extent permitted by the Delaware General Corporation Law. Prior to the completion of this offering, we intend to enter into indemnification agreements with each of our directors that may, in some cases, be broader than the specific indemnification provisions contained under Delaware law. In addition, as permitted by Delaware law, our certificate includes provisions that eliminate the personal liability of our directors and officers for monetary damages resulting from breaches of certain fiduciary duties as a director or officer, as applicable, except to the extent such an exemption from liability thereof is not permitted under the Delaware General Corporation Law. The effect of these provisions is to restrict our rights and the rights of our stockholders in derivative suits to recover monetary damages against a director or officer for breach of fiduciary duties as a director or officer, subject to certain exceptions in which case the director or officer would be personally liable. An officer may not be exculpated for any action brought by or in the right of the corporation. A director may not be exculpated for improper distributions to stockholders. Further, pursuant to Delaware law a director or officer may not be exculpated for:

- any breach of his or her duty of loyalty to us or our stockholders;
- acts or omissions not in good faith or which involve intentional misconduct or a knowing violation of law; and
- any transaction from which the director or officer derived an improper personal benefit.

These limitations of liability do not apply to liabilities arising under the federal or state securities laws and do not affect the availability of equitable remedies such as injunctive relief or rescission.

Our second amended and restated bylaws will provide that we will indemnify our directors and officers to the fullest extent permitted by law, and may indemnify employees and other agents. Our bylaws also provide that we are obligated to advance expenses incurred by a director or officer in advance of the final disposition of any action or proceeding.

We plan to enter into separate indemnification agreements with our directors and officers. These agreements, among other things, require us to indemnify our directors and officers for any and all expenses (including reasonable attorneys' fees, retainers, court costs, transcript costs, fees of experts, witness fees, travel expenses, duplicating costs, printing and binding costs, telephone charges, postage, delivery service fees) judgments, fines and amounts paid in settlement actually and reasonably incurred by such directors or officers or on his or her behalf in connection with any action or proceeding arising out of their services as one of our directors or officers, or any of our subsidiaries or any other company or enterprise to which the person provides services at our request provided that such person follows the procedures for determining entitlement to indemnification and advancement of expenses set forth in the indemnification agreement. We believe that these bylaw provisions and indemnification agreements are necessary to attract and retain qualified persons as directors and officers.

The limitation of liability and indemnification provisions in our second amended and restated certificate of incorporation and second amended and restated bylaws may discourage stockholders from bringing a lawsuit against directors for breach of their fiduciary duties. They may also reduce the likelihood of derivative litigation against directors and officers, even though an action, if successful, might provide a benefit to us and our stockholders. Our results of operations and financial condition may be harmed to the extent we pay the costs of settlement and damage awards against directors and officers pursuant to these indemnification provisions.

Insofar as indemnification for liabilities arising under the Securities Act may be permitted to directors, officers or persons controlling us, we have been informed that, in the opinion of the SEC, such indemnification is against public policy as expressed in the Securities Act and is therefore unenforceable.

At present, there is no pending litigation or proceeding involving any of our directors or officers as to which indemnification is required or permitted, and we are not aware of any threatened litigation or proceeding that may result in a claim for indemnification.

Dissenters' Rights of Appraisal and Payment

Under the Delaware General Corporation Law, with certain exceptions, our stockholders will have appraisal rights in connection with a merger or consolidation of our company. Pursuant to the Delaware General Corporation Law, stockholders who properly request and perfect appraisal rights in connection with such merger or consolidation will have the right to receive payment of the fair value of their shares as determined by the Delaware Court of Chancery.

Stockholders' Derivative Actions

Under the Delaware General Corporation Law, any of our stockholders may bring an action in our name to procure a judgment in our favor, also known as a derivative action, provided that the stockholder bringing the action is a holder of our shares at the time of the transaction to which the action relates or such stockholder's stock thereafter devolved by operation of law.

Transfer Agent and Registrar

The transfer agent and registrar for our common stock is VStock Transfer, LLC, 18 Lafayette Place, Woodmere, NY 11598.

Trading Symbol and Market

We intend to apply to list our common stock for trading on NYSE American under the symbol "OLSI." This offering will not be consummated until we have received NYSE American's approval of our application for the listing of our common stock. No assurance can be given that our application will be approved.

SHARES ELIGIBLE FOR FUTURE SALE

If our stockholders sell substantial amounts of our common stock, including shares issued upon the exercise of outstanding options or warrants, in the public market following the offering, the market price of our common stock could decline. These sales also might make it more difficult for us to sell equity or equity related securities in the future at a time and price that we deem appropriate.

Upon completion of the offering, we will have outstanding an aggregate of 38,875,509 shares of our common stock, assuming no exercise of the underwriters' option to purchase additional shares and no exercise of outstanding warrants or stock options, based on an assumed initial public offering price of $5.00 per share, which is the midpoint of the price range set forth on the cover page of this prospectus. Of these shares, all of the shares sold in the offering will be freely tradable without restriction or further registration under the Securities Act, unless the shares are purchased by "affiliates" as that term is defined in Rule 144 under the Securities Act.

Upon consummation of this offering, our existing stockholders will hold shares of common stock. The shares of common stock other than the shares registered in the resale offering will be "restricted securities" as defined in Rule 144 unless we register such issuances. Shares held by affiliates and greater than 5% shareholders, other than the shares registered in the resale offering, are subject to a lock-up agreement and will not be distributed or transferred for a period of six months from the date of closing, in the case of non-affiliates, and twelve months from the date of closing, in the case of affiliates.

Rule 144

In general, under Rule 144 as in effect on the date of this prospectus, beginning 90 days after the completion of this offering, a person (or persons whose shares are required to be aggregated) who is an affiliate and who has beneficially owned our shares for at least six months is entitled to sell in any three-month period a number of shares that does not exceed the greater of:

- 1% of the number of shares of common stock then outstanding, which will equal approximately 3,534,803 shares of common stock immediately after completion of this offering; or
- the average weekly trading volume in our shares on the applicable stock exchange during the four calendar weeks preceding the filing of a notice on Form 144 with respect to such a sale.

Sales by our affiliates under Rule 144 are also subject to manner of sale provisions and notice requirements and to the availability of current public information about us. An "affiliate" is a person that directly, or indirectly through one or more intermediaries, controls or is controlled by, or is under common control with an issuer.

Under Rule 144, a person (or persons whose shares are aggregated) who is not deemed to have been an affiliate of ours at any time during the 90 days preceding a sale, and who has beneficially owned the shares of common stock proposed to be sold for at least six months (including the holding period of any prior owner other than an affiliate), would be entitled to sell those shares subject only to availability of current public information about us, and after beneficially owning such shares for at least 12 months (including the holding period of any prior owner other than an affiliate), would be entitled to sell an unlimited number of such shares without restriction. To the extent that our affiliates sell their shares, other than pursuant to Rule 144 or a registration statement, the purchaser's holding period for the purpose of affecting a sale under Rule 144 commences on the date of transfer from the affiliate.

Lock-Up Agreements

Pursuant to "lock-up" agreements, we, our executive officers and directors, and our majority stockholders prior to completion of this offering, have agreed, without the prior written consent of the representative not to directly or indirectly, offer to sell, pledge or otherwise transfer or dispose of any of shares of (or enter into any transaction or device that is designed to, or could be expected to, result in the transfer or disposition by any person at any time in the future of) our common stock, enter into any swap or other derivatives transaction that transfers to another, in whole or in part, any of the economic benefits or risks of ownership of shares of our common stock, make any demand for or exercise any right or cause to be filed a registration statement, including any amendments thereto,

with respect to the registration of any shares of common stock or securities convertible into or exercisable or exchangeable for common stock or any other securities of ours or publicly disclose the intention to do any of the foregoing, subject to customary

exceptions, for a period of one year and six months in case of our directors, executive officers, and stockholders owning more than five percent (5%) of our outstanding common stock, and six months with respect to us, except the selling stockholders as identified in the Resale Prospectus.

Equity Awards

In general, under Rule 701 of the Securities Act as currently in effect, any of our employees, consultants, or advisors who purchase shares of our common stock from us in connection with a compensatory stock or option plan or other written agreement is eligible to resell those shares 90 days after the effective date of the offering in reliance on Rule 144, but without compliance with some of the restrictions, including the holding period, contained in Rule 144.

Following the offering, we intend to file a registration statement on Form S-8 under the Securities Act covering approximately 3,084,550 shares of common stock issued or issuable upon the exercise of stock options, or subject to outstanding options under our 2014 Plan and 5,000,000 shares of common stock reserved for issuance under our 2023 Plan. Accordingly, shares registered under the registration statement will, subject to Rule 144 provisions applicable to affiliates, be available for sale in the open market, except to the extent that the shares are subject to vesting restrictions or the contractual restrictions described above.

Selling Stockholder Resale Prospectus

As described in the Explanatory Note to the registration statement of which this prospectus forms a part, the registration statement also contains the Resale Prospectus to be used in connection with the potential resale by certain selling stockholders of our common stock. These shares of common stock have been registered to permit public resale of such shares, and the selling stockholders may offer the shares for resale from time to time pursuant to the Resale Prospectus. The selling stockholders may also sell, transfer or otherwise dispose of all or a portion of their shares in transactions exempt from the registration requirements of the Securities Act or pursuant to another effective registration statement covering those shares. Any shares sold by the selling stockholders will occur at prevailing market prices or in privately negotiated prices.

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UNDERWRITING

In connection with this offering, we will enter into an underwriting agreement with Boustead Securities, LLC to serve as sole book-running manager of the offering and as representative of the underwriters (if any) named below. Subject to the terms and conditions of the underwriting agreement, each underwriter will severally agree to purchase the number of shares of common stock set forth opposite its name below, at the public offering price, less the underwriting discount set forth on the cover page of this prospectus.

Underwriter	Number of Shares Common Stock
Boustead Securities, LLC	

Subject to the terms and conditions set forth in the underwriting agreement, the underwriters have agreed to purchase all of the shares offered by this prospectus (other than those covered by the option described below, if any are purchased).

The underwriters are offering the shares of common stock subject to various conditions and may reject all or part of any order. The Representative has advised us that the underwriters propose initially to offer the shares of common stock to the public at the public offering price set forth on the cover page of this prospectus and to dealers at a price less a concession not in excess of $_____ per share of common stock. After the shares of common stock are released for sale to the public, the Representative may change the offering price, the concession, and other selling terms at various times.

Underwriting Discount

The following table provides information regarding the amount of the discounts and commissions to be paid to the underwriters by us, before expenses:

	Per Share of Common Stock	Total
Public offering price	$	$
Underwriting discounts and commission	$	$
Proceeds, before expenses, to us	$	$

We have agreed to pay a non-accountable expense allowance to the underwriters equal to 1.0% of the gross proceeds (including proceeds subject to the over-allotment option, if and to the extent it is exercised) for expenses in connection with this offering. We have also agreed to pay the underwriters an accountable expense reimbursement of up to $283,000 for out-of-pocket expenses incurred by them with respect to this offering, of which $100,000 has already been paid and will be reimbursed to us to the extent not actually incurred in compliance with FINRA Rule 5110(g)(4)(A). We estimate that our total expenses of the offering, excluding the estimated underwriting discounts and commissions, will be approximately $800,000.

Representative's Warrants

We have also agreed to issue to the Representative warrants to purchase a number of shares of common stock equal to an aggregate of 7% of the aggregate number of the shares sold in this offering (the "Representative's Warrants"). The Representative's Warrants will be exercisable on a cashless basis at an exercise price equal to 150% of the public offering price of the shares sold in this offering. The Representative's Warrants are exercisable commencing six months after the date of effectiveness of the registration statement of which this prospectus forms a part, have piggyback registration rights, and will be exercisable for a period of five years from the

effective date of the registration statement of which this prospectus forms a part. We have agreed to a one-time demand registration of the shares of common stock underlying the Representative's Warrants for a period of five years from the effective date of the registration statement. The Representative's Warrants also provide for immediate "piggyback" registration rights with respect to the underlying shares of common stock during the five-year period commencing from the effective date of the registration statement related to this offering. The Representative's Warrants are not redeemable by us. The Representative's Warrants and the shares of common stock issuable upon exercise of the Representative's Warrants have been included on the registration statement of which this prospectus forms a part. Pursuant to applicable FINRA

rules, and in particular Rule 5110, the Representative's Warrants (and underlying shares) issued to the Representative may not be sold, transferred, assigned, pledged, or hypothecated, or the subject of any hedging, short sale, derivative, put or call transaction that would result in the effective disposition of the securities by any person for a period of 180 days after the effective date of the registration statement related to this offering; provided, however, that the Representative's Warrants (and underlying shares) may be transferred to an underwriters' officers, partners, registered persons or affiliates as long as the Representative's Warrants (and underlying shares) remain subject to the lockup.

We have agreed to indemnify the underwriters against certain liabilities, including liabilities under the Securities Act of 1933, as amended.

Pursuant to the underwriting agreement, we will provide the Representative the right of first refusal for one year from the date of commencement of sales of this public offering to act as financial advisor or to act as joint financial advisor on at least equal economic terms on any public or private financing (debt or equity), merger, business combination, recapitalization or sale of some or all of the equity or assets of our company.

We have agreed to a 12-month "lock-up" from the closing of this offering, during which, without the prior written consent of Boustead Securities, LLC, we shall not issue, sell or register with the SEC (other than on Form S-8 or on any successor form) with respect to any of our equity securities (or any securities convertible into, exercisable for or exchangeable for any of our equity securities), except for (i) the issuance of the shares of common stock offered pursuant to this prospectus; and (ii) the issuance of shares of common stock pursuant to our existing stock option or bonus plan as described in the registration statement of which this prospectus forms a part.

Our executive officers, directors and certain of our significant stockholders have also agreed to a 12-month "lock-up," during which, without the prior written consent of Boustead Securities, LLC, they shall not, directly or indirectly, (i) offer, pledge, assign, encumber, announce the intention to sell, sell, contract to sell, sell any option or contract to purchase, purchase any option or contract to sell, grant any option, right or warrant to purchase, or otherwise transfer or dispose of, any shares of common stock or any securities convertible into or exercisable or exchangeable for common stock, owned either of record or beneficially (as defined in the Securities Exchange Act of 1934, as amended (the "Exchange Act") by any signatory of the lock-up agreement on the date of the prospectus or thereafter acquired; (ii) enter into any swap or other agreement that transfers, in whole or in part, any of the economic consequences of ownership of the common stock or any securities convertible into or exercisable or exchangeable for common stock, whether any such transaction described in clauses (i) or (ii) above is to be settled by delivery of common stock or such other securities, in cash or otherwise, or publicly announce an intention to do any of the foregoing; and (iii) make any demand for or exercise any right with respect to, the registration of any shares of common stock or any security convertible into or exercisable or exchangeable for common stock. The foregoing shall not apply to (i) common stock to be transferred as a gift or gifts (*provided*, that (a) any donee shall execute and deliver to Boustead Securities, LLC, acting on behalf of the underwriters, not later than one business day prior to such transfer, a lock-up agreement to Boustead Securities, LLC and (b) if the lock-up signatory is required to file a report under Section 16(a) of the Exchange Act, reporting a reduction in beneficial ownership of shares of common stock or beneficially owned shares or any securities convertible into or exercisable or exchangeable for common stock or beneficially owned shares during the 15-month "lock-up," the lock-up signatory shall include a statement in such report to the effect that such transfer is being made as a gift), and (ii) the sale of the shares of common stock to be sold pursuant to this prospectus.

Rules of the SEC may limit the ability of the underwriters to bid for or purchase shares of our common stock before the distribution of the shares is completed. However, the underwriters may engage in the following activities in accordance with the rules:

- Stabilizing transactions — the Representative may make bids or purchases for the purpose of pegging, fixing or maintaining the price of the common stock, so long as stabilizing bids do not exceed a specified maximum.

- Penalty bids — if the Representative purchases shares of common stock in the open market in a stabilizing transaction or syndicate covering transaction, it may reclaim a selling concession from the underwriters and selling group members who sold those shares of common stock as part of this offering.
- Passive market making — market makers in the common stock who are underwriters or prospective underwriters may make bids for or purchases of shares of common stock, subject to limitations, until the time, if ever, at which a stabilizing bid is made.

Similar to other purchase transactions, the underwriters' purchases to cover the syndicate short sales or to stabilize the market price of our common stock may have the effect of raising or maintaining the market price of our common stock or preventing or mitigating a decline in the market price of our common stock. As a result, the price of our common stock may be higher than the price that might otherwise exist in the open market. The imposition of a penalty bid might also have an effect on the price of the common stock if it discourages resales of our shares of common stock.

Neither we nor the underwriters make any representation or prediction as to the effect that the transactions described above may have on the price of our common stock. These transactions may occur on NYSE American or otherwise. If such transactions are commenced, they may be discontinued without notice at any time.

Electronic Delivery of Prospectus: A prospectus in electronic format may be delivered to potential investors by one or more of the underwriters participating in this offering. The prospectus in electronic format will be identical to the paper version of such prospectus. Other than the prospectus in electronic format, the information on any underwriter's website and any information contained in any other website maintained by an underwriter is not part of this prospectus or the registration statement of which this prospectus forms a part.

Prior Relationship with Boustead Securities, LLC

In April, 2022, we engaged Boustead Securities, LLC ("Boustead") to serve as our exclusive advisor for a term of the earlier to occur of 18 months, 12 months from the completion of this offering, or our mutual written agreement with Boustead.

On June 20, 2022, we commenced a private placement (the "Private Placement") of up to $5,000,000 of convertible promissory notes, pursuant to which we issued: (i) convertible promissory notes in the principal aggregate amount of $450,000 on June 30, 2022; (ii) convertible promissory notes in the principal aggregate amount of $60,000 on August 16, 2022; (iii) convertible promissory notes in the principal aggregate amount of $725,000 on September 23, 2022; (iv) convertible promissory notes in the principal aggregate amount of $315,000 on October 25, 2022; (v) convertible promissory notes in the principal aggregate amount of $288,000 on November 30, 2022; and (vi) a convertible promissory note in the principal amount of $101,749.70 on December 21, 2022 (collectively, the "Private Placement Notes"). The promissory note issued in December 2022 was pursuant to a Subscription Agreement that was executed on or before November 30, 2022. In total, we sold an aggregate principal amount of $1,939,749.70 of the Private Placement Notes to thirty-eight (38) accredited investors in the Private Placement, pursuant to which we received net proceeds of approximately $1,600,000. The Private Placement has terminated.

Boustead, the sole book-running manager of this offering, acted as the placement agent for the Private Placement and received a commission equal to 7.0% of the gross proceeds received by us from the sale of the Private Placement Notes, a non-accountable expense allowance equal to 1.0% of the gross proceeds received by us from the sale of the Private Placement Notes. Boustead also received warrants to purchase an aggregate of 54,313 shares of common stock (the "Private Placement Warrants"). The Private Placement Warrants expire five years from the date of issuance and have an exercise price of $2.50 per share (or 50% of the initial public offering price per share).

The Private Placement Warrants will not be exercisable or convertible more than five years from the commencement of this public offering. Pursuant to applicable FINRA rules and, in particular, Rule 5110(e)(1), the Private Placement Warrants may not be sold, transferred, assigned, pledged or hypothecated, or be the subject of any hedging, short sale, derivative, put or call transaction that would result in the effective economic disposition of the securities for a period of 180 days beginning on the date of commencement of sales of this public offering; provided, however, the Private Placement Warrants may be transferred to Boustead's officers, partners, registered persons or affiliates as long as the warrants remain subject to the lock-up restriction above.

LEGAL MATTERS

The validity of the securities being offered by this prospectus will be passed upon for us by Blank Rome LLP, New York, New York. Olshan Frome Wolosky LLP, New York, New York is acting as counsel for the underwriters.

EXPERTS

The consolidated financial statements of the Company for the years ended December 31, 2022 and December 31, 2021, have been audited by Liebman Goldberg & Hymowitz LLP, independent registered public accounting firm, as stated in their report, which includes an explanatory paragraph as to the Company's ability to continue as a going concern, appearing herein. Such consolidated financial statements have been included herein in reliance on the report of such firm given upon their authority as experts in accounting and auditing.

WHERE YOU CAN FIND ADDITIONAL INFORMATION

We have filed with the SEC a registration statement on Form S-1 under the Securities Act with respect to the shares of our common stock offered by this prospectus. This prospectus, which constitutes a part of the registration statement, does not contain all of the information set forth in the registration statement, as permitted by the rules and regulations of the SEC. For further information with respect to us and our common stock, we refer you to the registration statement, including the exhibits filed as a part of the registration statement. Statements contained in this prospectus concerning the contents of any contract or any other document are not necessarily complete. If a contract or document has been filed as an exhibit to the registration statement, please see the copy of the contract or document that has been filed. Each statement in this prospectus relating to a contract or document filed as an exhibit is qualified in all respects by the filed exhibit. The SEC also maintains an Internet website that contains reports, proxy and information statements, and other information regarding issuers that file electronically with the SEC, including the registration statement of which this prospectus forms a part, as well as the exhibits thereto. These documents, along with future reports, proxy statements and other information about us, are available at the SEC's website, *www.sec.gov*.

As a result of this offering, we will become subject to the information and reporting requirements of the Exchange Act, as amended, and, in accordance with this law, will file periodic reports, proxy statements and other information with the SEC. These periodic reports, proxy statements and other information will be available at the SEC's website, *www.sec.gov.* We also maintain a website *www.originww.com*. Upon the completion of this offering, you may access these materials free of charge as soon as reasonably practicable after they are electronically filed with, or furnished to, the SEC. Information contained on our website is not a part of this prospectus, and the inclusion of our website address in this prospectus is an inactive textual reference only.

DISCLOSURE OF COMMISSION POSITION ON INDEMNIFICATION FOR SECURITIES ACT LIABILITIES

Insofar as indemnification for liabilities arising under the Securities Act may be permitted to our directors, officers, and controlling persons, we have been informed that in the opinion of the SEC this indemnification is against public policy as expressed in the Securities Act and is therefore unenforceable.

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CONSOLIDATED FINANCIAL STATEMENTS
YEARS ENDED DECEMBER 31, 2022 AND 2021

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REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Board of Directors and
Stockholders of Origin, Inc.

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of Origin, Inc. and Subsidiaries (the "Company") as of December 31, 2022 and 2021 and the related consolidated statements of operations, comprehensive loss, stockholders' deficit, and cash flows for the years then ended, and the related notes to the consolidated financial statements (collectively referred to as the financial statements). In our opinion, the financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2022 and 2021, and the results of its operations, comprehensive loss and its cash flows for the years ended December 31, 2022 and 2021, in conformity with accounting principles generally accepted in the United States of America.

Substantial Doubt about the Company's Ability to Continue as a Going Concern

The accompanying financial statements have been prepared assuming that the Company will continue as a going concern. As discussed in Note 1 to the financial statements, based on its projections, the Company anticipates that during 2024, it will not have sufficient capital. Furthermore, the Company's losses from operations and working capital deficiency raises substantial doubt about its ability to continue as a going concern. Management's plans in regard to these matters are also described in Note 1. The financial statements do not include any adjustments that might result from the outcome of this uncertainty.

Basis for Opinion

These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on the Company's financial statements based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) ("PCAOB") and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud. The Company is not required to have, nor were we engaged to perform, an audit of its internal control over financial reporting. As part of our audits, we are required to obtain an understanding of internal control over financial reporting, but not for the purpose of expressing an opinion on the effectiveness of the Company's internal control over financial reporting. Accordingly, we express no such opinion.

Our audits included performing procedures to assess the risks of material misstatement of the financial statements, whether due to error or fraud, and performing procedures that respond to those risks.

Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the financial statements. We believe that our audits provide a reasonable basis for our opinion.

Critical Audit Matters

Critical audit matters are matters arising from the current period audit of the financial statements that were communicated or required to be communicated to the audit committee and that: (1) relate to accounts or disclosures that are material to the financial statements and (2) involved our especially challenging, subjective, or complex judgments. We determined that there were no critical audit matters.

/s/ Liebman Goldberg & Hymowitz, LLP

We have served as the Company's auditor since May 17, 2022.

Garden City, New York

February 28, 2023

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ORIGIN, INC. AND SUBSIDIARIES
CONSOLIDATED BALANCE SHEETS

	December 31,	
	2022	2021
ASSETS		
Current assets:		
Cash and cash equivalents	$ 554,379	$ 4,508
Subscription receivable, net – less reserve of $6,809,180	—	—
Prepaid expenses and other current assets	699,462	290,693
Total current assets	1,253,841	295,201
Restricted cash	51,370	50,966
Investments	165,518	206,897
Fixed assets, net of accumulated depreciation of $129,131 and $196,879, respectively	—	—
Intangible assets, net of accumulated amortization of $806,201 and $713,178, respectively	193,799	286,822
Other long-term assets	19,049	19,049
Operating lease right-of-use assets	56,694	159,325
Total assets	$ 1,740,271	$ 1,018,260
LIABILITIES AND SHAREHOLDERS' DEFICIT		
Current liabilities:		
Accounts payable	$ 1,273,064	$ 1,386,214
Accrued expenses	9,720,407	7,676,578
Other current liabilities	—	183,737
Current operating lease liability	56,694	107,798
Total current liabilities	11,050,165	9,354,327
Dividends payable	1,458,739	1,098,740
Warrant liability	2,819,325	2,819,325
Due to related parties	766,853	897,406
Convertible promissory note payable	250,000	250,000
2022 Convertible notes payable, net	1,609,218	
Long-term operating lease liability	—	51,527
Other long-term liabilities	643,258	461,702
Total liabilities	18,597,558	14,933,027
Commitments and contingencies (Note 17)		
Mezzanine equity:		
Preferred stock, $0.01 par value; authorized 1,000,000 shares		

Series A 8% convertible preferred stock, designated 30,000 shares, 20,000 shares issued and outstanding at December 31, 2022 and 2021	1,932,800	1,932,800
Series B 20% preferred stock, designated 10,000 shares, 10,000 shares issued and outstanding at December 31, 2022 and 2021	1,000,000	1,000,000
Total mezzanine equity	2,932,800	2,932,800
Shareholders' deficit:		
Special voting common stock, $0.01 par value; authorized 1,000,000 shares, 40,998 shares issued and outstanding at December 31, 2022 and 2021	410	410
Common stock, $0.01 par value; authorized 2,000,000 shares, 152,775 and 148,257 shares issued and outstanding at December 31, 2022 and 2021	1,528	1,483
Additional paid-in capital	66,651,917	60,718,801
Accumulated deficit	(86,321,534)	(77,481,183)
Accumulated other comprehensive loss	(122,408)	(87,078)
Total shareholders' deficit	(19,790,087)	(16,847,567)
Total liabilities, mezzanine equity and shareholders' deficit	$ 1,740,271	$ 1,018,260

See accompanying notes to the consolidated financial statements.

ORIGIN, INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF OPERATIONS

	Year Ended December 31,	
	2022	**2021**
Revenue	$ —	$ —
Operating expenses:		
Salaries and benefits (including share-based compensation of $32,799 and $1,969,049, respectively)	1,954,851	4,322,259
Consulting (including share-based compensation of $44,731 and $1,134,813, respectively)	521,297	1,624,709
Other general and administrative	403,407	433,929
Research and development	52,139	9,848
Amortization	93,023	93,023
Total operating expenses	3,024,717	6,483,768
Loss from operations	(3,024,717)	(6,483,768)
Other income and (expense):		
Forgiveness of paycheck protection program loan	183,737	201,250
Warrant expense	(5,886,390)	—
Interest expense	(112,981)	(50,123)
Total other income and (expense)	(5,815,635)	151,127
Loss before provision for income taxes	(8,840,351)	(6,332,641)
Provision for income taxes	—	—
NET LOSS	$ (8,840,351)	$ (6,332,641)
Net loss per share of common share – basic and diluted	$ (48.49)	$ (35.40)
Weighted average number of common shares outstanding during the period – basic and diluted	189,732	189,044

See accompanying notes to the consolidated financial statements.

ORIGIN, INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF COMPREHENSIVE LOSS

	Year Ended December 31,	
	2022	**2021**
NET LOSS	$ (8,840,351)	$ (6,332,641)
Other comprehensive loss, net of tax:		
Market value adjustments for investments	(41,379)	(20,689)
Foreign currency translation adjustment	6,049	7,852
Total other comprehensive loss	(35,330)	(12,837)
COMPREHENSIVE LOSS	$ (8,875,681)	$ (6,345,478)

See accompanying notes to the consolidated financial statements.

ORIGIN, INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENT OF CHANGES IN SHAREHOLDERS' DEFICIT

	Special Voting Common Stock		Common Stock		Additional Paid-in Capital	Accumulated Deficit	Accumulated Other Comprehensive Gain (Loss)	Total
	Shares	Amount	Shares	Amount				
Balance December 31, 2020	40,998	$ 410	147,851	$ 1,479	$ 57,429,153	$ (71,148,542)	$ (74,241)	$ (13,791,741)
Issuance of common stock, net of offering costs of $22,610	—	—	406	4	545,786	—	—	545,790
Share option compensation expense	—	—	—	—	3,103,862	—	—	3,103,862
Dividends	—	—	—	—	(360,000)	—	—	(360,000)
Comprehensive loss	—	—	—	—	—	(6,332,641)	(12,837)	(6,345,478)
Balance December 31, 2021	40,998	410	148,257	1,483	60,718,801	(77,481,183)	(87,078)	(16,847,567)
Issuance of common stock	—	—	4,518	45	329,196	—	—	329,241
Share option compensation expense	—	—	—	—	77,530	—	—	77,530
Issuance of warrants	—	—	—	—	5,886,390	—	—	5,886,390
Dividends	—	—	—	—	(360,000)	—	—	(360,000)
Comprehensive loss	—	—	—	—	—	(8,840,351)	(35,330)	(8,875,681)
Balance December 31, 2022	40,998	$ 410	152,775	$ 1,528	$ 66,651,917	$ (86,321,534)	$ (122,408)	$ (19,790,087)

See accompanying notes to the consolidated financial statements.

ORIGIN, INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF CASH FLOWS

	Year Ended December 31,	
	2022	**2021**
Cash flows from operating activities:		
Net loss	$ (8,840,351)	$ (6,332,641)
Adjustments to reconcile net loss to net cash (used in) operating activities:		
Share-based compensation – options	77,530	3,103,862
(Forgiveness) of paycheck protection program loan	(183,737)	(201,250)
Warrants issued	5,886,390	—
Amortization	93,023	93,023
Changes in assets and liabilities:		
(Increase) in prepaid expenses and other current assets	(408,768)	(401)
Increase in accounts payable and accrued expenses	1,936,271	2,369,526
Increase in interest payable	81,555	50,000
Net cash (used in) operating activities	(1,358,087)	(917,881)
Cash flows provided by (used in) financing activities:		
Repayment of related party loans, net	(124,419)	(10)
Proceeds from paycheck protection program loan		183,737
Proceeds from other long-term debt	100,000	—
Proceeds from issuance 2022 convertible notes, net	1,609,218	—
Proceeds from issuance of common stock, net	329,241	545,790
Net cash provided by financing activities	1,914,040	729,517
Impact of exchange rates on cash and cash equivalents	(5,678)	11
Net increase (decrease) in cash, cash equivalents and restricted cash	550,275	(188,353)
Cash, cash equivalents and restricted cash, beginning of the year	55,474	243,827
Cash, cash equivalents and restricted cash, end of the year	605,749	55,474
Less restricted cash	(51,370)	(50,966)
Cash and cash equivalents, end of the year	$ 554,379	$ 4,508
Supplemental disclosures of cash flow information:		
Cash paid during the year for interest	$ —	$ 123
Cash paid for income taxes	$ —	$ —

See accompanying notes to the consolidated financial statements.

ORIGIN, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
YEARS ENDED DECEMBER 31, 2022 AND 2021

NOTE 1. ORGANIZATIONAL STRUCTURE AND NATURE OF OPERATIONS

Plasma Jet Technologies, Inc. was formed in June 2010 under the laws of the state of Delaware, in the United States of America ('US'). In September 2010, the shareholders voted to change the name of the corporation from Plasma Jet Technologies, Inc. to Advanced Plasma Therapies, Inc. ('APT'). In May 2013, APT established a United Kingdom ('UK') subsidiary, Advanced Plasma Therapies Limited. In August 2014, APT established another UK subsidiary, Advanced Plasma Technologies Limited, a non-operating entity. In October 2015, the shareholders voted to change the name of the corporation from APT to Origin, Inc. In November 2015, Origin, Inc. established a non-operating US entity, Advanced Plasma Therapies, Inc. In January 2016, the shareholders voted to change the names of Advanced Plasma Therapies Limited and Advanced Plasma Technologies Limited to Origin Life Sciences Limited ('Origin UK') and Origin Agribusiness Limited, respectively.

The financial statements of Origin, Inc. and subsidiaries for 2022 and 2021 are presented on a consolidated basis because of the common ownership interests and control. Origin, Inc. and its subsidiaries are collectively referred to as 'Origin' or the 'Company'.

Liquidity and Going Concern

Since inception, the Company has funded its operations primarily through private placements of its common stock, special voting common stock, preferred stock and convertible notes. As of December 31, 2022, the Company had cash, cash equivalents and restricted cash of $605,749 and an accumulated deficit of $86,321,534. Based on the Company's operating plans, existing working capital, at the date of these consolidated financial statements, is not sufficient to sustain operations through at least the next twelve months.

Management is currently in negotiations with several potential investors for further funding of its operations, however there can be no assurance that the Company will be successful in its efforts. Accordingly, there is substantial doubt regarding the Company's ability to continue as a going concern.

Planned operations include continued development of the Company's medical device for the treatment of diabetic foot ulcers and venous leg ulcers, for regulatory approval in the US and Europe. The Company's Board of Directors is carefully considering the extent to which they commit to future expenditure, until additional funding is secured.

The Board of Directors has a reasonable expectation that sufficient additional working capital can be raised to meet the Company's operating needs for at least 12 months from the date of the consolidated financial statements. Therefore, the consolidated financial statements have been prepared on a going concern basis.

The consolidated financial statements do not include any adjustments to reflect the possible future effects on the recoverability and classification of assets or the amounts and classification of liabilities that may result from the outcome of this uncertainty.

NOTE 2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Basis of Presentation

The accompanying consolidated financial statements have been presented in accordance with accounting principles generally accepted in the United States of America ('US GAAP'). All intercompany balances and transactions have been eliminated upon consolidation.

Use of Estimates

The preparation of consolidated financial statements in conformity with US GAAP requires management to make estimates and assumptions that affect the amounts and disclosures reported in the consolidated financial

statements. Management uses significant judgment when making estimates related to its common stock, special voting common stock, preferred stock, warrant and option valuations. Management bases its estimates on historical experience and

ORIGIN, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
YEARS ENDED DECEMBER 31, 2022 AND 2021

NOTE 2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (cont.)

various other assumptions that are believed to be reasonable under the circumstances, the results of which form the basis for making judgments about the carrying values of assets, liabilities and equity that are not readily apparent from other sources. Actual results could differ from those estimates.

Cash, Cash Equivalents and Restricted Cash

The Company considers all highly liquid securities, readily convertible to cash, that mature within three months or less from the original date of purchase to be cash equivalents. As of December 31, 2022 and 2021, the Company's cash equivalents were entirely composed of bank deposits and investments in money market funds.

As of December 31, 2022 and 2021, the Company's restricted cash relates to collateral for credit cards issued to key employees by a commercial bank.

Concentrations of Credit Risk

The Company maintains cash balances with various financial institutions. These balances are partially insured by the Federal Deposit Insurance Corporation ('FDIC'). At various times during the years ended December 31, 2022 and 2021, the Company's cash exceeded FDIC insured limits.

Investments

The Company accounts for investments using the cost method, fair value method or equity method, as appropriate.

The Company regularly reviews its investments to determine whether a decline in fair value below the cost basis is other than temporary. If the decline in fair value is determined to be other than temporary, the cost basis of the investment is written down to fair value.

Trade and Subscription Receivables

Trade and subscription receivables are carried at the amount due from the debtor and are presented net of a reserve, which is estimated based on an evaluation of the receivable's recoverability. Management evaluates the collectability of these balances on an on-going basis and writes off accounts when they are considered to be uncollectible.

Fixed Assets

The Company only considers for capitalization assets costing $2,000 or more. Medical and engineering equipment that are used solely in product development or clinical trials and that do not have alternative future uses are charged to research and development expense when acquired, regardless of their cost. Depreciation is provided using the straight-line method over the estimated useful lives of the related assets. Maintenance and repairs that do not improve or extend the useful life are charged to expense as incurred. Significant improvements and betterments that materially increase values or extend useful lives are capitalized and depreciated over the remaining estimated useful lives of the related assets.

Upon sale or retirement of depreciable assets, the related cost and accumulated depreciation or amortization are removed from the accounts. Any gain or loss on the sale or retirement is recognized in current operations.

Intangible Assets

Intangible assets at December 31, 2022 and 2021 consists of a patent: United States Patent No. 7,498,000, *Method and Device for Forming an NO-containing Gas Flow for Affecting a Biological Object* (the 'Patent').

The Patent acquired by the Company was originally filed in 2004 and expires on February 7, 2025. The Company acquired the Patent in 2014 and its value is amortized over its estimated useful life of 10.75 years, using the straight-line method, to amortization expense.

ORIGIN, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
YEARS ENDED DECEMBER 31, 2022 AND 2021

NOTE 2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (cont.)

Impairment of Long-lived Assets

Long-lived assets consist primarily of furniture and fixtures, medical equipment, computers, investments and intangible assets and are reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount of an asset may not be recoverable. If circumstances require that a long-lived asset be tested for possible impairment, the Company compares the undiscounted cash flows expected to be generated by the asset to the carrying amount of the asset. If the carrying amount of the long-lived asset is not recoverable on an undiscounted cash flow basis, impairment is recognized to the extent that the carrying amount exceeds its fair value. The Company determines fair value using the income approach based on the present value of expected future cash flows or other appropriate measures of estimated fair value. The Company's cash flow assumptions consider historical and forecasted revenue and operating costs and other relevant factors. Since inception, the Company has not recorded impairment charges on long-lived assets.

Foreign Currency

The Company's reporting (functional) currency is the US Dollar ('USD'). Transactions completed in any currency other than the reporting currency are translated to USD at the exchange rate at the date of transaction and are included in earnings. Net foreign currency transaction losses were $5,591 and nil for the years ended December 31, 2022 and 2021, respectively. The functional currency of Origin UK is the British Pound. During 2022 and 2021, Origin UK expenses have been translated to USD at the average monthly rates for the periods concerned and assets and liabilities at the rate prevailing at the balance sheet date. Differences arising from the translation of Origin UK accounts to USD have been charged to accumulated other comprehensive income (loss) ('AOCI') in shareholders' equity. Transactions completed in any currency other than the functional currency are translated to USD at the exchange rate at the date of transaction and are included in earnings.

Revenue Recognition

Origin will generate future revenue from contracts with customers. Revenue will be recognized when the performance obligation is satisfied by transferring control of the promised services to the customer in an amount that reflects the consideration expected to be receive in exchange for those services. The Company will determine revenue recognition through the following steps:

1. Identification of the contract with the customer
2. Satisfaction of the performance obligations in the contract
3. Determination of the transaction price
4. Allocation of the transaction price to the performance obligations in the contract
5. Recognition of revenue when, or as, the performance obligation is satisfied

Revenue will be recognized when the services are provided to the customer, provided that collection of the resulting receivable is reasonably assured. Management will periodically evaluate the collectability of the receivables and record any allowances necessary.

Research and Development Expenses

Research and development expenses consist primarily of engineering, product development, clinical and regulatory affairs, consulting services, materials, depreciation and other costs associated with products and

technologies in development. These expenses include non-employee compensation, supplies, related travel expenses, and facility costs. Clinical expenses include clinical trial design, clinical site reimbursement, data management and travel expenses, and the cost of manufacturing products for clinical trials.

ORIGIN, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
YEARS ENDED DECEMBER 31, 2022 AND 2021

NOTE 2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (cont.)

Common Stock Valuation and Share-based Awards

The Company provides incentives for employees, consultants and members of the board of directors in the form of options and warrants to acquire Company stock. Certain options and warrants vest solely based on continuous employment, while others are also conditional on certain non-market performance conditions being met.

For employees and directors, the Company is required to determine and recognize as compensation expense the fair value of these equity incentive awards over the requisite service period in the consolidated statements of operations. In addition, share-based compensation expense is based on awards expected to vest and therefore the amount of expense is reduced for estimated forfeitures, if any. The Company uses the straight-line method for expense attribution over the requisite service and performance period. For awards with non-market performance conditions, expense is attributed on a straight-line basis from the date the awards have been considered authorized to the expected date of achievement of the milestone, but only once milestone achievement is considered probable. The Company established a Remuneration Committee of the Board of Directors in September 2014. Subsequently, the Company adopted a policy that even if achievement is considered probable, formal approval by the Remuneration Committee is required before performance-based awards are regarded as authorized.

For non-employees, the date at which the fair value of equity incentive awards is measured is equal to the earlier of: 1) the date at which a commitment for performance by the counterparty to earn the equity instrument is reached; or 2) the date at which the counterparty's performance is complete. The Company recognizes share-based compensation expense for the fair value of the vested portion of non-employee awards in the consolidated statement of operations. The fair value of options granted to non-employees is remeasured as the options vest.

In accordance with Accounting Standards Codification ('ASC') 480, *Distinguishing Liabilities from Equity*, warrants that are settled with a variable number of shares based on a predetermined fixed monetary amount are classified as a liability on the accompanying consolidated balance sheet. All other warrants are classified as equity.

The valuation model used for calculating the fair value of awards for share-based compensation expense is the Black-Scholes option-pricing model (the 'Black-Scholes model'). The Black-Scholes model requires the Company to make assumptions and judgments about the variables used in the calculation, including the share price at grant date, the dividend yields, the expected term (weighted average period that the options granted are expected to be outstanding before exercise), the volatility of common stock prices, an assumed risk-free interest rate and an estimated forfeiture rate. To determine share price at grant date, Origin uses a discounted cash flow model which estimates market size, penetration and profitability. The Company uses the 'simplified method' to determine the expected term of the stock option. Volatility is based on the historical volatilities of the common stock of publicly-traded companies with characteristics similar to those of the Company. The risk-free rate is based on the U.S. Treasury yield curve in effect at the time of grant for periods corresponding with the expected term of the option. Potential forfeitures of awards are estimated based on the Company's historical forfeiture experience. The estimate of forfeitures will be adjusted over the service period to the extent that actual forfeitures differ, or are expected to differ, from prior estimates. Due to the nature of the Company and its peers, dividend yields are assumed to be zero.

Offering Costs

Offering costs associated with capital raising activities consist primarily of legal and other direct fees and costs. When incurred, offering costs are offset against the proceeds of the respective capital raise in additional paid-in capital.

Executive Cash Bonuses

Contractual cash bonuses may depend on the achievement of performance milestones that extend over more than one accounting period. In such cases, the bonuses are expensed on a straight-line basis from the date of the contract to the expected date of milestone achievement, once achievement is considered probable.

ORIGIN, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
YEARS ENDED DECEMBER 31, 2022 AND 2021

NOTE 2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (cont.)

Income Taxes

The Company is subject to US federal income taxes and Origin UK is subject to UK corporation tax.

The Company accounts for income taxes under the asset and liability method, in which deferred tax assets and liabilities are recognized for the future tax consequences attributable to differences between the financial statement carrying amounts of existing assets and liabilities and their respective tax bases and operating loss and tax credit carry forwards. Deferred tax assets and liabilities are measured using enacted tax rates expected to apply to taxable income in the years in which those temporary differences are expected to be recovered or settled. The effect on deferred tax assets and liabilities of a change in tax rates is recognized in operations in the period that includes the enactment date. A valuation allowance is required to the extent any deferred tax assets may not be realizable.

ASC Topic 740*, Income Taxes*, ('ASC 740'), also clarifies the accounting for uncertainty in income taxes recognized in an enterprise's financial statements and prescribes a recognition threshold and measurement process for financial statement recognition and measurement of a tax position taken or expected to be taken in a tax return. For those benefits to be recognized, a tax position must be more-likely-than-not to be sustained upon examination by taxing authorities. ASC 740 also provides guidance on derecognition, classification, interest and penalties, accounting in interim periods, disclosure and transition. Based on the Company's evaluation, it has been concluded that there are no significant uncertain tax positions requiring recognition in the Company's consolidated financial statements. The Company believes that its income tax positions and deductions would be sustained on audit and does not anticipate any adjustments that would result in material changes to its financial position.

Loss Per Common Share

The Company computes net income (loss) per share in accordance with ASC 260, *Earnings Per Share* ("EPS"), ('ASC 260'). Under the provisions of ASC 260, basic net income (loss) per share is computed by dividing the net income (loss) for the period by the weighted-average number of common shares outstanding during the period. Diluted net income (loss) per share is computed by dividing the net income (loss) for the period by the weighted-average number of common and common equivalent shares outstanding during the period. However, common shares that are considered anti-dilutive are excluded from the computation of diluted EPS. Since the Company had a loss during the years ended December 31, 2022 and 2021, the basic and diluted net loss per share are the same.

Potentially dilutive securities not included in the computation of loss per share for the years ended December 31, 2022 included 20,000 shares of Series A convertible preferred stock, stock options to purchase 22,926 shares of common stock, and warrants to purchase 14,333 shares of common stock. Potentially dilutive securities not included in the computation of loss per share for the years ended December 31, 2021 included 20,000 shares of Series A convertible preferred stock, stock options to purchase 24,771 shares of common stock, and warrants to purchase 20,574 shares of common stock.

Recent Accounting Pronouncements

In December 2019, the FASB issued ASU 2019-12, *Simplifying the Accounting for Income Taxes* (Topic 740), which removes certain exceptions to the general principles in Topic 740 and improves consistent application of and simplifies GAAP for other areas of Topic 740 by clarifying and amending existing guidance. The Company adopted the new standard effective January 2021. The adoption of this ASU did not have a material impact on the Company's consolidated financial statements.

In January 2020, the FASB issued ASU 2020-01, *Investments — Equity Securities (Topic 321), Investments — Equity Method and Joint Ventures (Topic 323), and Derivatives and Hedging (Topic 815)*. The amendments in this ASU clarify the interaction between the accounting for investments in equity securities, investment in equity method and

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NOTE 2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (cont.)

certain derivatives instruments. The ASU is expected to reduce diversity in practice and increase comparability of the accounting for these interactions. The Company adopted the new standard effective January 2021. The adoption of this ASU did not have a material impact on the Company's consolidated financial statements.

A variety of proposed or otherwise potential accounting standards are currently under study by standard-setting organizations. Due to the tentative and preliminary nature of those proposed standards, management has not determined whether the implementation of such proposed standards would be material to the consolidated financial statements of the Company.

NOTE 3. SUBSCRIPTION RECEIVABLE

In December 2017, the Company accepted a subscription agreement from an investor to purchase 2,035 shares of common stock. In June 2018, the investor also subscribed for 3,143 shares, for which the Company recorded a net receivable of $3,960,180. All subscription agreements represent irrevocable commitments by subscribers to fund the amount subscribed. As the investor did not provide the funds, the Company commenced legal action in June 2019 against the investor for both subscriptions and, in March 2022, applied to the court for summary judgement in our favor. As a result of this application, the Company has now also recognized the receivable in respect of the first subscription, in the sum of $2,849,000. Management considers it prudent to reserve against the entire amount until such time as the court has delivered its ruling.

NOTE 4. INVESTMENTS

ADM Tronics Unlimited, Inc. ('ADMT') provides design, engineering and regulatory services for the Company. On August 7, 2015, the Company entered into a Securities Purchase Agreement (the 'Purchase Agreement') for the purchase of 2,068,966 shares of common stock of ADMT for a total investment of $300,000. The investment has been accounted for as available-for-sale securities under the fair value method since ADMT is a US publicly traded entity and the security has a readily determinable fair value. The investment has been marked to fair value with the unrealized holding losses of $41,379 and $20,689 recorded in AOCI as of December 31, 2022 and 2021, respectively.

NOTE 5. FIXED ASSETS

Fixed assets consisted of the following as of December 31, 2022 and 2021:

	Estimated Useful Life (Years)	2022	2021
Furniture and fixtures	3	$ 89,690	$ 89,690
Medical equipment	5	—	67,748
Computers and other	3	39,441	39,441
Subtotal		129,131	196,879
Less: accumulated depreciation		(129,131)	(196,879)
		$ —	$ —

Depreciation expense was nil for the years ended December 31, 2022 and 2021.

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NOTE 6. INTANGIBLE ASSETS

In April 2014, the Company purchased a Patent from Dr. Alexander Pekshev for $1,000,000. In addition, the parties entered into an Exclusive Option Exercising Agreement wherein the Company agreed to pay Dr. Pekshev an annual percentage of the Company's net sales of devices falling within the scope of patent protection during the period from January 1, 2015 through December 31, 2024 at various royalty rates in the low single digits. The Company did not have any net sales during the years ended December 31, 2022 and 2021 and therefore no royalties were due or paid under the Exclusive Option Exercising Agreement.

Intangible assets consist of the following as of December 31, 2022 and 2021:

	Estimated Useful Life (Years)	2022	2021
Patent	10.75	$ 1,000,000	$ 1,000,000
Less: accumulated amortization		(806,201)	(713,178)
		$ 193,799	$ 286,822

Amortization expense was $93,023 for the years ended December 31, 2022 and 2021, respectively. The Patent will be fully amortized in January 2025. Amortization expense for the next two full years is expected to be approximately $93,000 per year.

NOTE 7. ACCRUED EXPENSES

Accrued expenses consist of the following as of December 31, 2022 and 2021:

	2022	2021
Salaries and benefits	$ 5,233,927	$ 3,723,819
Bonuses	2,298,057	2,204,927
Consulting fees	1,348,500	1,112,500
Fundraising commissions	243,320	243,320
Other	596,603	417,012
	$ 9,720,407	$ 7,676,578

Beginning in 2017, certain executives and employees of the Company agreed to delay payment of portions of their salaries, benefits, and bonuses until the Company raises sufficient funds to pay such amounts or reaches agreements to convert some or all of these amounts to equity.

NOTE 8. LONG TERM DEBT

Convertible Promissory note

On July 6, 2020, Origin issued a convertible promissory note payable (the 'Note") to LF Equity Income Fund ('EIF') (formerly CF Woodford Equity Income Fund), for a principal amount of $250,000. The Note bears interest at a fixed simple rate of 20% per annum.

At the direction of the EIF, the outstanding principal amount and any accrued interest shall convert into the Series B 20% Preferred Stock ('Series B Preferred Stock'). The number of shares of Series B Preferred Stock to be issued upon such conversion shall be equal to the principal amount plus accrued interest divided by $100, rounded to the nearest whole share.

If the Note has not been converted to Series B Preferred Stock prior to the date the Company consummates a qualified initial public offering ('IPO'), then the outstanding principal amount plus any accrued interest shall be due and payable thirty days after the closing of the Company's IPO.

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NOTE 8. LONG TERM DEBT (cont.)

In connection with the issuance of the Note, the Company also issued warrants to EIF to purchase 525 shares of common stock. The warrants have a term of five years and can be exercised at a price of $700 per share of common stock.

Interest expense related to the Note was $50,000 for the years ended December 31, 2022 and 2021.

2022 Convertible Notes Payable

On June 20, 2022, the Company commenced an offering of up to $5,000,000 of Convertible Notes (the '2022 Notes'). The offering was originally set to expire on September 15, 2022, however the Company and offering agent mutually agreed to extend the offering to November 30, 2022, having obtained the written consent of investors. The 2022 Notes bear interest at 6% per annum and are due and payable 3 years from the date of issuance, together with accrued interest. Prior to the due date, the 2022 Notes will automatically convert into shares of common stock in the event of a qualified IPO, as defined, and the listing or trading of the common stock on any qualified securities market. Conversion will take place at a price equal to 50% of the IPO price. Should the Company execute a private placement financing for the sale of common stock prior to the repayment of the 2022 Notes, the note holders shall have the option to convert the 2022 Notes to common stock at a price equal to 50% of the private placement price. In the event that the 2022 Notes are converted interest shall be waived. As of December 31, 2022, the Company has issued 2022 Notes with gross proceeds of $1,939,750. Interest expense related to the 2022 Notes was $31,555 for the year ended December 31, 2022.

NOTE 9. SHAREHOLDERS' DEFICIT, COMMON STOCK AND PREFERRED STOCK

Pursuant to the Amended and Restated Certificate of Incorporation dated September 18, 2014, the Company has the authority to issue a total of 4,000,000 shares of capital stock, consisting of 2,000,000 shares of $0.01 par value common stock, 1,000,000 shares of $0.01 par value special voting common stock, and 1,000,000 shares of $0.01 par value preferred stock.

Common Stock and Special Voting Common Stock

The shares of common stock and special voting common stock have the same rights and privileges and rank equally, share ratably, and are identical in all respects as to all matters, including with respect to: dividends; liquidation; no right of redemption; no preemptive rights; subdivision, combination or reclassification; and equal treatment in a merger or consolidation.

Except as otherwise required by law, the holders of the common stock and special voting common stock vote together as a single class. The holders of all outstanding shares of special voting common stock are entitled to, in the aggregate, a total number of votes for all such outstanding shares of special voting common stock held as of the applicable date on any matter that is submitted to a vote or for the consent of the shareholders of the Company equal to the lesser of: (a) the aggregate number of outstanding shares of special voting common stock, and (b) 19.5% of the total number of votes attaching to all outstanding equity securities of the Company which have the right to vote or consent on matters submitted to a vote or for the consent of the shareholders of the Company.

Preferred Stock

The preferred stock may be issued from time to time in one or more series. The Company's Board of Directors is authorized, by resolution adopted and filed in accordance with law, to provide, out of the unissued shares of preferred stock, for series of preferred stock and, with respect to such series, to fix the number of shares in each

series, the designation thereof, the powers, the preferences, and relative, participating, optional or other special rights thereof, and the quantifications, limitation or restrictions thereon, of each series and the variations in such voting powers, if any, and preferences and rights as between series.

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NOTE 9. SHAREHOLDERS' DEFICIT, COMMON STOCK AND PREFERRED STOCK (cont.)

On July 31, 2017, the Company's Board of Directors designated 30,000 shares of preferred stock as Series A 8% Convertible Preferred Stock ('Series A Preferred Stock'). As of December 31, 2022 and 2021, 20,000 shares of Series A Preferred Stock were issued and outstanding.

On January 2, 2020, the Company's Board of Directors designated 10,000 shares of preferred stock as Series B 20% Preferred Stock. As of December 31, 2022 and 2021, 10,000 shares of Series B Preferred Stock were issued and outstanding.

Series A Preferred Stock:

Dividends — Each holder of the Series A Preferred Stock is entitled to receive dividends at the simple rate of 8% of their investment per annum, payable in cash only upon redemption of the Series A Preferred Stock, or in equity and/or equity-linked securities upon conversion of the Series A Preferred Stock as described below, and *pari passu* with the Series B Preferred Stock and prior to and in preference to any declaration or payment of any dividend on the common stock.

Redemption Right — Commencing as of August 9, 2019 at the option of the holders of Series A Preferred Stock at any time or upon the closing date of the Qualified Equity Financing (as defined below) (the 'Redemption Date'), at the option of the holders thereof, the Company shall be required to redeem all of the shares of Series A Preferred Stock for cash. The redemption price paid shall be equal to $2,500,000 plus accrued dividends. As the redemption feature is not solely within the control of the Company, the Series A Preferred Stock does not qualify as permanent equity and has been classified as mezzanine equity.

Conversion Prior to a Qualified Equity Financing — At any time prior to the Redemption Date, but prior to the consummation of a Qualified Equity Financing (as defined below), each holder of Series A Preferred Stock shall be entitled to convert (based on the aggregate amount invested in the Series A Preferred Stock by each holder, the 'Invested Amount') the shares of Series A Preferred Stock held by such holder, and all dividends accrued but unpaid thereon, into shares of special voting common stock, with the number of shares of special voting common stock to be received to be determined for each holder by dividing the Invested Amount of such holder by the lesser of $1,100 or the lowest price per share paid by an investor in a private placement.

Conversion Upon and After a Qualified Equity Financing — At any time prior to the Redemption Date, and from and after the consummation by the Company the first equity financing following August 3, 2017 resulting in aggregate gross proceeds to the Company of not less than $15.0 million ('Qualified Equity Financing'), with the approval of the holders of a majority of the then outstanding shares of the Series A Preferred Stock, each holder shall convert (based on the Invested Amount of such holder) the shares of Series A Preferred Stock held by such holder, and all dividends accrued but unpaid thereon, into the applicable dollar amount of equity or equity-linked securities of the Company issued in the Qualified Equity Financing on the exact terms and conditions (including, without limitation, the same pre-money valuation of the Company at the time of consummation of the Qualified Equity Financing, but subject to any legal restrictions. In addition, the Series A Preferred Stock shall automatically convert to common stock based on the foregoing provision at the closing of a Qualified Equity Financing that is an underwritten initial public offering by the Company, or a private placement at a minimum of $1,100 per share.

Liquidation Preference — In the event of a liquidation, dissolution or winding up of the Company, the holders of the Series A Preferred Stock shall be entitled to receive out of the assets of the Company legally available for distribution, prior to and in preference to distributions to the holders of common stock or any subordinate Company capital stock, and either in preference to or *pari passu* with the holders of Series B Preferred Stock or any other series of preferred stock that may be issued in the future that is expressly made senior or *pari passu*, as

the case may be, an amount equal to the $100 per share of the Series A Preferred Stock. The remaining assets of the Company shall be distributed to the holders of the outstanding equity securities of the Company in accordance with their liquidation rights.

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NOTE 9. SHAREHOLDERS' DEFICIT, COMMON STOCK AND PREFERRED STOCK (cont.)

Voting Rights — Each share of Series A Preferred Stock will entitle the holder thereof to one vote on any matter brought before holders of common stock at any annual or special meeting of the Company's stockholders; provided that if at any time the holders own, in the aggregate, voting securities of the Company constituting more than 19.5% of the total voting share capital of the Company, on an as-converted basis, then the shares of Series A Preferred Stock shall be limited, in the aggregate and together with any other voting share capital of the Company held by the Holders, to 19.5% of the total number of votes, on an as-converted basis, such votes to be split equally on a fractional basis amongst all such shares of voting capital stock.

Series B Preferred Stock:

Dividends — Each holder of the Series B Preferred Stock shall be entitled to receive dividends at the simple rate of 20% of their investment per annum, payable in cash only upon redemption of the Series B Preferred Stock, and *pari passu* with the Series A Preferred Stock and prior to and in preference to any declaration or payment of any dividend on the common stock.

Redemption Right — Commencing on the earlier to occur of (i) December 31, 2020 and (ii) the closing date of the Qualified Equity Financing, at the option of the holders thereof, the Company shall be required to redeem all of the shares of Series B Preferred Stock for cash. The redemption price paid shall be equal to an aggregate of $1,000,000 plus accrued dividends. As the redemption feature is not solely within the control of the Company, the Series B Preferred Stock does not qualify as permanent equity and has been classified as mezzanine equity.

No Conversion — The shares of Series B Preferred Stock are not convertible into shares of common stock or other Company securities.

Liquidation Preference — In the event of a liquidation, dissolution or winding up of the Company, the holders of the Series B Preferred Stock shall be entitled to receive out of the assets of the Company legally available for distribution, on a *pari passu* basis with the Series A Preferred Stock and prior to and in preference to distributions to the holders of common stock or any subordinate Company capital stock, and either in preference to or *pari passu* with the holders of any other series of preferred stock that may be issued in the future that is expressly made senior or *pari passu*, as the case may be, an amount equal to the $100 per share of the Series B Preferred Stock. The remaining assets of the Company shall be distributed to the holders of the outstanding equity securities of the Company in accordance with their liquidation rights.

Voting Rights — Each share of Series B Preferred Stock will entitle the holder thereof to one vote on any matter brought before holders of common stock at any annual or special meeting of the Company's stockholders.

Woodford Subscription and Shareholders Agreement

Pursuant to the Subscription and Shareholders Agreement (the 'Subscription Agreement') dated September 18, 2014, between the Company and EIF, acting through its manager, Woodford Investment Management LLP ('WIM') and subject to certain conditions set forth in the Subscription Agreement, EIF purchased 40,998 shares of the Company's special voting common stock for $24,999,760. In addition, the Company and EIF entered into a Registration Rights Agreement which provides, among other rights, certain registration rights under the Securities Act of 1933 and applicable U.S. state securities laws, which rights shall be effective following the date of the consummation of an IPO. During 2015, WIM purchased 3,740 shares from other shareholders on behalf of Patient Capital Trust ('PCT'), and affiliated entity.

Woodford Securities Purchase Agreement

On August 3, 2017, Origin entered into a securities purchase agreement with WIM ('Woodford Agreement'). The Woodford Agreement entitles EIF and PCT to purchase up to 30,000 shares of Series A Preferred Stock at a

purchase price of $100 per share. In conjunction with the Woodford Agreement, the Company has authorized the sale of warrants to WIM or its affiliates to purchase up to $6,000,000 of the Company's special voting common stock or conversion

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NOTE 9. SHAREHOLDERS' DEFICIT, COMMON STOCK AND PREFERRED STOCK (cont.)

securities as defined therein. The warrants have a seven year term and can be exercised at a price equal to the lesser of $825 per warrant or 75% of the price per share paid by an investor in a private placement or a Qualified Equity Financing.

During 2017, WIM purchased 20,000 shares of the Series A Preferred Stock and warrants to purchase $5,000,000 worth of the Company's special voting common stock or conversion securities as defined in the Woodford Agreement on behalf of EIF (now known as LF Equity Income Fund) and PCT, now known as Schroder UK Public Private Trust ('SUPP').

Link Securities Purchase Agreements

On January 9, 2020, Origin entered into a securities purchase agreement with EIF, executed by Link Fund Solutions Limited ('Link'), the successor to WIM ('Link Agreement'). The Link Agreement entitles EIF to purchase up to 10,000 shares of Origin's Series B Preferred Stock at a purchase price of $100 per share. The Link Agreement also provides for the sale and issuance of warrants to EIF to purchase up to 1,400 shares of common stock. The warrants have a term of five years and can be exercised at a price of $700 per share of common stock. On January 9, 2020, Link purchased the 10,000 shares of Series B Preferred Stock and a warrant to purchase 1,400 shares of common stock on behalf of EIF.

Accumulated Other Comprehensive Income (Loss)

The following table summarizes the changes in each component of AOCI, net of tax:

	Market Value Adjustment for Investments	Foreign Currency Translation	Accumulated Other Comprehensive Income (Loss)
Balance December 31, 2020	$ (72,413)	$ (1,828)	$ (74,241)
Unrealized (losses) gains arising during the period	(20,689)	7,852	(12,837)
Balance December 31, 2021	(93,102)	6,024	(87,078)
Unrealized (losses) gains arising during the period	(41,379)	6,049	(35,330)
Balance December 31, 2022	$ (134,481)	$ 12,073	$ (122,408)

NOTE 10. SHARE-BASED COMPENSATION

The Company awarded share-based compensation under the 2014 Equity Incentive Plan (the 'Share Plan') during the years ended December 31, 2022 and 2021.

2014 Equity Incentive Plan

In March 2014, the Company's board of directors and shareholders adopted the Share Plan. The Share Plan is designed to enable the Company to offer directors, officers, managers, employees, consultants, and advisors, as defined, an opportunity to acquire an equity interest in the Company. The Share Plan reserves 29,000 shares of common stock for issuance in accordance with the Share Plan's terms.

All the Company's officers, directors, employees, and consultants are eligible to be granted awards under the Share Plan. The types of awards that may be granted under the plan include stock options, stock appreciation rights, restricted stock, restricted stock units, stock bonus awards, performance compensation awards, and other

share-based awards subject to limitations under applicable law. All awards are subject to approval by the board of directors. As of December 31, 2022, 9,952 options remain available to grant under the 2014 Equity Incentive Plan.

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NOTE 10. SHARE-BASED COMPENSATION (cont.)

Stock option activity related to options granted under the Share Plan to both employees and non-employees and related information for the years ended December 31, 2022 and 2021 is provided below:

	Shares	Weighted-Average Exercise Price	Weighted-Average Remaining Contractual Term (Years)
Outstanding at December 31, 2020	20,721	$ 415.85	3.20
Granted	2,750	$ 1,400.00	6.31
Forfeited or expired	(4,000)	$ (287.50)	—
Exercised	—	—	—
Outstanding at December 31, 2021	19,471	$ 581.22	3.11
Forfeited or expired	(1,545)	$ (677.35)	—
Exercised	(300)	$ 180.00	—
Outstanding at December 31, 2022	17,626	$ 579.56	3.10
Options exercisable at December 31, 2022	17,626	$ 579.56	3.10

The Company granted an aggregate of nil and 2,750 options under the 2014 Equity Incentive Plan in 2022 and 2021, respectively, of which nil and 1,000 were granted to non-employee directors and consultants, respectively.

Informal Benefit Plan

The Company entered into option agreements with certain executives and consultants of the Company. In accordance with these option agreements, which were approved by the board of directors, a certain amount of the option shares was offered as an incentive, which is intended to be ‘nonqualified’ stock options pursuant to Section 422 of the Internal Revenue Code of 1986 and, the options shall be deemed to have been issued under an ‘employee benefit plan’ for purposes of and as defined in Rule 405 promulgated under the Securities Act of 1933, as amended. In accordance with the terms of the option agreements, the options may be exercised by giving no less than two business days’ written notice of exercise.

Stock option activity related to options granted to both employees and non-employees under the Informal Benefit Plan and related information for the years ended December 31, 2022 and 2021 is provided below:

	Shares	Weighted-Average Exercise Price	Weighted-Average Remaining Contractual Term (Years)
Outstanding at December 31, 2020	5,300	$ 43.21	4.92
Granted	—	—	—
Forfeited or expired	—	—	—
Exercised	—	—	—

Outstanding at December 31, 2021	5,300	$ 43.21	3.92
Granted	—	—	—
Forfeited or expired	—	—	—
Exercised	—	—	—
Outstanding at December 31, 2022	5,300	$ 43.21	2.92
Options exercisable, December 31, 2022	5,300	$ 43.21	2.92

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NOTE 10. SHARE-BASED COMPENSATION (cont.)

The exercise price of both the equity incentive plan and the informal benefit plan options shall generally not be less than 100% of the fair market value of the common stock on date of grant, provided, however, that the exercise price of an incentive stock option granted to a 10% Shareholder shall generally not be less than 110% of the fair market value of the Company's common stock. On occasion, the Company's board of directors approve grants of options that have an exercise price less than the fair market value of the shares at the date of grant. There were no such options granted during the years ended December 31, 2022 and 2021.

Summary of Activity

The weighted-average grant date fair value of options granted to employees during the year ended December 31, 2021 was $1,090.41. The fair value of each option award was estimated on the date of grant using the Black-Scholes option pricing model using the following weighted-average assumptions:

	2021
Dividend yield	—
Expected volatility	130.4%
Risk-free interest rate	0.24% – 0.53%
Expected life (in years)	3.5

The expected term for the options granted reflects the simplified method, which is an average of the contractual term of the options and its vesting period. Expected volatility is based on the historical weekly volatility of comparable public companies calculated over a period reflecting the expected term of the options up to each respective grant date.

As of December 31, 2022, there was approximately nil of unrecognized compensation cost related to options issued subject to vesting.

Non-cash compensation expense relating to stock options was calculated by using the Black-Scholes option pricing model, amortizing the value calculated over the vesting period and applying a zero-forfeiture percentage as estimated by the Company's management, using historical information. The Company has elected to recognize compensation cost for option awards that have graded vesting schedules on a straight-line basis over the requisite service period for the entire award. For the years ended December 31, 2022 and 2021, the non-cash compensation expense relating to option grants aggregated $77,530 and $3,103,862, respectively. The compensation expense is included in 'Salaries and benefits' and 'Consulting', as appropriate, in the accompanying consolidated statements of operations.

NOTE 11. COMMON STOCK PURCHASE WARRANTS

Warrant activity for the years ended December 31, 2022 and 2021 is as follows:

	Numbers of Warrants	Weighted-Average Exercise Price
Outstanding at December 31, 2020	25,209	$ 549.91
Issued	—	—
Expired	(4,635)	—

Outstanding at December 31, 2021	20,574	631.11
Issued	4,220	35.55
Exercised	(4,000)	0.01
Expired	(6,461)	—
Outstanding at December 31, 2022	14,333	$ 523.68

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NOTE 11. COMMON STOCK PURCHASE WARRANTS (cont.)

In accordance with his Employment Agreement, the Company's Chairman & Chief Executive Officer is entitled to receive a final tranche of warrants on achieving a second product regulatory milestone. The number of warrants will represent 3.75% of the issued and outstanding common stock immediately before the milestone is achieved, with an exercise price equal to the price per share in the most recently completed round of funding for the Company. Management considers that, at December 31, 2022 and 2021, there was insufficient probability of achievement of the milestone to justify a charge to operations in those years. The milestone has not been met to the date of signing these consolidated financial statements.

Warrant expense related to Common Stock purchase warrants was $5,886,390 and nil for the years ended December 31, 2022 and 2021, respectively.

NOTE 12. EMPLOYEE BENEFIT PLANS

Effective July 1, 2015, Origin adopted the Origin, Inc. 401(k) Profit Sharing Plan and Trust (the 'Plan'). The Plan is available to certain US employees age 21 and older upon commencement of employment or July 1, 2015, whichever date is later. The Company matches a portion of employee contributions up to 3.5% of their compensation. In addition, Origin may make profit sharing contributions. The Company made contributions to the Plan of nil and $10,411 for the years ended December 31, 2022 and 2021, respectively.

In May 2015, Origin began making contributions to Simplified Employee Pension Plans ('SEP Plans') for certain of the Company's executives. The Company makes discretionary contributions not to exceed 6.0% of employee wages. Expense related to the SEP Plans was nil for the years ended December 31, 2022 and 2021.

NOTE 13. RELATED PARTY TRANSACTIONS

Details of transactions between the Company and related parties for the years ended December 31, 2022 and 2021 are as follows:

	Fees Paid to Related Parties	
	2022	2021
Anthony Brampton	$ 90,000	$ 90,000
Victor Micati	$ 90,000	$ 90,000

	Due to Related Parties	
	2022	2021
Michael Preston	$ 384,400	$ 484,400
Michael Pohl	286,200	296,200
John Fernandes	53,253	103,806
David Dantzker	30,000	—
Alexander Dolgopolsky	13,000	13,000
	$ 766,853	$ 897,406

Mr. Brampton and Mr. Micati are independent director members of the Company's board of directors and receive their annual director fees beginning October 2014.

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NOTE 14. FAIR VALUE MEASUREMENT

The Company reviews the fair value of its assets and liabilities on a recurring basis and nonrecurring basis. Fair value is defined as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. To increase the comparability of fair value measurements, a three-tier fair value hierarchy, which prioritizes the inputs used in the valuation methodologies has been established as follows:

- Level 1 — Quoted prices for identical assets and liabilities in active markets.
- Level 2 — Quoted prices for similar assets or liabilities in active markets, quoted prices for identical or similar assets and liabilities in markets that are not active, or other inputs that are observable or can be corroborated by observable market data.
- Level 3 — Unobservable inputs reflecting the Company's own assumptions, consistent with reasonably available assumptions made by other market participants. These valuations require significant judgment.

The following tables summarize the fair value hierarchy for assets measured at fair value on a recurring basis at December 31, 2022 and 2021:

	2022		2021	
	Total Fair Value	Level 1	Total Fair Value	Level 1
Marketable securities:				
Equity securities	$ 165,518	$ 165,518	$ 206,897	$ 206,897
	$ 165,518	$ 165,518	$ 206,897	$ 206,897

Unrealized losses on the revaluation of the Company's equity securities amounted to $41,379 and $20,689 for the years ended December 31, 2022 and 2021, respectively.

NOTE 15. INCOME TAXES

For the years ended December 31, 2022 and 2021, the Company incurred net operating losses and, accordingly, no provision for income taxes has been recorded. In addition, no benefit for income taxes has been recorded due to the uncertainty of the realization of any tax assets. At December 31, 2022, the Company had approximately $15,447,688 of federal and $18,306,468 of state net operating losses ('NOL'). Federal NOL incurred in years prior to 2018, if not utilized, will begin to expire in 2034. Federal net operating losses incurred in years after 2017 will carry forward indefinitely. State net operating losses, if not utilized, will begin to expire in 2030.

A reconciliation of the federal statutory income tax rate to the Company's effective income tax rate for 2022 and 2021 are as follows:

	2022	2021
Taxes calculated at federal rate	21.0%	21.0%
Permanent differences	(13.6)%	(5.9)%
State tax, net of federal impact	(0.0)%	(0.0)%
Change of valuation allowance	(2.7)%	(15.1)%
Deferred true-up	(4.7)%	(0.0)%

Provision for income taxes	(0.0)%	(0.0)%

ORIGIN, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
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NOTE 15. INCOME TAXES (cont.)

The approximate tax effect of significant temporary differences that give rise to the Company's deferred tax assets and liabilities as of December 31, 2022 and 2021, are as follows:

	2022	2021
Deferred income tax assets:		
Accruals and other	$ 703,064	$ 618,696
Fixed assets	(4,737)	1,835
Intangibles	68,526	60,620
Capitalized costs	8,847,401	8,714,272
Unrealized FX gain	(1,677)	—
Net operating loss and credit carryforwards	4,891,597	4,870,451
Less: valuation allowances	(14,504,174)	(14,265,874)
Deferred income tax assets	$ —	$ —
Deferred income tax liabilities:	$ —	$ —
Net deferred income taxes	$ —	$ —

Deferred tax assets and liabilities are computed by applying the federal and state income tax rates in effect to the gross amounts of temporary differences and other tax attributes, such as net operating loss carry-forwards. In assessing if the deferred tax assets will be realized, the Company considers whether it is more likely than not that some or all of these deferred tax assets will be realized. The ultimate realization of deferred tax assets is dependent upon the generation of future taxable income during the period in which these deductible temporary differences reverse.

Based on available objective and subjective evidence, including the Company's history of losses, management believes it is more likely than not that the net deferred tax assets will not be fully realizable. Accordingly, the Company provided for a full valuation allowance against its deferred tax assets at December 31, 2022, and 2021. During the years ended December 31, 2022 and 2021, the valuation allowance increased by $238,300 and $1,368,054, respectively. The increase was attributable to the increase in our net operating loss carryforwards and several other deferred tax assets. The total valuation allowance results from the Company's estimate of its inability to recover its net deferred tax assets.

As discussed above, at December 31, 2022, the Company has federal and state NOL carry forwards, which are available to offset future taxable income. These carry forwards may be subject to an annual limitation under Section 382 of the Internal Revenue Code ('IRC') of 1986, and similar state provisions if the Company experienced one or more ownership changes which would limit the amount of NOL carryforwards that can be utilized to offset future taxable income and tax, respectively. In general, an ownership change, as defined by Section 382, results from transactions increasing ownership of certain stockholders or public groups in the stock of the corporation by more than 50 percentage points over a three-year period. The Company has not completed an IRC Section 382 analysis. If a change in ownership were to have occurred, NOL carryforwards could be eliminated or restricted. If eliminated, the related asset would be removed from the deferred tax asset schedule with a corresponding reduction in the valuation allowance. Due to the existence of the valuation allowance, limitations created by future ownership changes, if any, will not impact the Company's effective tax rate.

The Company files income tax returns in the United States and the state of New Jersey. Federal tax returns have a 3-year statute of limitations period with which the IRS can perform an examination, however, net operating losses from closed years remain open to examination if utilized in an open year. New Jersey tax returns have a

4-year statute of limitations period. The Company's policy is to recognize interest expense and penalties related to income tax matters as tax expense. As of December 31, 2022 and 2021, there are no unrecognized tax benefits, and there are no significant accruals for interest related to unrecognized tax benefits or tax penalties.

ORIGIN, INC. AND SUBSIDIARIES
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NOTE 16. LEASES

The Company has an operating lease for office space for general and administrative purposes. The lease expires June 30, 2023 and may be extended upon mutual agreement by the Company and the lessor.

Future minimum lease payments for this operating lease at December 31, 2022 is as follows:

	Operating Lease Commitment
2023	$ 57,404
Total future lease payments	57,404
Less: imputed interest	(709)
Total present value of lease liability	$ 56,695
Current lease liability	56,695
Long-term lease liability	—
Total lease liability	$ 56,695

The Company had an additional operating lease for general and administrative purposes that expired in March of 2021. Rent expense recognized under operating leases was $113,847 and $125,100 for the years ended December 31, 2022 and 2021, respectively.

NOTE 17. COMMITMENTS AND CONTINGENCIES

Employment Agreements

The Company has entered into employment agreements with several executive officers, other members of management, and certain key employees. These agreements generally have three to four-year terms, typically indicate a base salary, and often contain provisions for discretionary bonuses and milestone bonuses in the case of the Chief Executive Officer. Certain of the executives are also entitled to a separation payment if terminated without ‘cause’ or upon voluntary termination of employment for ’good reason’ following a ‘change of control’ (as these terms are defined in the employment contracts).

Consulting Agreements

The Company has retained several consultants in the US and the UK to provide various consultative services. The contracts for these consultants extend into 2023 and are all terminable with 30 days’ notice by either party. These services provided to the Company include relate primarily to finding sources of funding.

Royalties on Sales

Under the terms of its Patent acquisition, the Company is obligated to pay Dr. Pekshev single-digit royalties at varying rates on net sales of the device under patent protection from January 1, 2015 to December 31, 2024. During the years ended December 31, 2022 and 2021, the Company did not make any royalty payments to Dr. Pekshev as there were no net sales related to the device.

NOTE 18. SUBSEQUENT EVENTS

The Company has evaluated the effect of events and transactions subsequent to December 31, 2022 through the date of issuance of the consolidated financial statements and determined that no subsequent events have occurred that require recognition in the consolidated financial statements.

In January 2023, a long-term liability amounting to $100,000 was exchanged for 100 shares of common stock.

ORIGIN, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
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NOTE 18. SUBSEQUENT EVENTS (cont.)

On February 24, 2023, the Company entered into a letter agreement with the holder of the Series B Preferred Stock to provide for a premium to be paid to EIF upon redemption in the event more than $15 million is raised by Origin (net of broker's fees) in an IPO. The initial premium shall be calculated as $100,000 in cash for each $1 million (net of broker's fees) raised by Origin in an IPO in excess of $15 million (net of broker's fees). If the initial premium is less than $1 million, Origin shall pay to EIF an additional amount equal to $100,000 in cash for each $1 million (net of broker's fees) raised by Origin in any subsequent equity capital raising transaction completed within one year of the date of the agreement (subject to an extension of up to six months by EIF in its absolute discretion). The aggregate premium payable shall be capped at $1 million.

In February 2023, EIF and SUPP sold their entire holdings of common stock (3,740 shares), special voting common stock (40,998 shares), Series A Preferred Stock (20,000 shares) and $5,000,000 of warrants to Square Table LLC ("STLLC"). All voting and pre-emptive rights under the subscription agreements pertaining to the EIF and SUPP investments were terminated. EIF also sold its holding of 1,925 warrants to STLLC. Michael Preston, Chairman and Chief Executive Officer of Origin, is the sole manager of STLLC.

On February 27, 2023, STLLC, being the sole owner of the Series A Preferred Stock, elected to convert the Series A Preferred Stock plus accumulated dividends of $884,457 to 2,622 shares of special voting common stock at the conversion price of $1,100 per share. At the same time, STLLC, exercised $5,000,000 of warrants for 1,060 shares of special voting common stock, on a cashless basis, at a fair market value of $1,000 per share.

At the date of issuance of these consolidated financial statements, STLLC owns 3,740 shares of common stock, 44,680 shares of special voting common stock and warrants to purchase 1,925 shares of common stock, exercisable at $700 per share. EIF continues to hold 10,000 shares of the Series B Preferred Stock and a convertible promissory note for $250,000.

Subsequent to the date of these consolidated financial statements, the Company has filed for an amendment to the certificate of incorporation with the state of Delaware to effectuate a name change from Origin, Inc. to Origin Life Sciences, Inc.

Origin Life Sciences, Inc.

3,000,000 Shares

Common Stock

PROSPECTUS

Boustead Securities, LLC

_____, 2023

Through and including , 2023 (the 25th day after the date of this prospectus), all dealers effecting transactions in these securities, whether or not participating in this offering, may be required to deliver a prospectus. This is in addition to a dealer's obligation to deliver a prospectus when acting as an underwriter and with respect to an unsold allotment or subscription.

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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 and is not soliciting an offer to buy these securities in any jurisdiction where the offer or sale is not permitted.

PRELIMINARY PROSPECTUS **SUBJECT TO COMPLETION, DATED MARCH 13, 2023**

Origin Life Sciences, Inc.

Shares

Common Stock

This prospectus relates to the resale of 775,900 shares of common stock, par value $0.01 per share, of Origin Life Sciences, Inc., which shares will be issuable upon conversion of convertible promissory notes (the "Convertible Notes"), and which Convertible Notes will automatically convert into common stock at a conversion price of $2.50 per share upon the effectiveness of this registration statement, held by the selling stockholders named in this prospectus.

Prior to the initial public offering, there has been no public market for our common stock. We have reserved the symbol "OLSI" for purposes of listing our common stock on NYSE American LLC ("NYSE American") and have applied to list our shares on NYSE American. There is no guarantee or assurance that our shares of common stock will be approved for listing on NYSE American. This offering is contingent upon receiving approval of our listing from NYSE American and the closing of our initial public offering. We will not receive any proceeds from the sale of shares by the selling stockholder.

Any shares sold by the selling stockholders until our common stock is listed or quoted on an established public trading market will take place at $5.00 per share, which is the per share public offering price we are selling in our initial public offering. Thereafter, any sales will occur at prevailing market prices or in privately negotiated prices. The distribution of securities offered hereby may be effected in one or more transactions that may take place in ordinary brokers' transactions, privately negotiated transactions or through sales to one or more dealers for resale of such securities as principals. Usual and customary or specifically negotiated brokerage fees or commissions may be paid by the selling shareholders. No sales of the shares covered by this prospectus shall occur until the common stock sold in our initial public offering begins trading on NYSE American. The selling stockholders have represented to us that they will not offer or sell their shares prior to the closing of the initial public offering.

On _____, 2023, a registration statement under the Securities Act of 1933, as amended (the "Securities Act") with respect to our initial public offering of shares of our common stock was declared effective by the U.S. Securities and Exchange Commission. We received approximately $13.0 million in net proceeds from the offering (assuming no exercise of the underwriters' over-allotment option) after payment of underwriting discounts and commissions and estimated expenses of the offering.

Investing in our common stock involves a high degree of risk, including the risk of losing your entire investment. See "Risk Factors" beginning on page 15 of the primary offering prospectus contained in this Registration Statement to read about factors you should consider before buying our common stock.

Neither the Securities and Exchange Commission nor any state securities commission nor any other regulatory body 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

PROSPECTUS SUMMARY

This summary highlights selected information contained elsewhere in this prospectus and does not contain all of the information that you should consider in making your investment decision. Before deciding to invest in our common stock, you should read this entire prospectus carefully, including the sections of this prospectus entitled "Risk Factors" and "Management's Discussion and Analysis of Financial Condition and Results of Operations" and our financial statements and the related notes included elsewhere in this prospectus.

Unless the context otherwise requires, references in this prospectus to the "Company," "Origin," "we," "us" and "our" refer to Origin Life Sciences, Inc.

Our Business

We are a clinical-stage biotechnology company that has been developing a proprietary patented high-energy plasma device that generates nitric oxide ("NO") in the form of a plasma/NO stream and delivers it to targeted locations of the body. The stream can potentially be used for various therapeutic purposes, including as an anti-infective, anti-inflammatory and tissue-regenerative therapy for chronic wounds and skin and soft tissue infections ("SSTIs"). The U.S. Food and Drug Administration (the "FDA") previously determined that our product will be a Class III medical device reviewed under a premarket approval ("PMA") application with the FDA's Center for Devices and Radiological Health ("CDRH") consulting with the Center for Drug Evaluation and Research ("CDER") as necessary. The cornerstone of the plasma/NO therapy is our patented delivery platform named "Ionojet" which allows us to turn atmospheric air into a plasma/NO stream that has been shown in investigations: (i) to be non-toxic, (ii) to generate NO activity up to 3 cm below the skin, and (iii) to stimulate sustained biological activity in tissue for up to an hour after delivery of the therapy. To date, our clinical activities have been focused on the clinical trials described below, including our dose-ranging feasibility clinical trial for the treatment of diabetic foot ulcers completed in 2018 using the plasma/NO stream generated from our Ionojet, and the preparation for our planned pivotal clinical trial, including finalization of the prototype of the Ionojet that we intend to use in our pivotal trial.

When used in this prospectus, the term "pivotal" trial is the clinical investigation intended to gather additional information about the safety and effectiveness of the Ionojet device that we believe will be the final clinical trial that will be required to support approval of a PMA for the device by the FDA for the treatment of diabetic foot ulcers. However, if the FDA should determine that such clinical trial (that we refer to as the pivotal trial) has not demonstrated reasonable assurance of the safety and effectiveness of the device, we may be required to conduct a further clinical trial to support approval of a PMA. Reference in this prospectus to the term "feasibility" trial refers to all clinical studies that precede the pivotal trial. Prior to commencing our pivotal trial in diabetic foot ulcers, we will need to submit, and receive approval of, a new Investigational Device Exemption ("IDE") filing, permitting the use of the reengineered design of the Ionojet in a new clinical study. We anticipate that we will be able to submit the new IDE approximately six months after consummation of the initial public offering and that it will take approximately three months after submission of the IDE to receive approval thereof from the FDA. After receiving approval of the new IDE, we expect that it will take approximately three months to commence the pivotal trial, which will require Institutional Review Board ("IRB") approval of the study, identification and initiation of clinical trial sites and patient recruitment activities. We do not believe that the modifications to the device or the requirement to submit, and receive approval of, a new IDE has had, or will have, an effect on our expected timeline for commencement of the pivotal trial.

We plan to seek premarket approval of the Ionojet from the FDA as a Class III medical device, assuming we are able to complete our pivotal trial and the data are favorable. If we are unable to complete our pivotal trial or, upon completion of the trial, the outcomes of the trial design are not met, we may not be able to seek premarket approval of the Ionojet. We expect to submit our PMA application in the second quarter of 2024 and the FDA's review of the PMA can range from 6 to 15 months depending on whether the FDA raises significant issues during its interactive review. If we receive premarket approval from the FDA of our technology for the treatment of diabetic foot ulcers, our goal is to market our technology to hospitals, wound clinics and private

podiatrist offices to treat diabetic foot ulcers and to generate revenue by charging for the device on a usage basis. We do not intend to generate revenue from the sale of the Ionojet device, of which we intend to retain ownership. In addition to wound healing, we believe that our technology has application in many additional indications including dermatology, infection control, podiatry, dentistry, pain and inflammation and cosmetics, as well as potentially in certain respiratory infections, both viral and

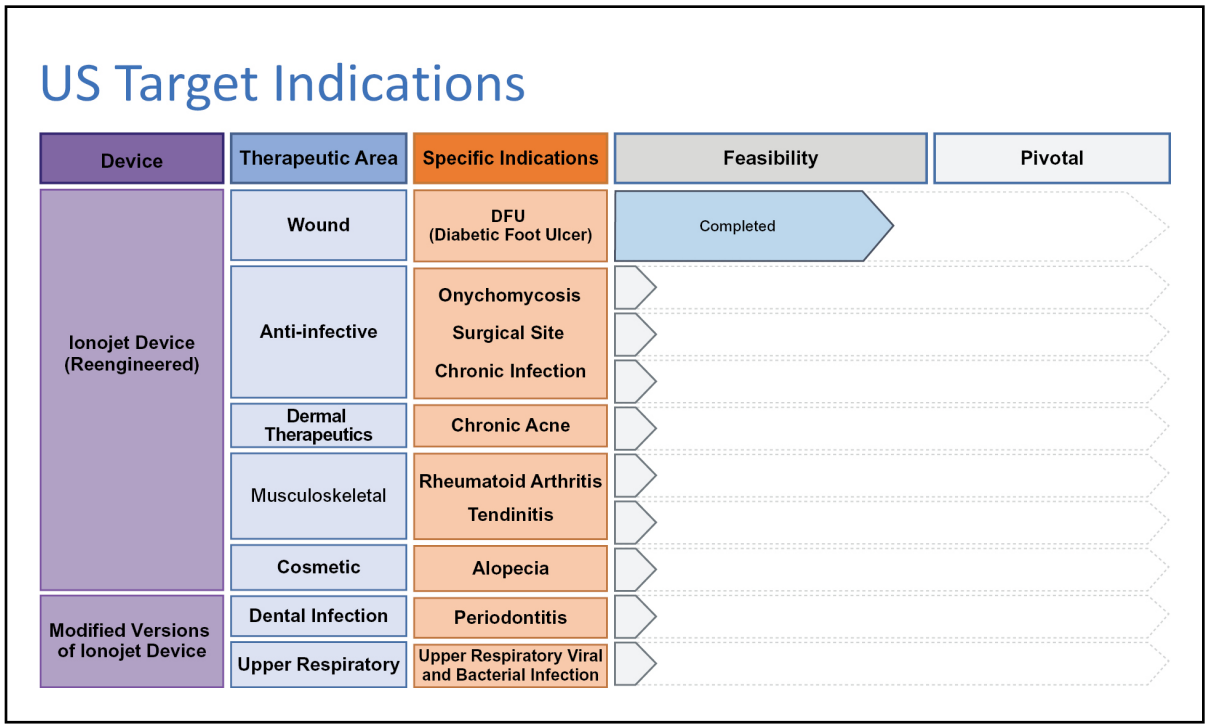
bacterial, oral infections, dental indications, ophthalmic and facial applications and in topical indications, although to date the only pre-clinical and clinical studies we have conducted with our Ionojet device have been with regard to wound healing, and our pivotal clinical trial will focus solely on diabetic foot ulcers.

The plasma/NO stream generated by our device has the potential to promote healing in various ways as a result of the effect that NO has on immune system regulation, blood vessel regulation, tissue regeneration and defending against infection. In particular, NO represents a potential wound therapeutic agent due to its ability to regulate inflammation, increase blood flow, decrease blood pressure, eradicate bacterial infections, and promote the growth and activity of immune cells. Since the plasma/NO stream has been shown in investigations to generate NO activity up to 3 cm below the skin, we believe that the delivery of the NO via plasma energy allows the NO to pass through the skin and locally saturate the tissue and that this saturation enhances the NO pathways already present in the human body.

We believe that our therapy is novel in that it is intended to simultaneously both disinfect and promote the healing of infected wounds. We also are not aware of any currently approved technology to deliver site-specific and therapeutically relevant concentrations of NO to skin and soft tissue, as well as to joints and muscles, leading to significantly-increased levels of NO as much as three centimeters beneath the skin. We believe we are the furthest along in the clinical development of a therapy of this kind. We are continuing to explore and effect functional and aesthetic improvements to the device to meet the expectations of the U.S. market prior to commercial deployment and intend to use a portion of the proceeds of the initial public offering to implement such improvements to our Ionojet technology and prepare for the submission of a new IDE for our pivotal trial in diabetic foot ulcers.

We are a clinical-stage biotechnology company with a limited operating history. We also have a history of operating losses and expect to continue to incur substantial losses for the foreseeable future. Our independent registered public accounting firm has expressed substantial doubt about our ability to continue as a going concern. Our cash and the proceeds of the initial public offering will only fund our operations for a limited time. The proceeds from the initial public offering will be insufficient to allow us to fully fund completion of our pivotal clinical trial and the premarket approval process, which we estimate will cost $30 million in total. We will need to raise additional capital to commence and complete the pivotal clinical trial.

The following is a summary of the targeted indications for which we intend to explore the treatment of using the therapy generated by the Ionojet device, as well as the stage of clinical development for each indication to date. It is anticipated that for all of the indications set forth below our device will generate a plasma/ NO stream and deliver it to the patient; however for wounds, anti-infective, dermal therapeutics, burns and musculoskeletal, and cosmetic treatments we plan to use our reengineered Ionojet. we infections and upper respiratory tract infections, adaptations to the reengineered Ionojet will be required.



To market additional indications, we will need to obtain a new premarket authorization from the FDA specific to the indication. At this time, we are unable to determine the device class or regulatory pathway for each indication. The type of FDA authorization required for each indication — i.e., 510(k) clearance, de novo classification, a PMA, or a supplement to our original PMA — will depend on factors such as the risk classification of the new indication and the classification of previously authorized technologies. We anticipate that the pilot studies and studies for safety that we have conducted to date for the Ionojet device will be applicable to each of the indications in the chart above. Therefore, subject to the availability of additional financing, we intend to commence feasibility studies to evaluate the effectiveness of the plasma/NO stream for the treatment of each of these indications, assuming we receive FDA approval of our Ionojet device for the treatment of diabetic foot ulcers.

Planned Pivotal Clinical Trial

We have been working on preparations for our planned pivotal trial in diabetic foot ulcers, upon which FDA approval will primarily be based. These preparations fall into three areas: (i) modifications to the Ionojet technology, (ii) medical, and (iii) administrative. The following is a summary:

(i) One of the purposes of a feasibility trial is to determine what modifications need to be made to a device prior to a pivotal trial, since the pivotal trial should be carried out with the form of the device that will be marketed post-approval. From clinician feedback and our own observations, we were able to identify several desirable changes that we believe will enhance commercial adoption, and we have been working on the reengineered design of our device in our own facility. We have made what we believe are significant improvements to our Ionojet technology, all of which we are seeking to protect with new U.S. and international patent filings. When these improvements have been completed, which is expected in mid-2023, and subject to the availability of adequate funding and FDA approval of a new IDE for our pivotal trial in diabetic foot ulcers for the device with the modifications, we will look to commence the production of devices for the planned pivotal trial.

(ii) Medically, we have started work on the study design and protocol for our pivotal clinical trial. There are several important decisions to be made about the design of the study, including the dose or doses to be studied. Subject to FDA approval of our protocol, we intend to employ an adaptive study design for the pivotal trial, under which our targeted delta (or superiority over SoC) will not be finalized until we have seen the early results from the treatment arms.

(iii) Administratively, we expect to begin identifying clinical sites and investigators for the trial and assembling the appropriate advisory and review panels in early 2023. The timing of the pivotal trial is dependent on the availability of adequate financing and regulatory approval to conduct the study.

Market Opportunity

Current Indications

Our initial objective is to seek regulatory approvals for our therapy to address the unmet needs of patients suffering from chronic wounds and SSTIs. As discussed, the observational, IRB approved study conducted by Dr. Treadwell in 2013 evaluated the promotion of wound-healing and control of infection in the treatment of various chronic wounds. Dr. Treadwell is a qualified wound surgeon who is expected to serve as our Chief Clinical Officer commencing at some time shortly prior to or upon the consummation of this offering. According to an article published by Fortune Business Insights entitled Chronic Wound Care Market Size, Share & COVID-19 Impact Analysis (March 2022), the chronic wound care market was estimated at $11.61 billion in 2021, of which an estimated $4.4 billion was attributable to North America. The global chronic wound care market is projected to grow from $12.36 billion in 2022 to $19.52 billion by 2029, exhibiting a compound annual growth rate ("CAGR") of 6.7% during the forecast period. Diabetic foot ulcers comprise 43.1% of the global chronic wound care market, as reported by the same article.

In the United States, the treatment market size for SSTIs, also referred to as acute bacterial skin and skin structure infections (ABSSSI) by the FDA, was valued at $7.3 billion in 2018 and is projected to reach $14.9 billion by 2026, exhibiting a CAGR of 9.5%, as reported by Fortune Business Insights in an article entitled Acute Bacterial Skin and Skin Structure Infections (ABSSSI) Treatment Market Size, Share and Industry Analysis (July 2019).

We initially plan to focus on the diabetic foot ulcer treatment market. According to a report published by GlobeNewswire on July 20, 2022, the global diabetic foot ulcer treatment market was valued at $8.6 billion in 2021 and is projected to reach $14.8 billion by 2030, growing at a CAGR of 6.22% from 2022 to 2030. The North American diabetic foot ulcer treatment market reached $3.8 billion in 2021, contributing to the highest market share that year, and based upon a CAGR of 6.22% the North American market will reach a value of $6.54 billion by 2030. In due course we may also look to secure regulatory approval and market our therapy for chronic wounds outside the United States in partnership with local organizations. In the meantime, and in parallel with our pivotal trial on diabetic foot ulcers, we plan, subject to available capital resources, to broaden our approach into other therapeutic areas and, prior to that, to conduct confirmatory pre-clinical studies into blood-flow and infection-control.

The cost of the therapy to the patient is expected to be based upon the dose administered, as measured by frequency and duration of administration. Based upon the current costs associated with advanced wound therapy, we estimate that the reimbursed cost of the therapy administered using our Ionojet technology for diabetic foot ulcers will be approximately $10,000 per patient.

Our strategy is to undertake proof-of-concept work in other wound-healing indications as well as non-wound-healing areas. For the latter, we are looking at target indications in other treatment areas (known as verticals) such as dermatology, infection control, podiatry, dentistry, pain and inflammation and cosmetics, as we believe NO may have clinical relevance to all these verticals. By demonstrating our clinical relevance outside diabetic foot ulcers, we believe we can add greater shareholder value in a shorter timeframe. Selection of target indications will be made on the basis of such factors as market size, regulatory constraint, estimate of likely success and time to completion.

Initial proof-of-concept studies have been carried out under Institutional Review Board (“IRB”) approval in two important indications — infected pacemaker and defibrillator implant wounds (n=7) and infected orthopaedic implant wounds (n=8). Both studies demonstrated that the therapy generated by our medical device was well-tolerated and each was the subject of a poster presented at conferences of the Symposium on Advanced Wound Care, one of the world’s leading wound care education organizations, in San Antonio, Texas in 2021 and in Las Vegas, Nevada in 2022. Each study has been conducted by Dr. Treadwell as an observer initiated, open, non-controlled observational, IRB approved study to examine the effect of plasma/NO in treating patients with infected implanted hardware or cardiac pacemakers. In the pacemaker and defibrillator study, seven patients were referred to Dr. Treadwell with infected pacemaker pockets. All seven patients completed the protocol (clearance of the infection) successfully with no reported adverse effects and clearing of the infections without removal of the implant. This trial remains open for additional qualified patients. In the orthopaedic implant study, eight patients were seen by Dr. Treadwell because of infected implanted orthopaedic hardware. All eight patients completed the protocol (clearance of the infection) with no reported adverse effects and clearing of the infections without removal of the hardware. This trial remains open for additional qualified patients. In the pacemaker and defibrillator study, all seven patients healed with an average of four treatments and no patient needed to have his/her implant removed. In the orthopaedic implant study, all eight patients healed without removal of the hardware. The smaller (orthopaedic) wounds healed with an average of ten weekly treatments while the larger wounds (neurosurgical) healed with an average of 22 weekly treatments. Additional studies are planned in onychomycosis (toenail fungus), radiation burns and sickle cell ulcers subject to available funding.

Future Indications

In addition, we intend to conduct clinical trials and seek regulatory approval for the use of the plasma/NO therapy generated by our device in the treatment of the following indications, each of which would increase our market opportunity, and, collectively, would increase our market opportunity even more. Although we have not conducted clinical trials for any of the following indications, we anticipate that we will be able to rely upon the safety and early feasibility studies that have been conducted to date using the Ionojet device for our clinical studies in the following indications, assuming that the Ionojet device is approved by the FDA for the treatment of diabetic foot ulcers.

Onychomycosis is a fungal infection that occurs in the fingernails or toenails. According to Verified Market Research, the U.S. onychomycosis market size was valued $2.9 billion in 2021 and is projected to reach $5.5 billion by 2023, growing at a CAGR of 8.6% from 2022 to 2030.

The global surgical site infection control market was valued at $4.2 billion in 2021 and is expected to reach a value of $5.51 billion by 2027, exhibiting a CAGR of 4.63% from 2021 to 2027, as reported by Research and Markets. It is estimated that 35% of the market's growth will originate from North America during the forecasted period.

The United States acne treatment market was valued at $4.27 billion in 2021 and is projected to grow to $6.12 billion by 2029, exhibiting a CAGR of 4.5%, according to Fortune Business Insights. Rheumatoid arthritis is an autoimmune and inflammatory disease, which means that your immune system attacks healthy cells in your body by mistake, causing inflammation in the affected parts of the body. Joints in the hands, wrists and knees are commonly affected by rheumatoid arthritis. An article by Persistence Market Research reports that the global revenue from the rheumatoid arthritis treatment market is valued at $42.9 billion in 2022, with the global market expected to grow at a CAGR of 5.7% to reach a value of approximately $79.1 billion by the end of 2033. The United States market accounts for approximately 39.8% (or approximately $17 billion) of the global market.

According to a report by Grandview Research, the global market size for tendonitis, a condition when a tendon is inflamed, was valued at $199.6 billion in 2021 and is projected to grow at a CAGR of 2.7% from 2022 to 2030. In 2021, North America dominated the global market, accounting for the largest share of 43.4% of the overall revenue, or approximately $86.6 billion.

Alopecia is a disease that develops when the body attacks its own hair follicles (where hair grows from), which can cause hair loss anywhere on the body, although it often causes hair loss on the scalp. The global alopecia market revenue was valued at $8.379 billion in 2021, with more than 36.4% being attributed to North America, according to a report by Acumen Research and Consulting. The global alopecia market is expected to grow at a CAGR of 8.2% from 2022 to 2030, achieving a market size of $16.76 billion by 2030.

Periodontal diseases are mainly the result of infections and inflammation of the gums and bone that surround and support the teeth. In its early stage, called gingivitis, the gums can become swollen and red, and they may bleed. In its more serious form, called periodontitis, the gums can pull away from the tooth, bone can be lost, and the teeth may loosen or even fall out. Transparency Market Research reported that the global periodontal treatment market size was valued at $7.6 billion in 2021 and North America held the major market share in 2021.

The United States respiratory tract infection therapeutic market size was estimated at $9 billion in 2022 and is expected to reach $9.9 billion in 2023, projecting a growth at a CAGR of 8.42% to reach $17 billion by 2030, according to an article by Report Linker. Estimated annual costs for viral upper respiratory infections in the United States, not related to influenza, exceeds $22 billion.

Our Strategy

Our goal is to become the leading provider of topical NO treatments using our proprietary Ionojet device for various therapeutic purposes, including as an anti-infective, anti-inflammatory and tissue-regenerative therapy for chronic wounds and SSTIs.

Key elements of our strategy are as follows:

- *Complete the final prototype of our Ionojet device.* Based upon clinician feedback and the results of our feasibility trial, we were able to identify several desirable changes that we believe will enhance commercial adoption of the Ionojet, and we have been working on the reengineered design of our device in our own facility. We have made what we believe are significant improvements to our Ionojet technology, all of which we are seeking to protect with new U.S. and international patent filings, and which will require FDA approval of an IDE to initiate our pivotal clinical trial.

- *Pivotal trial.* Complete a pivotal clinical trial in diabetic foot ulcers and seek premarket approval of Ionojet from the FDA as a Class III medical device, utilizing a portion of the net proceeds of the initial public offering and securing additional funding. The pivotal trial data, if favorable, will be the primary basis for FDA approval. Conversely, if the data are not favorable, then FDA approval is unlikely.

- *Create a commercial infrastructure for our product candidates.* If the Ionojet is approved as a Class III medical device, we intend to hire and train a focused and dedicated team to launch the marketing of our product to hospitals, wound clinics and private podiatrist offices for the treatment of diabetic foot ulcers. We also intend to use a trained and dedicated team, and/or to enter into marketing partnerships, to launch the marketing of our Ionojet technology for any additional indications that may receive regulatory approval and any of our future product candidates.

- *Expand indications for use.* We believe that our technology has application in many indications in wound healing, as well as in dermatology, infection control, podiatry, dentistry, pain and inflammation and cosmetics. We believe that our technology could also have value in respiratory infections, both viral and bacterial, oral infections, dental indications, ophthalmic and facial applications and in topical indications where the modified stream allows greater comfort to the patient.

- *Strategic Partnerships.* We are exploring the possibility of entering into strategic partnering arrangements to provide further financing for our pivotal clinical trial and for formal clinical studies into other pipeline indications, to supplement the proceeds of the initial public offering.

Competition

While we believe that our proprietary patented high-energy plasma device that generates NO in the form of a plasma/NO stream is the first technology of its kind in the United States market, we believe other companies developing different forms of NO therapies to treat diabetic foot ulcers to be our closest competitors. One such competitor, SaNOtize Research and Development Corp., based in Vancouver, Canada, is recruiting patients for a Phase I/II efficacy study to evaluate its NO releasing footbath as a treatment for diabetic foot ulcer. Edixomed Ltd., a United Kingdom company, is developing a NO generating gel wound dressing to treat diabetic foot ulcers.

Recent Developments

Private Placement

On June 20, 2022, we commenced a private placement (the "Private Placement") of up to $5,000,000 of convertible promissory notes, pursuant to which we issued: (i) convertible promissory notes in the principal aggregate amount of $450,000 on June 30, 2022; (ii) convertible promissory notes in the principal aggregate amount of $60,000 on August 16, 2022; (iii) convertible promissory notes in the principal aggregate amount of $725,000 on September 23, 2022; (iv) convertible promissory notes in the principal aggregate amount of $315,000 on October 25, 2022; (v) convertible promissory notes in the principal aggregate amount of $288,000 on November 30, 2022; and (vi) a convertible promissory note in the principal amount of $101,749.70 on December 21, 2022 (collectively, the "Private Placement Notes"). The promissory note issued in December 2022 was pursuant to a Subscription Agreement that was executed on or before November 30, 2022. In total, the aggregate principal amount of the Private Placement Notes issued in the Private Placement is $1,939,749.70, pursuant to which we received net proceeds of approximately $1,600,000. The Private Placement has terminated. The Private Placement Notes bear interest at 6% per annum and mature three years from the date of issuance. The principal amount due under the Private Placement Notes will be automatically converted into shares of our common stock upon the effectiveness of the registration statement of which this prospectus is a part, with all accrued interest under the Private Placement Notes waived upon conversion pursuant to the terms thereof. The Private Placement Notes are convertible into shares of common stock at a conversion price equal to the quotient obtained by dividing (i) the entire principal amount of the Private Placement Notes plus (if applicable) any accrued but unpaid interest under the Private Placement Notes by (ii) 50% of the initial offering price per share. The holders of the Private Placement Notes are prohibited from converting the Private Placement Notes if such conversion would result in a holder owning in excess of 4.99% of our outstanding common stock. The holders of the Private Placement Notes have agreed not to publicly sell or assign such common stock for a period of 180 days following completion of the initial public offering. The holders of certain of the Private Placement Notes desire to be named as selling stockholders in the Resale Prospectus and, therefore, the terms of their lock-up agreements will be waived by Boustead Securities, LLC immediately prior to the listing of our common stock on a national securities exchange.

Boustead Securities, LLC, the sole book-running manager of the initial public offering, acted as the placement agent for the Private Placement and received a placement fee equal to 7.0% of the gross proceeds received by us from the sale of the Private Placement Notes, a non-accountable expense allowance equal to 1.0% of the

gross proceeds received by us from the sale of the Private Placement Notes and five-year warrants to purchase shares of our common stock at a price equal to the conversion price of the Private Placement Notes in an amount equal to 7.0% of the shares of common stock underlying the Private Placement Notes.

Amendments to Certificate of Incorporation

On March 1, 2023, we filed a certificate of revival (the "Certificate of Revival") to reinstate our amended and restated certificate of incorporation, as amended (the "Amended and Restated Certificate of Incorporation"), and to change the name of our corporation to Origin Life Sciences, Inc.

On March 8, 2023, we filed a certificate of amendment (the "Certificate of Amendment") to our Amended and Restated Certificate of Incorporation for purposes of providing for the conversion of all outstanding shares of Special Voting Common Stock (the terms of which are described under "Description of Securities — Common Stock and Special Voting Common Stock") to Common Stock effective immediately upon filing thereof. Upon filing of the Certificate of Amendment, all 7,819,000 outstanding shares of our Special Voting Common Stock were converted into 7,819,000 shares of our Common Stock.

On March 8, 2023, we filed a certificate of elimination (the "Certificate of Elimination") of the Series A 8% Convertible Preferred Stock (the "Series A Preferred Stock"), at which time the 30,000 shares that had been designated as Series A Preferred Stock were returned to the status of authorized but unissued shares of our preferred stock.

Summary of Risks Associated with Our Business

Our business is subject to numerous risks and uncertainties, including those highlighted in the section entitled "Risk Factors" immediately following this prospectus summary. These risks include, among others, the following:

Risks Related to Our Financial Position and Need for Capital

- We are a clinical-stage biotechnology company that has generated losses from operations;
- We are a clinical-stage company and to date we have not commercialized our medical technology;
- We have a history of operating losses;
- We have a relatively limited operating history and may not be able to execute on our business strategy;
- Our independent registered public accounting firm has expressed substantial doubt about our ability to continue as a going concern;
- We believe that the proceeds of the initial public offering, combined with our very limited funds currently on hand, will only be sufficient for us to operate for a relatively limited amount of time;
- We expect to derive all our revenues from our principal technology;

Risks Related to Product Development, Regulatory Approval, Manufacturing and Commercialization

- The regulatory approval process is expensive, time-consuming and uncertain;
- We may be unable to complete our clinical trials, and the data generated may not support FDA approval;
- We may fail to obtain and maintain necessary marketing authorizations from regulatory authorities;
- New or reformed legislation and regulations may make it difficult to obtain marketing authorization;
- After approval of Ionojet, Ionojet will remain subject to ongoing regulatory obligations and review;
- The device used in our clinical trials is not the same device that we plan to use in our pivotal trial;
- Modifications to our products may require new marketing authorizations;
- Environmental and health safety laws may result in liabilities, expenses and restrictions on our operations;
- Delays or failures in our clinical trials or investigations may prevent us from commercializing products;
- Our facilities are subject to regulation under the FDCA and FDA implementing regulations;

- We and our manufacturers are subject to extensive post-market regulation;
- Disruptions at the regulatory agencies could negatively impact our business;
- If we are found to have improperly promoted off-label uses, we may become subject to significant liability;
- Our business is subject to U.S. and foreign laws and regulations regarding privacy and data protection;
- If the third-parties or consultants do not successfully carry out their contractual duties, we may be unable to obtain regulatory approval for our product candidates;
- Data obtained from clinical trials are susceptible to varying interpretations or may be unfavorable;
- If the third-parties we rely upon fail to comply with stringent regulations, we may face delays;
- We may be required to redesign the device, and we may have insufficient resources to do so;
- Our Ionojet platform may contain undetected errors;
- We face intense competition, and we may not be able to compete in our industry;
- The continuing development of our products depends upon strong working relationships with physicians;

- It may be difficult for us to establish market acceptance of our therapy;
- If we fail to respond quickly to technological developments, our therapy may become uncompetitive;
- Developing medical technology entails significant technical, regulatory and business risks;
- Complaints or negative reviews about us or our technology could harm our reputation and brand;
- Healthcare regulatory reform may affect our ability to sell our products profitably;
- Product liability suits could be brought against us;
- Delays in the enrollment of patients in our clinical trials could increase costs and cause delays;
- If serious adverse effects are identified with respect to any of our product candidates or any of our approved products, we may need to modify or abandon our development of that product candidate;
- If we violate healthcare fraud and abuse laws we may be subject to penalties;
- Our ability to generate revenue will be diminished if we are unable to obtain adequate prices for the therapy;
- The size and expected growth of our available market has not been established with precision;

Risks Related to Our Intellectual Property

- Our failure to maintain intellectual property would materially impact our business plan;
- Costly litigation may be necessary to protect our intellectual property rights;
- Involvement in opposition proceedings in foreign countries, may require spending of substantial sums and management resources;
- Confidentiality agreements may not adequately prevent disclosure of trade secrets;

Risks Related to Our Industry

- We intend to utilize third-party providers which could delay or limit our ability to generate revenue;
- Our employees, independent contractors, consultants, commercial partners and vendors may engage in misconduct or other improper activities;
- If we are unsuccessful in establishing a marketing team for Ionojet, our revenue and profits will be limited;
- We may rely on collaborations and license arrangements with third parties to commercialize, market and promote our marketed products which may limit our ability to generate revenue;
- Our reliance on vendors in foreign countries, including China, subjects us to risks and uncertainties;
- International trade disputes could result in tariffs and other protectionist measures;
- The COVID-19 global health crisis may impact our planned operations, including our pivotal clinical trial;
- Our actual or perceived failure to comply with consumer protection laws could harm our business;
- Technological change may adversely affect commercialization of our products;
- Consolidation in the medical device industry could have an adverse effect on our business;

Risks Related to Ownership of Our Common Stock

- An active public trading market for our common stock may not develop or be sustained;
- We cannot be assured that we will be able to maintain our listing on NYSE;
- Our stock price may be extremely volatile;
- Stock prices in recent initial public offerings have been volatile;
- If analysts do not publish favorable reports about us, our stock price could decline;
- After the initial public offering, our officers, directors, and principal stockholders will continue to exercise significant control over our Company;
- Future sales of common stock could depress the market price of our common stock;
- The offering price of the shares and the other terms of the initial public offering have been determined through negotiations between us and the underwriter;
- The offering price of the initial public offering and resale offering could differ;

- The resale by the selling stockholders in our resale offering may cause our stock price to decline;
- New investors will experience dilution;
- Our ability to use our net operating losses and carryforwards may be limited;
- Our second amended and restated charter documents, to be in effect prior to the effectiveness of the initial public offering, will have anti-takeover provisions and provide for Delaware Chancery Court as the exclusive forum;
- Our management has broad discretion in the use of the net proceeds from the initial public offering;

- Certain of our related parties will directly benefit from the proceeds of the initial public offering;
- Claims for indemnification by our directors and officers may reduce our available funds;
- We do not intend to pay dividends in the foreseeable future;
- We will incur significant increased costs as a result of operating as a public company;
- We are an emerging growth company and smaller reporting company and as such we have reduced disclosure requirements, which may make our common stock less attractive to investors;

General Risk Factors

- Our performance will depend on the continued engagement of key members of our management team;
- If we are not able to attract and retain highly-skilled personnel our business could be harmed;
- We may experience difficulties in managing the growth of our organization;
- If product liability lawsuits are brought against us, we may incur substantial liabilities;
- Our business and operations would suffer in the event of computer system failures;
- Any failure to maintain the information security could expose us to litigation or government action;
- Joint ventures or investments in other companies or technologies could harm our business; and
- Declining general economic or business conditions may have a negative impact on our business.

Corporate History and Information

We were incorporated as a Delaware corporation on June 14, 2010 under the name Plasma Jet Technologies, Inc. and on September 18, 2014 we changed our name to Advanced Plasma Therapies, Inc. pursuant to an amended and restated certificate of incorporation. On October 8, 2015, we filed a certificate of amendment changing our name to Origin, Inc. On March 1, 2023, we filed a Certificate of Revival to reinstate our Amended and Restated Certificate of Incorporation and to change the name of our corporation to Origin Life Sciences, Inc. References to Origin Life Sciences, Inc. also include references to our wholly owned subsidiaries: (i) Advanced Plasma Therapies, Inc., incorporated in Delaware; (ii) Origin Life Sciences Limited, incorporated in England and Wales; and (iii) Origin Agribusiness Limited, incorporated in England and Wales.

Our principal executive offices are located at 2 Research Way, Third Floor, Princeton, NJ 08540, and our telephone number is 610-250-6000. Our website address is *www.originww.com*. The information contained on, or that can be accessed through, our website is not incorporated by reference into this prospectus, and you should not consider any information contained on, or that can be accessed through, our website as part of this prospectus or in deciding whether to purchase our common stock.

Implications of Being an Emerging Growth Company and a Smaller Reporting Company

We qualify as an "emerging growth company" as defined in the Jumpstart Our Business Startups Act of 2012 (the "JOBS Act"). For as long as we remain an emerging growth company, we may take advantage of specified reduced reporting requirements and other burdens that are otherwise applicable generally to other public companies. These provisions include, but are not limited to:

- Reduced obligations with respect to financial data, including presenting only two years of audited financial statements and selected financial data, and only two years of related Management's Discussion and Analysis of Financial Condition and Results of Operations disclosure in our initial registration statement;
- an exemption from the auditor attestation requirement in the assessment of our internal control over financial reporting pursuant to the Sarbanes-Oxley Act of 2002, as amended ("SOX");
- reduced disclosure about executive compensation arrangements in our periodic reports, registration statements and proxy statements; and

- exemptions from the requirements to seek non-binding advisory votes on executive compensation or stockholder approval of any golden parachute arrangements.

We may take advantage of some or all of these provisions until we are no longer an emerging growth company. We will remain an emerging growth company until the earliest of (i) the last day the fiscal year following the fifth anniversary of the completion of the initial public offering, (ii) the last day of the first fiscal year in which our annual gross revenues exceed $1.235 billion, (iii) the date on which we have, during the immediately preceding three-year

period, issued more than $1.0 billion in non-convertible debt securities and (iv) the date on which we are deemed to be a large accelerated filer under the rules of the Securities and Exchange Commission (the "SEC"). We may choose to take advantage of some but not all of these reduced burdens. For example, we have taken advantage of the reduced reporting requirements with respect to disclosure regarding our executive compensation arrangements, have presented only two years of audited financial statements and only two years of related "Management's Discussion and Analysis of Financial Condition and Results of Operations" disclosure in this prospectus, and have taken advantage of the exemption from auditor attestation on the effectiveness of our internal control over financial reporting. To the extent that we take advantage of these reduced burdens, the information that we provide stockholders may be different than you might obtain from other public companies in which you hold equity interests.

In addition, the JOBS Act permits emerging growth companies to take advantage of an extended transition period to comply with new or revised accounting standards applicable to public companies. We have elected to use this extended transition period. As a result of this election, our timeline to comply with new or revised accounting standards will in many cases be delayed as compared to other public companies that are not eligible to take advantage of this election or have not made this election. Therefore, our financial statements may not be comparable to those of companies that comply with the public company effective dates for these accounting standards.

We are also a "smaller reporting company" as defined in the Securities Exchange Act of 1934, as amended (the "Exchange Act"), and have elected to take advantage of certain of the scaled disclosures available to smaller reporting companies. To the extent that we continue to qualify as a "smaller reporting company" as such term is defined in Rule 12b-2 under the Exchange Act, after we cease to qualify as an emerging growth company, certain of the exemptions available to us as an "emerging growth company" may continue to be available to us as a "smaller reporting company," including exemption from compliance with the auditor attestation requirements pursuant to SOX and reduced disclosure about our executive compensation arrangements. We will continue to be a "smaller reporting company" until we have $250 million or more in public float (based on our common stock) measured as of the last business day of our most recently completed second fiscal quarter or, in the event we have no public float (based on our common stock) or a public float (based on our common stock) that is less than $700 million, annual revenues of $100 million or more during the most recently completed fiscal year.

THE RESALE OFFERING

Common Stock we are offering	775,900 shares of common stock
Shares of Common Stock outstanding before this offering	35,348,025 shares
Shares of Common Stock outstanding after this offering	38,875,509 shares of common stock (1)
Use of proceeds	We will not receive any proceeds from the sale of common stock held by the selling stockholder being registered in this prospectus.
Proposed NYSE American Symbol	We intend to apply to list our common stock for trading on NYSE American under the symbol "OLSI." The initial public offering, and therefore this resale offering, will not be consummated until we have received NYSE American's approval of our application for the listing of our common stock. No assurance can be given that our application will be approved.
Risk factors	An investment in our securities involves a high degree of risk. See "Risk Factors" beginning on page 15 of the primary offering prospectus contained in this Registration Statement and other information included in this prospectus and the Registration Statement for a discussion of factors you should carefully consider before deciding to invest in our common stock.

(1) Assumes the issuance and sale by us of 3,000,000 shares of our common stock, pursuant to the Public Offering Prospectus filed contemporaneously herewith and assumes the 450,000 over-allotment options available for sale to the underwriters in the Public Offering Prospectus have not been exercised. In addition, assumes the issuance of (a) 775,900 shares of common stock upon conversion of outstanding convertible promissory notes, which will be convertible and issued upon effectiveness of the initial public offering; (b) 145,120 shares of common stock in repayment of an aggregate of $725,600 of outstanding loans pursuant to agreements with the holders of such loans upon consummation of the initial public offering; (c) 318,364 shares of common stock in consideration for accrued consulting fees and commissions in the aggregate amount of $1,591,820 upon consummation of the initial public offering; and (d) 64,000 shares of common stock in consideration for $320,000 of outstanding accounts payable upon consummation of the initial public offering.

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USE OF PROCEEDS

We will not receive any of the proceeds from the sale of the common stock held by the selling stockholders named in this prospectus.

SELLING STOCKHOLDERS

The following table sets forth certain information with respect to the selling stockholders' beneficial ownership of shares of common stock as of the date of this prospectus. Although there was no agreement between the Company and the stockholders to register these shares, the Company believes the registration of these shares is beneficial to the Company. Percentage of beneficial ownership before this offering is based on 37,098,025 shares of our voting securities, including common stock and Series B Preferred Stock, which includes 35,348,025 shares of our common stock outstanding as of March 13, 2023, as well as 10,000 shares of Series B Preferred Stock outstanding as of March 13, 2023. We have determined beneficial ownership in accordance with the rules of the SEC. Beneficial ownership is based on information furnished by the selling stockholder. Unless otherwise indicated, the selling stockholder named in the following table has, to our knowledge, sole voting and investment power with respect to the shares it beneficially owns.

The selling stockholders may offer for sale from time to time any or all of the shares. No registered broker-dealers or associates of such broker-dealers are participating in this resale offering. The selling stockholders in this resale offering are [ ] (the "Selling Stockholders"). Each of the Selling Stockholders have not had any material relationship with the registrant or any of its predecessors or affiliates, within the past three years, except as hereinafter described. Each of [ ] participated in the Private Placement.

The table below assumes that the Selling Stockholders will sell all of the shares offered for sale hereby. The Selling Stockholders, however, are under no obligation to sell any shares pursuant to this prospectus.

Names and addresses	Number of shares of common stock beneficially owned before the Offering(#)	Number of shares being registered in the Offering	Number of shares of common stock beneficially owned after Offering	Percentage of class of common stock beneficially owned after Offering(*)
			—	—%
			—	—
			—	—
			—	—

- Denotes the holder owns less than one percent of the outstanding common stock.

Beneficial ownership is determined in accordance with the rules and regulations of the SEC. In computing the number of shares beneficially owned by a person and the percentage ownership of that person, securities that are currently convertible or exercisable into shares of common stock, or convertible or exercisable into shares of our common stock within 60 days of March 13, 2023 are deemed outstanding. Such shares, however, are not deemed outstanding for the purposes of computing the percentage ownership of any other person. Except as indicated in the footnotes to the following table, each stockholder named in the table has sole voting and investment power with respect to the shares set forth opposite such stockholder's name.

* Gives pro forma effect to the sale of 3,000,000 shares of common stock being sold in our initial public offering ("IPO").

** No registered broker-dealers or associates of such broker-dealers are participating in this resale offering.

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SELLING STOCKHOLDER PLAN OF DISTRIBUTION

Since there is currently no public market established for our common stock, the Selling Stockholders have represented to us that they will not offer or sell shares prior to the closing of the initial public offering and listing of our common stock on the NYSE American LLC ("NYSE American"). After the initial public offering closes, our common stock is listed on NYSE American and there is an established market for these resale shares, the selling stockholders may sell the resale shares from time to time at the market price prevailing on the NYSE American at the time of offer and sale, or at prices related to such prevailing market prices or in negotiated transactions or a combination of such methods of sale directly or through brokers.

The Selling Stockholders may use any one or more of the following methods when disposing of shares or interests therein:

- 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;
- to cover short sales made after the date the registration statement of which this Resale Prospectus is a part is declared effective by the SEC;
- through the writing or settlement of options or other hedging transactions, whether through an option exchange or otherwise;
- broker-dealers may agree with the selling shareholder to sell a specified number of such shares at a stipulated price per share; and
- a combination of any such methods of sale.

The Selling Stockholders may, from time to time, pledge or grant a security interest in some or all of the shares of common stock owned by them 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, under this prospectus, or under an amendment to this prospectus under Rule 424(b)(3) or other applicable provision of the Securities Act amending the list of Selling Stockholders to include the pledgee, transferee or other successors in interest as Selling Stockholder under this prospectus. The Selling Stockholders also may transfer the securities in other circumstances, in which case the transferees, pledgees or other successors in interest will be the selling beneficial owners for purposes of this prospectus.

In connection with the sale of our common stock or interests therein, 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 common stock and deliver these securities to close out their short positions, or loan or pledge the common stock to broker-dealers that in turn may sell these securities. 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 offered by this prospectus, which shares such broker-dealer or other financial institution may resell pursuant to this prospectus (as supplemented or amended to reflect such transaction).

The aggregate proceeds to the Selling Stockholders from the sale of the common stock offered by them will be the purchase price of the 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 common stock to be made directly or through agents. We will not receive any of the proceeds from this offering.

Broker-dealers engaged by the Selling Stockholders may arrange for other broker-dealers to participate in sales. Broker-dealers may receive commissions or discounts from the Selling Stockholders (or, if any broker-dealer acts as agent for the purchase of shares, from the purchaser) in amounts to be negotiated. The Selling Stockholders do not expect these commissions and discounts to exceed what is customary in the types of transactions involved, and in no case will the maximum compensation received by any broker-dealer exceed seven percent (7%).

The Selling Stockholders also may resell all or a portion of the shares in open market transactions in reliance upon Rule 144 under the Securities Act, provided that they meet the criteria and conform to the requirements of that rule.

Any underwriters, agents, or broker-dealers, and any Selling Stockholders who are affiliates of broker-dealers, that participate in the sale of the Common Stock or interests therein may be "underwriters" within the meaning of Section 2(11) of the Securities Act. Any discounts, commissions, concessions or profit they earn on any resale of the shares may be underwriting discounts and commissions under the Securities Act. The Selling Stockholders who are "underwriters" within the meaning of Section 2(11) of the Securities Act will be subject to the prospectus delivery requirements of the Securities Act. We know of no existing arrangements between any of the Selling Stockholders and any other stockholder, broker, dealer, underwriter, or agent relating to the sale or distribution of the shares, nor can we presently estimate the amount, if any, of such compensation. See "Selling Stockholders" for description of any material relationship that a shareholder has with us and the description of such relationship.

To the extent required, shares of our common stock to be sold, the name of the Selling Stockholder, the respective purchase prices and public offering prices, the names of any agents, dealer or underwriter, any applicable commissions or discounts with respect to a particular offer will be set forth in an accompanying prospectus supplement or, if appropriate, a post-effective amendment to the registration statement that includes this prospectus.

In order to comply with the securities laws of some states, if applicable, the shares of common stock may be sold in these jurisdictions only through registered or licensed brokers or dealers. In addition, in some states the shares of common stock may not be sold unless it has been registered or qualified for sale or an exemption from registration or qualification requirements is available and is complied with.

We have advised the Selling Stockholders that the anti-manipulation rules of Regulation M under the Exchange Act may apply to sales of shares in the market and to the activities of the Selling Stockholders and their affiliates. In addition, we will make copies of this prospectus (as it may be supplemented or amended from time to time) available to the Selling Stockholders 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 against certain liabilities, including liabilities arising under the Securities Act.

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LEGAL MATTERS

Certain legal matters in connection with this offering with respect to the United States federal securities law and New York law will be passed upon for us by Blank Rome LLP, New York, New York.

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775,900 Shares of Common Stock

Origin Life Sciences, Inc.

RESALE PROSPECTUS

You should rely only on the information contained in this Resale Prospectus. No dealer, salesperson or other person is authorized to give information that is not contained in this Resale Prospectus. This Resale Prospectus is not an offer to sell nor is it seeking an offer to buy these securities in any jurisdiction where the offer or sale is not permitted. The information contained in this Resale Prospectus is correct only as of the date of this Resale Prospectus, regardless of the time of the delivery of this Resale Prospectus or the sale of these securities.

The date of this Resale Prospectus is , 2023

PART II

INFORMATION NOT REQUIRED IN THE PROSPECTUS

Item 13. *Other Expenses of Issuance and Distribution*

The following table sets forth the expenses to be incurred in connection with the offering described in this Registration Statement, other than underwriting discounts and commissions, all of which will be paid by us. All amounts are estimates except the SEC's registration fee, the Financial Industry Regulatory Authority, Inc.'s filing fee and the NYSE American listing fee.

	Amount to be Paid
SEC Registration Fee	$
FINRA filing fee	
NYSE American listing fee	
Printing and engraving expenses	
Legal fees and expenses	
Accounting fees and expenses	
Transfer agent and registrar fees	
Miscellaneous expenses	
Total	$

Item 14. *Indemnification of Directors and Officers*

As permitted by Section 102 of the Delaware General Corporation Law, we have adopted provisions in our second amended and restated certificate of incorporation and second amended and restated bylaws that limit or eliminate the personal liability of our directors and officers for a breach of certain fiduciary duties as a director or officer, as applicable, except to the extent such an exemption from liability is not permitted under the Delaware General Corporation Law. An officer may not be exculpated for any action brought by or in the right of the corporation. A director may not be exculpated for improper distributions to stockholders. Further, pursuant to Delaware law a director or officer may not be exculpated for:

- any breach of his or her 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; and
- any transaction from which the director or officer derived an improper personal benefit.

These limitations of liability do not affect the availability of equitable remedies such as injunctive relief or rescission. Our second amended and restated certificate of incorporation 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 second amended and restated certificate of incorporation provides 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 certificate are not exclusive.

Our second amended and restated certificate of incorporation provide that we will indemnify each person who was or is a party, or is or was threatened to be made a party, to any threatened, pending or completed action, suit or proceeding (other than an action by or in the right of us) by reason of the fact that he or she is or was a director or officer, or is or was serving at our request as a director, officer, partner, employee or trustee of, or in a similar capacity with, another corporation, partnership, joint venture, trust or other enterprise (all such persons being referred to as an "Indemnitee"), or by reason of any action alleged to have been taken or omitted in such capacity, against all expenses (including attorneys' fees), judgments, fines and amounts paid in settlement actually and reasonably incurred in connection with such action, suit or proceeding and any appeal therefrom, if such Indemnitee acted in good faith and in a manner he or she reasonably believed to be in, or not opposed to, our best interests, and, with respect to any criminal action or proceeding, he or she had no reasonable cause to believe his or her conduct was unlawful. Our second amended and restated certificate of incorporation provides that we will indemnify any Indemnitee who was or is a party to an action or suit by or in the right of us to procure a judgment in our favor by reason of the fact that the Indemnitee is or was a director or officer, or is or was serving at our request as a director, officer, partner, employee or trustee of, or in a similar capacity with, another corporation, partnership, joint venture, trust or other enterprise, or by reason of any action alleged to have been taken or omitted in such capacity, against all expenses (including attorneys' fees) and, to the extent permitted by law, amounts paid in settlement actually and reasonably incurred in connection with such action, suit or proceeding, and any appeal therefrom, if the Indemnitee acted in good faith and in a manner he or she reasonably believed to be in, or not opposed to, our best interests, except that no indemnification shall be made with respect to any claim, issue or matter as to which such person shall have been adjudged to be liable to us, unless a court determines that, despite such adjudication but in view of all of the circumstances, he or she is entitled to indemnification of such expenses. Notwithstanding the foregoing, to the extent that any Indemnitee has been successful, on the merits or otherwise, he or she will be indemnified by us against all expenses (including attorneys' fees) actually and reasonably incurred in connection therewith. Expenses must be advanced to an Indemnitee under certain circumstances.

The above discussion of our second amended and restated certificate of incorporation, second amended and restated bylaws and Delaware law is not intended to be exhaustive and is respectively qualified in its entirety by such second amended and restated certificate of incorporation, second amended and restated bylaws and applicable Delaware law.

As permitted by the Delaware General Corporation Law, the registrant intends to enter into separate indemnification agreements with each of the registrant's directors and certain of the registrant's officers which require the registrant, among other things, to indemnify them against certain liabilities which may arise by reason of their status as directors, officers or certain other employees.

The registrant expects to obtain and maintain insurance policies under which its directors and officers are insured, within the limits and subject to the limitations of those policies, against certain expenses in connection with the defense of, and certain liabilities which might be imposed as a result of, actions, suits or proceedings to which they are parties by reason of being or having been directors or officers. The coverage provided by these policies may apply whether or not the registrant would have the power to indemnify such person against such liability under the provisions of the Delaware General Corporation Law.

These indemnification provisions and the indemnification agreements that we intend to enter into with the registrant's officers and directors may be sufficiently broad to permit indemnification of the registrant's officers and directors for liabilities (including reimbursement of expenses incurred) arising under the Securities Act of 1933, as amended.

The proposed form of underwriting agreement between the registrant and the Representative to be filed as Exhibit 1.1 to this registration statement provides for the indemnification by the underwriters of the registrant's directors and officers and certain controlling persons against specified liabilities, including liabilities under the Securities Act with respect to information provided by the underwriters specifically for inclusion in the registration statement.

Item 15. ***Recent Sales of Unregistered Securities***

The Company has not issued unregistered securities to any person within the last three years, except as described below. None of these transactions involved any underwriters, underwriting discounts or commissions, except as specified below, or any public offering, and, unless otherwise indicated below, the Company believes that each transaction was exempt from the registration requirements of the Securities Act by virtue of Section 4(a)(2) thereof and/or Rule 506 of Regulation D promulgated thereunder, and/or Regulation S promulgated thereunder regarding offshore offers and sales. All recipients had adequate access, though their relationships with the Company, to information about the Company.

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Issuance of Stock, Options and Warrants

Between January 1, 2019 and December 31, 2019, the Company issued the aggregate of 252,175 shares of common stock to investors, pursuant to a private placement of the Company's common stock at the price of $8.00 per share, for gross proceeds of $2,017,400.

On January 9, 2020, the Company issued 10,000 shares of Series B 20% Preferred Stock and granted warrants to purchase 245,000 shares of common stock to an investor, pursuant to a securities purchase agreement. The warrant is exercisable for a period of five years from the date of issuance. If the Company succeeds in raising at least $15,000,000 in equity financing, within 12 months of the issue date, the exercise price of the warrant will be 75% of the price realized in said equity financing. If the Company does not raise at least $15,000,000 in an equity financing by January 9, 2021, the exercise price shall be $4.00 per share.

On February 1, 2020, the Company granted stock options to purchase 35,000 shares of common stock at an exercise price of $8.00 per common share to an advisor for services provided. The options are exercisable for a period of seven years from the date of issuance, 8,750 of which vested immediately upon grant, and the remaining 36,250 shares vest ratably at six-month intervals over a period of three years.

On May 6, 2020, the Company granted stock options to purchase 13,125 shares of common stock at an exercise price of $8.00 per common share to an advisor for services provided. The options are exercisable for a period of seven years from the date of issuance, all of which vested immediately upon grant.

On July 6, 2020, the Company granted warrants to purchase 91,875 shares of common stock to an investor, pursuant to a securities purchase agreement. The warrant is exercisable for a period of five years from the date of issuance. If the Company succeeds in raising at least $15,000,000 in equity financing, within 12 months of the issue date, the exercise price of the warrant will be 75% of the price realized in said equity financing. If the Company does not raise at least $15,000,000 in an equity financing by July 6, 2021, the exercise price shall be $4.00 per share.

On November 20, 2020, the Company granted a warrant to purchase 6,300 shares of common stock at an exercise price of $0.000057 to an advisor for services provided. The warrant was exercisable for a period of one year from the date of issuance.

On December 1, 2020, the Company granted stock options to purchase 43,750 shares of common stock at an exercise price of $8.00 per common share to an employee. The options are exercisable for a period of ten years from the date of issuance, with the following vesting schedule: 11,375 shares vested immediately upon grant, 11,375 shares vested on the first anniversary of the grant date, 10,500 shares will vest on the second anniversary of the grant date, and the remaining 10,500 shares will vest on the third anniversary of the grant date.

During the fiscal year ended December 31, 2020, the Company issued the aggregate of 133,525 shares of common stock to investors, including one director, pursuant to a private placement of the Company's common stock at the price of $8.00 per share, for gross proceeds of $1,068,200.

During the fiscal year ended December 31, 2020 the Company issued an aggregate of 45,500 shares of common stock to two directors for services rendered in the aggregate amount of $364,000.

On January 29, 2021, the Company granted stock options to purchase 227,500 shares of common stock at an exercise price of $8.00 per common share to an employee. The options are exercisable for a period of ten years from the date of issuance, all of which vested immediately upon grant.

On January 29, 2021, the Company granted stock options to purchase 78,750 shares of common stock at an exercise price of $8.00 per common share to our Chief Financial Officer. The options are exercisable for a period of ten years from the date of issuance, all of which vested immediately upon grant.

On September 13, 2021, the Company granted stock options to purchase 175,000 shares of common stock at an exercise price of $8.00 per common share to a non-employee director. The options are exercisable for a period of ten years from the date of issuance, all of which vested immediately upon grant.

During the fiscal year ended December 31, 2021, the Company issued the aggregate of 71,050 shares of common stock to investors, pursuant to a private placement of the Company's common stock at the price of $8.00 per share, for gross proceeds of $568,400.

On January 26, 2022, the Company granted a warrant to purchase 350,000 shares of common stock at an exercise price of $0.000057 for a period of five years to an advisor for services provided. The warrants were exercised on October 14, 2022, at which time the advisor paid us the sum of $40 in exchange for the issuance of 700,000 shares of our common stock.

On August 31, 2022, we issued a warrant to purchase 350,000 shares of common stock at an exercise price of $0.000057 to an advisor for services provided. The warrants expire on the fifth (5^{th}) anniversary of the date of issuance.

On January 26, 2022, the Company issued 25,025 shares of common stock to an investor, pursuant to a private placement of the Company's common stock at the price of $8.00 per share, for gross proceeds of $200,200.

On June 30, 2022, August 16, 2022, September 23, 2022, October 25, 2022, November 30, 2022 and December 21, 2022, the Company issued to Boustead Securities, LLC, as placement agent for the Private Placement, warrants to purchase up to a number of shares of our common stock equal to 7% of the shares of the Company's common stock into which the Private Placement Notes in the aggregate principal amount of $1,939,749.70 convert. The warrants expire on the fifth (5^{th}) anniversary of the date of issuance.

On September 30, 2022, the Company issued 52,500 shares of common stock to an investor pursuant to the exercise of stock options at an exercise price of $1.03 per share.

During the fourth quarter of 2022, the Company issued 8,750 shares of common stock to Dr. Terry Treadwell, who will be our Chief Clinical Officer upon consummation of the initial public offering, in exchange for services rendered valued at $50,000.

During the fiscal year ended 2022, the Company issued 4,375 shares of common stock to a consultant for services in the amount of $25,000.

On October 28, 2022, the Company issued a warrant to purchase 3,500 shares of our common stock at an exercise price of $0.000057 per share to an advisor for services rendered. The warrant expires on the second anniversary of the date of issuance.

On November 18, 2022, the Company issued a warrant to purchase 13,125 shares of our common stock at an exercise price of $0.000057 per share to an advisor for services rendered. The warrant expires on the seventh anniversary of the date of issuance.

On November 18, 2022, the Company issued a warrant to purchase 8,750 shares of our common stock at an exercise price of $5.14 per share to an advisor for services rendered. The warrant expires on the seventh anniversary of the date of issuance.

On November 18, 2022, the Company issued a warrant to purchase 13,125 shares of our common stock at an exercise price of $8.00 per share to an advisor for services rendered. The warrant expires on the seventh anniversary of the date of issuance.

On January 25, 2023, the Company issued 17,500 shares of common stock to a shareholder in repayment of a loan made to the Company during the fiscal year 2022 in the amount of $100,000.

Convertible Promissory Notes

We issued the LFEIF Note, dated as of July 6, 2020, in the principal amount of $250,000, which bears interest at the fixed simple rate of 20% per annum. The LFEIF Note is convertible, at the direction of LFEIF, into shares of our Series B Preferred Stock, such number of shares to be calculated by dividing the principal amount of the LFEIF Note, plus accrued interest, by $100, rounded to the nearest whole shares. If the LFEIF Note has not been converted to Series B Preferred Stock prior to the effective date of this offering, the principal amount plus accrued interest due under the LFEIF Note shall be due and payable thirty (30) days after the closing of this offering.

On June 20, 2022, we commenced the Private Placement of up to $5,000,000 of convertible promissory notes, pursuant to which we issued: (i) convertible promissory notes in the principal aggregate amount of $450,000 on June 30, 2022; (ii) convertible promissory notes in the principal aggregate amount of $60,000 on August 16,

2022; (iii) convertible promissory notes in the principal aggregate amount of $725,000 on September 23, 2022; (iv) convertible promissory notes in the principal aggregate amount of $315,000 on October 25, 2022; (v) convertible promissory notes in the principal aggregate amount of $288,000 on November 30, 2022; and (vi) a convertible promissory note in the

principal amount of $101,749.70 on December 21, 2022 (the Private Placement Notes). The promissory note issued in December 2022 was pursuant to a Subscription Agreement that was executed on or before November 30, 2022. In total the aggregate principal amount of the Private Placement Notes issued in the Private Placement is $1,939,749.70, pursuant to which we received net proceeds of approximately $1,600,000. The Private Placement has terminated. The Private Placement Notes bear interest at 6% per annum and mature three years from the date of issuance. The principal amount due under the Private Placement Notes will be automatically converted into shares of our common stock upon the effectiveness of the registration statement of which this prospectus is a part, with all accrued interest under the Private Placement Notes waived upon conversion pursuant to the terms thereof. The Private Placement Notes are convertible into shares of common stock at a conversion price equal to the quotient obtained by dividing (i) the entire principal amount of the Private Placement Notes plus (if applicable) any accrued but unpaid interest under the Private Placement Notes by (ii) 50% of the initial offering price per share. The holders of the Private Placement Notes are prohibited from converting the Private Placement Notes if such conversion would result in a holder owning in excess of 4.99% of our outstanding common stock. The holders of the Private Placement Notes have agreed not to publicly sell or assign such common stock for a period of 180 days following completion of this offering. The holders of certain of the Private Placement Notes desire to be named as selling stockholders in the Resale Prospectus and, therefore, the terms of their lock-up agreements will be waived by Boustead Securities, LLC immediately prior to the listing of our common stock on a national securities exchange.

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

(a) Exhibits.

The exhibit index attached hereto is incorporated herein by reference.

(b) Financial Statement Schedules.

(a) Exhibits. See the Exhibit Index immediately preceding the signature pages hereto, which is incorporated by reference as if fully set forth herein.

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 a 20% change in the maximum aggregate offering price set forth in the "Calculation of Registration Fee" table in the effective registration statement; and

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

(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 (§230.430A of this chapter), 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:

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

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

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

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

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

(6) 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 Securities Act of 1933 and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the registrant of expenses incurred or paid by a director, officer or controlling person of the registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Securities Act of 1933 and will be governed by the final adjudication of such issue.

(7) The undersigned registrant hereby undertakes to provide to the underwriter at the closing specified in the underwriting agreements certificates in such denominations and registered in such names as required by the underwriter to permit prompt delivery to each purchaser.

(8) The undersigned Registrant hereby undertakes that:

(i) For purposes of determining any liability under the Securities Act, the information omitted from the form of prospectus filed as part of this registration statement in reliance upon Rule 430A and contained in a form of prospectus filed by the registrant pursuant to Rule 424(b)(1) or (4) or 497(h) under the Securities Act shall be deemed to be part of this registration statement as of the time it was declared effective.

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

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EXHIBIT INDEX

Exhibit No.	Description of Exhibit
1.1+	Form of Underwriting Agreement by and between Origin, Inc. and Boustead Securities, LLC, as representative of the underwriters
3.1*	Amended and Restated Certificate of Incorporation filed with the Secretary of State of Delaware on September 18, 2014
3.2*	Amended and Restated Bylaws
3.3*	Certificate of Amendment to Amended and Restated Certificate of Incorporation filed with the Secretary of the State of Delaware on October 22, 2015
3.4*	Certificate of Amendment to Amended and Restated Certificate of Incorporation filed with the Secretary of the State of Delaware on July 1, 2016
3.5*	Certificate of Designations, Preferences and Rights of the Series A 8% Convertible Preferred Stock
3.6*	Certificate of Designations, Preferences and Rights of the Series B 20% Preferred Stock
3.7+	Form of Second Amended and Restated Certificate of Incorporation
3.8+	Form of Second Amended and Restated Bylaws
3.9*	Certificate of Revival
3.10*	Certificate of Amendment to Amended and Restated Certificate of Incorporation filed with the Secretary of the State of Delaware on March 8, 2023
3.11*	Certificate of Elimination of Series A 8% Convertible Preferred Stock
4.1+	Specimen Common Stock Certificate
4.2+	Form of Representative's Warrant
4.3*†	Private Placement Convertible Note with schedule of notes
4.4*†	Placement Agent Warrant with schedule of warrants
5.1+	Opinion of Blank Rome LLP
10.1*#	Advanced Plasma Therapies, Inc. 2014 Equity Incentive Plan
10.2*#	Employment Agreement with Michael Preston dated May 30, 2013
10.3*#	Amendment No. 1 to Employment Agreement with Michael Preston, dated September 30, 2013
10.4*#	Amendment No. 2 to Employment Agreement with Michael Preston, dated December 20, 2013
10.5*#	Amendment No. 3 to Employment Agreement with Michael Preston, dated November 1, 2015
10.6*#	Amendment No. 4 to Employment Agreement with Michael Preston, dated December 22, 2022
10.7*#	Employment Agreement with John Fernandes, dated November 1, 2014
10.8*#	Employment Agreement with David Dantzker, dated November 1, 2015
10.9+	Exclusion Option Exercising Agreement, Patent Assignment Agreement and Payment Agreement
10.10*	Employment Agreement with Dr. Terry Treadwell, dated as of November 15, 2022
10.11+#	Origin Life Sciences, Inc. 2023 Stock Incentive Plan and form of Incentive Stock Option Grant Agreement, Nonqualified Stock Option Grant Agreement, Restricted Stock Unit Award Agreement
21.1*	List of Subsidiaries of the Registrant
23.1*	Consent of Liebman Goldberg & Hymowitz LLP, Independent Registered Public Accounting Firm
23.2+	Consent of Blank Rome LLP (contained in Exhibit 5.1)
24.1*	Power of Attorney (included on the signature page of this initial Registration Statement)
107*	Calculation of Filing Fee Tables

* Filed herewith

^ Previously filed

\+ To be filed by amendment

\# Indicates a contract, compensatory plan or arrangement to which a director or executive officer is a party or in which one or more directors or executive officers are eligible to participate.

† Pursuant to Instruction 2 to Item 601 of Regulation S-K, each Convertible Note is identical for all noteholders in the schedule of notes except for face or principal amount, issuance date, maturity date and the name of the payee and each Placement Agent Warrant is identical for all warrants in the schedule of warrants except for issuance date, expiration date and the date and principal amount of convertible notes upon which the number of shares underlying the warrant is calculated.

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, as amended, the registrant has duly caused this registration statement on Form S-1 to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of Princeton, State of New Jersey, on the 13th day of March, 2023.

ORIGIN LIFE SCIENCES, INC.

By: /s/ Michael Preston
Name: Michael Preston
Title: Chairman of the Board and Chief Executive Officer (Principal Executive Officer)

POWER OF ATTORNEY

KNOW ALL BY THESE PRESENTS that each individual whose signature appears below constitutes and appoints Michael Preston and John Fernandes our true and lawful attorneys and agents with full power of substitution and resubstitution, with full power to sign for us, and in our names in the capacities indicated below, any and all amendments to this registration statement, any subsequent registration statements pursuant to Rule 462 of the Securities Act of 1933, as amended, and to file the same, with all exhibits thereto and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorney-in-fact and agent, full power and authority to do and perform each and every act and thing requisite and necessary to be done in and about the premises, as fully to all intents and purposes as he might or could do in person, hereby ratifying and confirming all that said attorney-in-fact and agent, or his substitute or substitutes, may lawfully do or cause to be done by virtue hereof. This power of attorney may be executed in counterparts.

Pursuant to the requirements of the Securities Act of 1933, as amended, this registration statement on Form S-1 has been signed by the following persons in the capacities and on the dates indicated.

Signature	Title	Date
/s/ Michael Preston Michael Preston	Chairman of the Board and Chief Executive Officer (Principal Executive Officer)	March 13, 2023
/s/ John Fernandes John Fernandes	Chief Financial Officer (Principal Financial Officer and Principal Accounting Officer)	March 13, 2023
/s/ David Dantzker David Dantzker	Deputy Chairman of the Board and Chief Medical Officer	March 13, 2023
/s/ Howard Nelson Howard Nelson	Director	March 13, 2023
/s/ Anthony Brampton Anthony Brampton	Director	March 13, 2023
/s/ Victor Micati Victor Micati	Director	March 13, 2023

Exhibit 3.1

AMENDED AND RESTATED CERTIFICATE OF INCORPORATION OF ADVANCED PLASMA THERAPIES, INC.

Advanced Plasma Therapies, Inc., a corporation organized and existing under the laws of the State of Delaware (the "**Corporation**"), DOES HEREBY CERTIFY AS FOLLOWS:

1. The name of the Corporation is "Advanced Plasma Therapies, Inc." The Corporation was originally incorporated under the name "Plasma Jet Technologies, Inc." and the original certificate of incorporation was filed with the Secretary of State of the State of Delaware on June 14, 2010 (the "**Original Certificate**").

2. This Amended and Restated Certificate of Incorporation (the "**Amended and Restated Certificate**") was duly adopted by the Board of Directors of the Corporation and the stockholders of the Corporation in accordance with Sections 141(f), 228(a), 242 and 245 of the General Corporation Law of the State of Delaware.

3. This Amended and Restated Certificate restates, integrates and further amends the provisions of the Original Certificate.

4. Capitalized terms used in this Amended and Restated Certificate are defined where appropriate herein.

5. The text of the Original Certificate is hereby restated and amended in its entirety to read as follows:

ARTICLE I
NAME

The name of the corporation is Advanced Plasma Therapies, Inc. (the "**Corporation**")

ARTICLE II
PURPOSE

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

ARTICLE III
REGISTERED AGENT

The address of the registered office of the Corporation in the State of Delaware is Harvard Business Services, Inc., 16192 Coastal Highway, Lewes DE 19958, Sussex County, and the name of the Corporation's registered agent at such address is Harvard Business Services, Inc.

ARTICLE IV
CAPITAL STOCK

4.1 The Corporation shall have the authority to issue a total of Four Million (4,000,000) shares of capital stock, consisting of Two Million (2,000,000) shares of $0.01 par value common stock (the "**Common Stock**"), One Million (1,000,000) shares of $0.01 par value special voting common stock (the "**Special Voting Common Stock**"), and One Million (1,000,000) shares of $0.01 par value preferred stock (the "**Preferred Stock**"). The number of authorized shares of any class or classes of stock may be increased or decreased (but not below the number of shares thereof then outstanding) by the affirmative vote of the holders of a majority of the voting power of the stock of the Corporation entitled to vote irrespective of the provisions of Section 242(b)(2) of the DGCL.

4.2 A statement of the powers, preferences and rights, and qualifications, limitations or restrictions thereof, of the capital stock of the Corporation is as follows:

(a) Common Stock and Special Voting Common Stock

(i) Generally. Except as otherwise expressly provided herein or required by applicable law, shares of Common Stock and Special Voting Common Stock shall have the same rights and privileges and rank equally, share ratably and be identical in all respects as to all matters, including, without limitation:

(A) Dividends. Shares of Common Stock and Special Voting Common Stock shall be treated equally, identically and ratably, on a per share basis, with respect to the declaration and payment or distribution of any dividend paid or distributed by the Corporation; *provided*, *however*, that in the event a dividend is paid in the form of Common Stock or Special Voting Common Stock, then holders of Common Stock shall receive Common Stock, and holders of Special Voting Common Stock shall receive Special Voting Common Stock, with holders of Common Stock and Special Voting Common Stock receiving an identical number of shares of Common Stock or Special Voting Common Stock.

(B) Liquidation. In the event of the voluntary or involuntary liquidation, dissolution, distribution of assets or winding up of the Corporation, shares of Common Stock and Special Voting Common Stock shall be treated equally, identically and ratably, on a per share basis, with respect to the distribution by the Corporation of all the assets of the Corporation of whatever kind available for distribution to stockholders, after the rights of the holders of the Preferred Stock have been satisfied.

(C) No Right of Redemption. Shares of Common Stock and Special Voting Common Stock are not redeemable at the option of the holder or the Corporation.

(D) No Preemptive Rights. Shares of Common Stock and Special Voting Common Stock shall not carry preemptive rights.

(E) Subdivision, Combination or Reclassification. If the Corporation in any manner subdivides, combines or reclassifies the outstanding shares of Common Stock or Special Voting Common Stock, the outstanding shares of the other such class shall be proportionately subdivided, combined or reclassified concurrently therewith in a manner that maintains the same proportionate equity ownership between the holders of the outstanding Common Stock and Special Voting Common Stock on the record date for such subdivision, combination or reclassification.

(F) Equal Treatment in a Merger or Consolidation. In connection with any merger or consolidation, shares of Common Stock and Special Voting Common Stock shall be treated equally, identically and ratably, on a per share basis, with respect to any consideration into which such shares are converted or any consideration paid or otherwise distributed to stockholders of the Corporation.

(ii) Common Stock Voting Rights.

(A) Subject to the provisions of Section 4.2(a)(ii)(B) hereof: (I) each holder of Common Stock shall be entitled to one vote for each share of Common Stock held as of the applicable date on any matter that is submitted to a vote or for the consent of the stockholders of the Corporation, and (II) the holders of Common Stock and the holders of Special Voting Common Stock shall at all times vote on all matters (including the election of directors of the Corporation) together as one class except as otherwise required by the DGCL.

(B) Special Voting Common Stock Voting Rights.

(I) Voting Limitation. Holders of all outstanding shares Special Voting Common Stock shall be entitled to, in the aggregate, a total number of votes for all such outstanding shares of Special Voting Common

Stock held as of the applicable date on any matter that is submitted to a vote or for the consent of the stockholders of the Corporation equal to the lesser of (such lesser amount, the "**Special Voting Power**"): (a) the aggregate number of outstanding shares of Special Voting Common Stock, and (b) 19.5% of the total number of votes attaching to all outstanding equity securities of the Company (including Common Stock, Special Voting Common Stock and any voting Preferred Stock) which have the right to vote or consent on matters submitted to a vote or for the consent of the stockholders of the Corporation (the "**Total Voting Rights**"). All voting rights under the Special Voting Power shall be divided proportionately among the outstanding shares of Special Voting Common Stock (including, if applicable, on a fractional basis). The balance of the Total Voting Rights after taking into account any applicability of the Special Voting Power shall be divided proportionately among the outstanding equity securities (including Common Stock and voting Preferred Stock but excluding Special Voting Common Stock) including, if applicable, on a fractional basis.

(II) Termination of Special Voting Power.

1. The holders of a majority of the then outstanding Special Voting Common Stock, acting as a separate class, may, at any time and upon written notice to the Corporation, elect to irrevocably terminate the Special Voting Power associated with the Special Voting Common Stock, which action shall be binding upon all holders of Special Voting Common Stock. Upon the Corporation's receipt of any such notice, each share of Special Voting Common Stock issued and outstanding or held by the Corporation in treasury shall automatically and without any further action required by the Corporation or the holders of the Special Voting Common Stock, convert into and be thereafter treated as one outstanding, fully paid and nonassessable share (or treasury share, as the case may be) of Common Stock. From and after such time, any certificate previously representing shares of Special Voting Common Stock shall represent an equal number of shares of Common Stock into which such shares of Special Voting Common Stock were converted.

2. The Special Voting Power shall further be subject to automatic termination without any further action required by the Corporation or the holders of the Special Voting Common Stock upon the consummation of any IPO (as defined below) if, following such IPO, the holders of Special Voting Common Stock would hold less than 19.50% of the aggregate total number of outstanding shares of Common Stock, Special Voting Common Stock or any other equity securities of the Company (including Preferred Stock) which have the right to vote or consent on matters submitted to a vote or for the consent of the stockholders of the Corporation. Upon the consummation of any such IPO, each share of Special Voting Common Stock issued and outstanding or held by the Corporation in treasury shall automatically and without any further action required by the Corporation or the holders of the Special Voting Common Stock, convert into and be thereafter treated as one outstanding, fully paid and nonassessable share (or treasury share, as the case may be) of Common Stock. From and after such time, any certificate previously representing shares of Special Voting Common Stock shall represent an equal number of shares of Common Stock into which such shares of Special Voting Common Stock were converted. As used herein, the term "**IPO**" means the consummation of any of the following: (i) an initial placing of the Corporation's (or its controlling affiliate's) common equity on the Main Market of the London Stock Exchange or the Alternative Investment Market of the London Stock Exchange; (ii) a registered initial public offering of the Common Stock on the New York Stock Exchange, NYSE MKT or any level of the NASDAQ Stock Market or any successor principal securities market in the United States; (iii) a merger of the Corporation with or into another entity (or a subsidiary thereof) with its common equity (A) registered under Section 12 of the Securities Exchange Act of 1934, as amended and (B) eligible for trading on the Over The Counter Bulletin Board or OTCQB Market; or (iv) the effectiveness of a registration by the Corporation under the Securities Act of 1933, as amended, of its Common

Stock for resale by selling stockholders of the Corporation, following which the Common Stock is (A) registered under Section 12 of the Securities Exchange Act of 1934, as amended and (B) eligible for trading on the Over The Counter Bulletin Board or OTCQB Market.

3. The Corporation shall at all times reserve and keep available out of its authorized but unissued shares of Common Stock, solely for the purpose of effecting the conversion of the shares of Special Voting Common Stock, such number of its shares of Common Stock as shall from time to time be sufficient to effect the conversion of all outstanding shares of Special Voting Common Stock.

4. If any shares of Special Voting Common Stock shall be converted pursuant to this Section 4.2(a)(ii)(B)(II), such shares shall automatically be retired and returned to the authorized but unissued shares of Special Voting Common Stock.

(b) Preferred Stock. The Preferred Stock may be issued from time to time in one or more series. The Board of Directors of the Corporation (the "**Board**") is expressly authorized, by resolution adopted and filed in accordance with law, to provide, out of the unissued shares of Preferred Stock, for series of Preferred Stock and, with respect to such series, to fix the number of shares in each series, the designation thereof, the powers (including voting powers, full or limited, if any), the preferences and relative, participating, optional or other special rights thereof, and the qualifications, limitations or restrictions thereon, of each series and the variations in such voting powers (if any) and preferences and rights as between series. The powers, preferences and relative, participating, optional and other special rights of each series of Preferred Stock, and the qualifications, limitations or restrictions thereof, if any, may differ from those of any and all other series at any time outstanding.

ARTICLE V
BOARD OF DIRECTORS

The number of directors of the Corporation from time to time shall be as fixed by, or in the manner provided in, the bylaws of the Corporation (as amended and/or restated from time to time, the "**Bylaws**").

ARTICLE VI
BYLAWS

In furtherance and not in limitation of the powers conferred upon it by law, the Board shall have the power to adopt, amend, alter or repeal the Bylaws. The affirmative vote of a majority of the Board shall be required to adopt, amend, alter or repeal the Bylaws. The Bylaws also may be adopted, amended, altered or repealed by the stockholders; *provided, however*, that in addition to any vote of the holders of any class or series of capital stock of the Corporation required by law or by this Amended and Restated Certificate, the affirmative vote of the holders of at least a majority of the voting power of all then outstanding shares of capital stock of the Corporation entitled to vote generally in the election of directors, voting together as a single class, shall be required for the stockholders to adopt, amend, alter or repeal the Bylaws.

ARTICLE VII
MEETINGS OF STOCKHOLDERS

Meetings of stockholders may be held within or without the State of Delaware, as determined by the Board. The books of the Corporation may be kept (subject to any provision contained in the DGCL) outside the State of Delaware at such place or places as may be designated from time to time by the Board or in the Bylaws.

ARTICLE VIII
LIMITED LIABILITY

No director of the Corporation shall be personally liable to the Corporation or its stockholders for monetary damages for breach of fiduciary duty as a director; *provided, however*, that the foregoing shall not eliminate or limit the liability of a director: (a) for any breach of the director's duty of loyalty to the Corporation or its stockholders; (b) for acts or omission not in good faith or which involve intentional misconduct or a knowing violation of the law; (c) under Section 174 of the DGCL; or (d) for any transaction from which the director derived an improper personal benefit. If the DGCL shall be amended to permit further elimination or limitation of the personal liability of directors, then the liability of a director of the Corporation shall be eliminated or limited to the fullest extent permitted by the DGCL as so amended. Any repeal or modification of this Article VIII shall not adversely affect any right or protection of a director of the Corporation existing at the time of, or increase the liability of any director of the Corporation with respect to any acts or omission occurring prior to, such repeal or modification.

ARTICLE IX
DURATION

The Corporation shall have perpetual existence.

ARTICLE X
INDEMNIFICATION

10.1 The Corporation shall indemnify, to the fullest extent permitted by applicable law as it presently exists or may hereafter by amended, a person who was or is made or is threatened to be made a party or is otherwise involved in any action, suit or proceeding, whether civil, criminal ,administrative or investigative, by reason of the fact that such person is or was a director or executive officer of the Corporation (for the purposes of this Article X, "executive officers" shall have the meaning defined in Rule 3b-7 promulgated under the Securities Exchange Act of 1934, as amended) or, while serving as a director or executive officer of the Corporation, is or was serving at the request of the Corporation as a director, officer, employee or agent of another corporation or of a partnership, joint venture, trust, enterprise or nonprofit entity, including service with respect to employee benefit plans, against all liability and loss suffered and expenses (including attorneys' fees) reasonably incurred by such person; *provided, however*, that the Corporation shall not be required to indemnify any director or executive officer in connection with any proceeding (or part thereof) initiated by such person unless (a) such indemnification is expressly required to be made by law, (b) the proceeding was authorized by the Board, (c) such indemnification is provided by the Corporation, in its sole discretion, pursuant to the powers vested in the Corporation under the DGCL or any other applicable law or (d) such indemnification is required to be made under this Article X.

10.2 The Corporation shall have power to indemnify its other officers, employees and other agents as set forth in the DGCL or any other applicable law.

10.3 The Corporation may advance to any person who was or is a party or is threatened to be made a party to any threatened, pending or completed action, suit or proceeding, whether civil, criminal, administrative or investigative, by reason of the fact that he is or was a director or executive officer of the Corporation, or, while serving as a director or executive officer of the Corporation, is or was serving at the request of the Corporation as a director, officer, employee or agent of another corporation or of a partnership, joint venture, trust, enterprise or nonprofit entity, including service with respect to employee benefit plans, prior to the final disposition of the proceeding, promptly following request therefor, all expenses incurred by any director or executive officer in connection with such proceeding upon receipt of an undertaking by or on behalf of such person to repay said amounts if it should be determined ultimately that such person is not entitled to be indemnified under this Article X or otherwise. Notwithstanding the foregoing, unless otherwise determined pursuant to this Article X, no advance shall be made by the Corporation to an executive officer of the Corporation (except by reason of the fact that such executive officer is or was a director or executive officer of the Corporation in which event this paragraph shall not apply) in any action, suit or proceeding, whether civil, criminal, administrative or investigative, if a determination is reasonably and promptly made (a) by the Board by a majority vote of directors who were not parties to the proceeding, even though less than a quorum or (b) if there are no such directors, or if such disinterested directors so direct, by independent legal counsel in a written opinion, that the facts known to the decision-making party at the time such determination is made demonstrate clearly and convincingly that such person acted in bad faith or in a manner that such person did not believe to be in or not opposed to the best interests of the Corporation.

10.4 Any amendment, repeal or modification of this Article X shall not adversely affect any right or protection hereunder of any person in respect of any act or omission occurring prior to the time of such repeal or modification.

ARTICLE XI
RESERVATION OF RIGHTS

The Corporation reserves the right at any time or from time to time to amend, alter, change or repeal any provision contained in this Amended and Restated Certificate, in the manner now or hereafter prescribed by the DGCL, and all rights, preferences and privileges of any nature conferred upon stockholders, directors or any other person herein are granted subject to this reservation above, provided that the rights of the Special Voting Common Stock may not be amended, altered, changed or repealed without the approval of the holders of a majority of the outstanding shares of the Special Voting Common Stock.

IN WITNESS WHEREOF, Advanced Plasma Therapies, Inc. has caused this Amended and Restated Certificate to be duly executed in its name and on its behalf by its Executive Chairman and Chief Financial Officer this 18th day of September, 2014.

ADVANCED PLASMA THERAPIES, INC.

By: /s/ Michael Preston
Name: Michael Preston
Title: Executive Chairman and Acting CFO

Exhibit 3.2

ADVANCED PLASMA THERAPIES, INC.

AMENDED AND RESTATED BYLAWS

Effective: September 18, 2014

ARTICLE 1

OFFICES

Section 1.1 Registered Office. Advanced Plasma Therapies, Inc., a Delaware corporation (the "**Corporation**"), shall have and maintain in the State of Delaware a registered office, which may, but need not be, the same as its place of business.

Section 1.2 Additional Offices. The Corporation may also have offices at such other places, both within and without the State of Delaware, as the Board of Directors of the Corporation (the "**Board**") may from time to time determine.

ARTICLE 2

MEETINGS OF STOCKHOLDERS

Section 2.1 Time and Place. A meeting of the stockholders of the Corporation who have the right to vote at any meeting of such stockholders for any purpose (the "**Stockholders**") shall be held at such time and place, within or without the State of Delaware, as the Board may fix from time to time and as shall be stated in the notice of the meeting or in a duly executed waiver of notice thereof.

Section 2.2 Annual Meetings. The annual meeting of Stockholders shall be held at such date and time, either within or without the State of Delaware, as shall be designated by the Board by resolution and stated in the notice of the meeting. At such annual meeting, the Stockholders shall elect a Board and transact such other business as may be properly brought before the meeting.

Section 2.3 Notice of Annual Meetings. Written notice of the annual meeting, stating the place, if any, date and time thereof, the means of remote communication, if any, by which each Stockholder and proxyholder may be deemed to be present and vote at such meeting, shall be given to each Stockholder entitled to vote at such meeting not less than ten (10) days (unless a longer period is required by law) nor more than sixty (60) days prior to the meeting.

Section 2.4 Special Meetings. Special meetings of the Stockholders, for any purpose or purposes, unless otherwise prescribed by law or by the Certificate of Incorporation of the Corporation (as the same may be amended or restated from time to time, the "**Charter**"), may be called by the Chairman of the Board, if any, or the President and shall be called by the President or the Secretary at the request in writing of a majority of the members of the Board, or at the request in writing of Stockholders entitled to cast at least a majority of the votes that all Stockholders are entitled to cast at the particular meeting. Such request by the members of the Board or the Stockholders shall state the purpose or purposes of the proposed meeting.

Section 2.5 Notice of Special Meetings. Written notice of a special meeting, stating the place, if any, date and time thereof, the means of remote communication, if any, by which each Stockholder and proxyholder may be deemed to be present in person and vote at such meeting and the purpose or purposes for which the meeting is called, shall be given to each Stockholder entitled to vote at such meeting not less than ten (10) days (unless a longer period is required by law) nor more than sixty (60) days prior to the meeting.

Section 2.6 Quorum; Adjournments. The holders of a majority of the voting power of the shares of capital stock of the Corporation issued and outstanding and entitled to vote, present in person or represented by proxy, shall constitute a quorum for the transaction of business at all meetings of the Stockholders, except as otherwise provided by law or by the Charter. If, however, a quorum shall not be present or represented at any meeting of the Stockholders, the Stockholders entitled to vote, present in person or represented by proxy, shall have power to adjourn the meeting from time to time, without notice if the time and place thereof are announced at the

meeting at which the adjournment is taken, until a quorum shall be present or represented. At any such adjourned meeting, at which a quorum shall be present in person or represented by proxy, any business may be transacted which might have been transacted at the meeting as originally called. If the adjournment is for more than thirty (30) days, or if after the adjournment a new record date is fixed for the adjourned meeting, a notice of the adjourned meeting shall be given to each Stockholder of record entitled to vote.

Section 2.7 Voting.

(a) At any meeting of Stockholders, every Stockholder having the right to vote shall be entitled to vote in person or by proxy. Except as otherwise provided by or the Charter or with respect to any class of capital stock of the Corporation which holds different voting rights, each Stockholder of record shall be entitled to one vote for each share of capital stock registered in such Stockholder's name on the books of the Corporation.

(b) All elections of directors shall be determined by a plurality vote, and, except as otherwise provided by law or by the Charter, all other matters shall be determined by the vote of the holders of a majority of the voting power of the shares present in person or represented by proxy and voting on such other matters.

Section 2.8 Action by Consent. Any action required or permitted by law or by the Charter to be taken at any meeting of the Stockholders, may be taken without a meeting, without prior notice and without a vote, if written consent, setting forth the action so taken, shall be signed by the holders of outstanding voting stock having not less than the minimum number of votes that would be necessary to authorize or take such action at a meeting at which all shares entitled to vote thereon were present or represented by proxy and voted. Prompt notice of the taking of the corporate action without a meeting by less than unanimous written consent shall be given to those Stockholders who have not consented in writing.

ARTICLE 3

DIRECTORS

Section 3.1 Number and Term. The Board shall consist of one or more members, and the number of the directors of the Corporation shall be determined solely in the discretion of the Board. The directors shall be elected at the annual meeting of the Stockholders, except as provided in Section 3.2, and each director elected shall hold office until such director's successor is duly elected and shall qualify. Directors need not be stockholders.

Section 3.2 Chairman. The Board may designate a director to serve as Chairman of the Board, who shall preside at all meetings of the Board. The Chairman of the Board (who may also be designated as Executive Chairman with the approval of the Board) shall serve for such term and shall exercise such powers and perform such duties as shall be determined from time to time by the Board. The Chairman of the Board shall have a casting vote in the event of a deadlock on any resolution of the Board.

Section 3.3 Vacancies and New Directorships. If any vacancies occur in the Board, or if any new directorships are created by the Board, such vacancies may be filled by vote of a majority of the directors then in office, although less than a quorum, or by a sole remaining director. Each director so chosen shall hold office until the next annual meeting of Stockholders and until their successor is duly elected and shall qualify. If there are no directors in office, any officer or Stockholder may call a special meeting of Stockholders in accordance with the provisions of the Charter or these Bylaws, at which meeting such vacancies shall be filled.

Section 3.4 Powers. The business and affairs of the Corporation shall be managed by its Board, which may exercise all powers of the Corporation and perform all lawful acts and things that are not by law, the Charter or these Bylaws directed or required to be exercised or performed by the Stockholders.

Section 3.5 Removal; Resignation.

(a) Except as otherwise provided by law or by the Charter, any director, directors or the entire Board may be removed, with or without cause, by the holders of a majority of the voting power of the shares then entitled to vote at an election of directors.

(b) Any director may resign at any time by giving written notice to the Board. Unless otherwise specified in such written notice, a resignation shall take effect upon delivery thereof to the Board or the designated officer.

Section 3.6 Place of Meetings. The Board may hold meetings, both regular and special, either within or without the State of Delaware.

Section 3.7 Regular Meeting. A regular meeting of the Board shall be held each year, without notice, at the place of, and immediately prior to and/or following, the annual meeting of stockholders. Other regular meetings of the Board shall be held during each year, at such time and place as the Board may from time to time provide by resolution, either within or without the State of Delaware, without other notice than such resolution.

Section 3.8 Special Meetings. Special meetings of the Board may be called by the Chairman of the Board, by the President, by the Secretary, or upon the written request of any director of the Corporation then in office. Notice of the place, date and time of each such special meeting shall be given to each director by providing written notice to each director not less than two (2) business days before the meeting, and such notice may be given by giving notice in person or by telephone, e-mail transmission or facsimile transmission. Notice of special meetings of the Board need not state the purpose thereof, except as otherwise expressly provided by law, by the Charter or by these Bylaws. Any and all business may be transacted at a special meeting, unless otherwise indicated in the notice thereof or provided by law, by the Charter or by these Bylaws.

Section 3.9 Quorum; Adjournments. At all regular and special meetings of the Board, at least two directors (including any directors whose presence is required pursuant to any contract binding upon the Corporation) then in office shall constitute a quorum for the transaction of business, and the act of a majority of the directors present at any meeting at which there is a quorum shall be the act of the Board, except as may be otherwise specifically provided by law or by the Charter. If a quorum is not present at any meeting of the Board, any director present may require the adjournment the meeting. Notice of the place, date and time of each reconvened meeting shall be given to each director by mailing written notice to each director not less than two (2) business days before the meeting.

Section 3.10 Action by Consent. Unless otherwise restricted by the Charter, any action required or permitted to be taken at any meeting of the Board may be taken without a meeting, if a written consent thereto is signed by all of the directors then in office. Evidence of any consent to action 8 may be provided in writing, including electronically via email or facsimile.

Section 3.11 Meetings by Conference Telephone or Similar Communications. The Board may participate in a meeting by means of conference telephone or similar communications equipment by means of which all persons participating in the meeting can hear each other, and participation in such meeting shall constitute presence in person by such director.

Section 3.12 Committees of the Board. The Board may, by resolution passed by a majority of the directors in office, designate one or more additional special or standing committees, each such additional committee to consist of one or more of the directors of the Corporation as appointed by the Board. Each such committee shall have and may exercise such of the powers of the Board in the management of the business and affairs of the Corporation as may be provided in such resolution, except as delegated by the Board to another standing or special committee or as may be prohibited by law. A majority of a committee shall constitute a quorum for the transaction of any committee business.

ARTICLE 4

NOTICES

Section 4.1 Form; Delivery. Whenever, under the provisions of law, the Charter or these Bylaws, notice is required to be given to any director or Stockholder, it shall not be construed to mean personal notice unless otherwise specifically provided, but such notice may be given in writing, by mail, or by overnight carrier, or by electronic transmission (including via e-mail or facsimile transmission) addressed to such director or Stockholder, at such person's address as it appears on the records of the Corporation. Such notices shall be deemed to be given when received.

Section 4.2 Waiver. Whenever any notice is required to be given under the provisions of law, the Charter or these Bylaws, a written waiver thereof, signed by the person or persons entitled to said notice, whether before or after the time stated therein, shall be

deemed to be equivalent to such notice. In addition, any Stockholder who attends a meeting of Stockholders in person, or is represented at such meeting by proxy, without protesting at the commencement of the meeting the lack of notice thereof to such Stockholder, or any director who attends a meeting of the Board without protesting, at the commencement of the meeting, such lack of notice, shall be conclusively deemed to have waived notice of such meeting.

ARTICLE 5

OFFICERS

Section 5.1 Designations. The officers of the Corporation shall be chosen by the Board. All officers of the Corporation shall exercise such powers and perform such duties as are customarily incident to their respective offices, or as shall from time to time be determined by the Board. Any number of offices may be held by the same person, unless the Charter or these Bylaws otherwise provide.

Section 5.2 Term of Office; Removal. The Board, at its annual meeting, shall choose a President, a Secretary and a Treasurer. The Board may also choose a Chief Executive Officer, a Chief Operating Officer, a Chief Financial Officer, a Vice-President or Vice Presidents, one or more Assistant Secretaries and/or Assistant Treasurers, and such other officers as it shall deem necessary or appropriate. Each officer of the Corporation shall hold office until his or her successor is chosen. Any officer elected or appointed by the Board may be removed, with or without cause, at any time by the affirmative vote of a majority of the directors then in office. Any vacancy occurring in any office of the Corporation shall be filled for the unexpired portion of the term by the Board.

Section 5.3 Compensation. The compensation of all officers of the Corporation who are also directors of the Corporation shall be fixed by the Board. The Board may delegate the power to fix the compensation of all other officers of the Corporation to an officer of the Corporation.

ARTICLE 6

STOCK CERTIFICATES

Section 6.1 Certificates. Every holder of stock in the Corporation shall be entitled to have a certificate in the name of the Corporation, signed by an officer of the Corporation, certifying the number and class of shares owned by such Stockholder. The Board may approve the issuance of uncertificated shares of some or all of the shares of any or all of its classes or series of capital stock.

Section 6.2 Transfer. Upon surrender to the Corporation or any transfer agent of the Corporation of a certificate for shares duly endorsed or accompanied by proper evidence of succession, assignation or authority to transfer, it shall be the duty of the Corporation or its transfer agent to issue a new certificate to the person entitled thereto, cancel the old certificate and record the transaction upon its books.

Section 6.3 Lost, Stolen or Destroyed Certificates. The Board may direct a new certificate to be issued in place of any certificate theretofore issued by the Corporation which is claimed to have been lost, stolen, or destroyed, upon the making of an affidavit of that fact by the person claiming the certificate to be lost, stolen or destroyed. When authorizing such issue of a new certificate, the Board may, in its discretion and as a condition precedent to the issuance thereof, require the owner of such lost, stolen or destroyed certificate, or his legal representative, to advertise the same in a manner as it shall require or to give the Corporation a bond in such sum, or other security in such form, as it may direct as indemnity against any claim that may be made against the Corporation with respect to the certificate claimed to have been lost, stolen or destroyed.

ARTICLE 7

INDEMNIFICATION

Section 7.1 Indemnification. The Corporation shall provide indemnification to its officers, directors and other persons as provided for in the Charter.

Section 7.2 Modification. No amendment or repeal of any provision of this Article 7 shall alter, to the detriment of such director or officer, the right of such person to the advancement of expenses or indemnification related to a claim based on an act or failure to act which took place prior to such amendment, repeal or termination.

ARTICLE 8

GENERAL PROVISIONS

Section 8.1 Dividends. Subject to the provisions of the Charter, dividends upon the outstanding capital stock of the Corporation may be declared by the Board at any meeting of the Board, pursuant to law, and may be paid in cash, in property, or in shares of the Corporation's capital stock.

Section 8.2 Reserves. The Board shall have full power, subject to the provisions of law and the Charter, to determine whether any, and, if so, what part, of the funds legally available for payment of dividends shall be declared as dividends and paid to the Stockholders. The Board, in its sole discretion, may fix a sum which may be set aside or reserved over and above the paid-in capital of the Corporation for working capital or a reserve for any proper purpose, and may, from time to time, increase, diminish or vary such fund or funds.

Section 8.3 Fiscal Year. The fiscal year of the Corporation shall be determined from time to time by the Board.

Section 8.4 Seal. The Board shall have the power to select a corporate seal. No corporate seal shall be required, however, for the Corporation to conduct business.

Section 8.5. Contracts, etc. The Board may authorize any officer, officers, agent or agents to enter into and/or execute any and all agreements, deeds, bonds, mortgages, contracts and other obligations or instruments in the name of and on behalf of the Corporation, and such authority may be general or confined to specific instances.

Section 8.6. Checks, etc. All checks, demands, drafts or other orders for the payment of money, and notes or other evidences of indebtedness issued in the name of the Corporation shall be signed by such officer or officers or such agent or agents of the Corporation, and in such manner, as shall be determined by the Board.

Section 8.7. Bank Accounts and Drafts. The Board, the primary financial officer or any person designated by said primary financial officer, whether or not an employee of the Corporation, may authorize such bank accounts to be opened or maintained in the name and on behalf of the Corporation as he or she may deem necessary or appropriate, payments from such bank accounts to be made upon and according to the check of the Corporation in accordance with the written instructions of said primary financial officer, or other person so designated by such primary financial officer.

Section 8.8. Voting of Securities Owned by Corporation. All stock and other securities of any other corporation owned or held by the Corporation for itself, or for other parties in any capacity, and all proxies with respect thereto shall be executed by the person authorized to do so by resolution of the Board or, in the absence of such authorization, by the Chairman of the Board, the Chief Executive Officer or the President.

Section 8.9. Books. The books of the Corporation may be kept within or without the State of Delaware (subject to applicable law) at such place or places as may be designated from time to time by the Board.

Section 8.10. Ratification. Any transaction, questioned in any lawsuit on the ground of lack of authority, defective or irregular execution, adverse interest of director, officer or stockholder, non-disclosure, miscomputation or the application of improper principles or practices of accounting, may be ratified before or after judgment, by the Board or by the Stockholders, and if so ratified shall have

the same force and effect as if the questioned transaction had been originally duly authorized. Such ratification shall be binding upon the Corporation and the Stockholders and shall constitute a bar to any claim or execution of any judgment in respect of such questioned transaction.

ARTICLE 9

AMENDMENTS

Section 9.1 By the Board. These Bylaws may be altered, amended or repealed or new Bylaws may be adopted by the affirmative vote of a majority of the directors present at any regular or special meeting of the Board at which a quorum is present.

Section 9.2 By the Stockholders. These Bylaws may be altered, amended or repealed or new Bylaws may be adopted at any regular meeting of Stockholders, or at any special meeting of Stockholders, provided notice of such alteration, amendment, repeal or adoption of new Bylaws shall have been stated in the notice of such special meeting, and shall be approved by an affirmative vote of the holders of a majority of the shares of the Corporation's capital stock.

# # #

Exhibit 3.3

CERTIFICATE OF AMENDMENT TO THE
AMENDED AND RESTATED CERTIFICATE OF INCORPORATION
OF ADVANCED PLASMA THERAPIES INC.

(Pursuant to Section 242 of the
General Corporation Law of the State of Delaware)

For the purposes of amending the Amended and Restated Certificate of Incorporation, dated September 18, 2014 (the "**Original Certificate**"), of Advanced Plasma Therapies Inc. (the "**Company**"), a corporation organized and existing under and by virtue of the General Corporation Law of the State of Delaware (the "**DGCL**"), the undersigned does hereby certify that:

FIRST: The Board of Directors of the Company (the "**Board**") did duly adopt, at a meeting of the Board pursuant to Section 141(b) of the DCGL, resolutions proposing and declaring advisable the following amendment to Article I of the Original Certificate relating to the name of the Company, so that, as amended, said Article I shall read as follows:

The name of the corporation is Origin, Inc. (the "**Corporation**").

SECOND: Pursuant to Section 228(a) of the DGCL, the holders of outstanding shares of the Company having no less than the minimum number of votes that would be necessary to authorize or take such actions at a meeting at which all shares entitled to vote thereon were present and voted consented to the adoption of the aforesaid amendment without a meeting, without a vote and without prior notice and that written notice of the taking of such actions was given in accordance with Section 228(e) of the General Corporation Law of the State of Delaware.

THIRD: This amendment to the Original Certificate shall become effective immediately upon its filing with the Secretary of State of the State of Delaware.

IN WITNESS WHEREOF, the Company has caused this amendment to the Original Certificate to be duly executed by the undersigned this 8th day of October, 2015.

ADVANCED PLASMA THERAPIES INC.

By: /s/ Michael Preston
Name: Michael Preston
Title: Executive Chairman

Exhibit 3.4

CERTIFICATE OF AMENDMENT TO THE
AMENDED AND RESTATED CERTIFICATE OF INCORPORATION
OF ORIGIN, INC.

(Pursuant to Section 242 of the
General Corporation Law of the State of Delaware)

For the purposes of amending the Amended and Restated Certificate of Incorporation, dated September 18, 2014, as amended (the "**Original Certificate**"), of Origin, Inc. (f/k/a Advanced Plasma Therapies Inc.) (the "**Company**"), a corporation organized and existing under and by virtue of the General Corporation Law of the State of Delaware (the "**DGCL**"), the undersigned does hereby certify that:

FIRST: The Board of Directors of the Company (the "**Board**") did duly adopt, at a meeting of the Board pursuant to Section 141(b) of the DCGL, resolutions proposing and declaring advisable the following amendment to Article IV of the Original Certificate to remove the right of a majority of the holders of the then outstanding special voting common stock of the Company, par value $0.01 per share, acting as a separate class, to elect to irrevocably terminate the Special Voting Power (as defined in the Original Certificate), so that, as amended, Article IV, Section 4.2(a)(ii)(B)(II) of the Original Certificate shall read as follows:

"[Reserved]."

SECOND: Pursuant to Section 228(a) of the DGCL, the holders of outstanding shares of the Company having no less than the minimum number of votes that would be necessary to authorize or take such actions at a meeting at which all shares entitled to vote thereon were present and voted consented to the adoption of the aforesaid amendment without a meeting, without a vote and without prior notice and that written notice of the taking of such actions was given in accordance with Section 228(e) of the DGCL.

THIRD: This amendment to the Original Certificate shall become effective immediately upon its filing with the Secretary of State of the State of Delaware.

IN WITNESS WHEREOF, the Company has caused this amendment to the Original Certificate to be duly executed by the undersigned this 6th day of June, 2016.

ORIGIN, INC.

By: /s/ Michael Preston
Name: Michael Preston
Title: Executive Chairman and Chief Executive Officer

Exhibit 3.5

CERTIFICATE OF DESIGNATIONS, PREFERENCES AND RIGHTS OF THE SERIES A 8% CONVERTIBLE PREFERRED STOCK OF ORIGIN, INC.

The undersigned, being the Chief Financial Officer of Origin, Inc., a Delaware corporation (the "Company"), in accordance with the provisions of the General Corporation Law of the State of Delaware, does hereby certify that, pursuant to the authority conferred upon the board of directors of the Company (the "Board of Directors") by the amended and restated certificate of incorporation of the Company, as amended, (the "Certificate of Incorporation") the following resolution creating a series of Series A Preferred Stock, was duly adopted on July 31, 2017:

RESOLVED, that pursuant to the authority expressly granted to and vested in the Board of Directors by the Certificate of Incorporation, there hereby is created out of the shares of preferred stock of the Company, par value $0.01 per share, as authorized in Article IV, Section 4.2(b) of the Certificate of Incorporation (the "Preferred Stock"), a series of Preferred Stock, to be designated the "Series A 8% Convertible Preferred Stock," consisting of 30,000 shares of Preferred Stock;

1. Designation and Amount. The shares of such series of Preferred Stock shall have a par value of $0.01 per share and shall be designated as "Series A 8% Convertible Preferred Stock" (the "Series A Preferred Stock") and the number of shares constituting the Series A Preferred Stock shall be 30,000 shares of Preferred Stock. The Series A Preferred Stock shall have a stated value of $100 per share (the "Stated Value").

2. Dividends.

2.1 Payment of Dividends. Each holder of the Series A Preferred Stock (a "Holder" and collectively, the "Holders") will be entitled to receive dividends at the simple rate of eight percent (8%) of the Stated Value per share per annum, payable in cash only upon redemption of the Series A Preferred Stock or in equity and/or equity-linked securities upon conversion of the Series A Preferred Stock as provided for in Section 3.4 of this Certificate, and prior to and in preference to any declaration or payment of any dividend on the common stock of the Company, par value $0.01 per share (the "Common Stock"). Any payments required to be made hereunder on any day that is not a business day shall be made on the next succeeding business day without interest or additional payment for such delay. Unless otherwise stated herein, any actions required to be made hereunder on any day that is not a business day shall be taken on the next succeeding business day.

2.2 Dividend Preference. So long as any shares of Series A Preferred Stock are outstanding, the Company shall not declare, pay or set apart for payment any dividend on any shares of Common Stock or classes and series of Preferred Stock of the Company which by their terms do not rank senior to the Series A Preferred Stock ("Junior Stock") (other than dividends payable in additional shares of Junior Stock), unless at the time of such dividend the Company shall have paid all accrued and unpaid dividends on the outstanding shares of Series A Preferred Stock.

3. Redemption and Optional Conversion.

3.1 Redemption. Commencing on the earlier to occur of (i) August 9, 2019 and (ii) the closing date of the Qualified Equity Financing (as defined below) (the "Redemption Date"), at the option of the Holders of a majority of the then outstanding shares of the Series A Preferred Stock, the Company shall redeem all of the shares of Series A Preferred Stock (a "Redemption") of each Holder, for cash. The redemption price paid to each Holder shall be equal to One Hundred Twenty Five Percent (125%) of the Stated Value for each share of Series A Preferred Stock, multiplied by the number of shares of Series A Preferred Stock held by such Holder (the "Redemption Purchase Price"). On the Redemption Date, the Company shall confirm the number of shares of Series A Preferred Stock held by each Holder in accordance with its books and records. Upon the date the Redemption Purchase Price is paid to a Holder, the Series A Preferred Stock held by such Holder shall be deemed cancelled without any further action required of the Holder or the Company.

3.2 Transfer of Preferred Stock. A Holder shall not, directly or indirectly, sell, give, assign, hypothecate, pledge, encumber, grant a security interest in or otherwise dispose of (whether by operation of law or otherwise) (each a "Transfer") the Series

A Preferred Stock, in whole or in part, or any right, title or interest herein or hereto, except in accordance with the provisions of this certificate of designations, preferences and rights of the Series A Preferred Stock (the "Certificate"). The Company may refuse to register any Transfer of Series A Preferred Stock in violation of this Certificate. Upon the Transfer of the Series A Preferred Stock, in whole or in part, through the use of an assignment form in a form reasonably satisfactory to the Company, and in accordance with applicable law or regulation, and the payment by the Holder of funds sufficient to pay any transfer tax, the Company shall issue and register the Series A Preferred Stock in the name of the estate or administrator of the Holder. Notwithstanding any other provision of this Certificate, the Company may refuse to register any Transfer made pursuant to this Section 3.2 unless (a) the Transfer complies in all respects with the applicable provisions of this Certificate and (b) the Transfer complies in all respects with applicable federal and state securities laws, including, without limitation, the Securities Act of 1933, as amended (the "Securities Act").

3.3 Restrictive Legend. Each certificate evidencing shares of Series A Preferred Stock issued to the Holder shall bear the following restrictive legend or a similar legend until such time as the transfer of such security is not restricted under the federal securities laws:

THE TERMS OF THIS SECURITY SHALL BE GOVERNED BY THE CERTIFICATE OF DESIGNATIONS, PREFERENCES AND RIGHTS OF SERIES A PREFERRED STOCK OF ORIGIN, INC. (THE "COMPANY"), A COPY OF WHICH IS ON FILE AT THE PRINCIPAL OFFICE OF THE COMPANY.

NEITHER THESE SECURITIES, NOR THE SECURITIES INTO WHICH THESE SECURITIES ARE CONVERTIBLE, HAVE BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933, AS AMENDED (THE "SECURITIES ACT"), OR UNDER APPLICABLE STATE SECURITIES LAWS. NEITHER THESE SECURITIES, NOR THE SECURITIES INTO WHICH THESE SECURITIES ARE CONVERTIBLE, MAY BE OFFERED FOR SALE, SOLD, ASSIGNED, TRANSFERRED, PLEDGED, ENCUMBERED OR OTHERWISE DISPOSED OF IN THE ABSENCE OF (A) AN EFFECTIVE REGISTRATION STATEMENT FOR SUCH SECURITIES UNDER THE SECURITIES ACT OR (B) AN AVAILABLE EXEMPTION FROM THE REGISTRATION REQUIREMENTS OF THE SECURITIES ACT AND IN ACCORDANCE WITH APPLICABLE STATE SECURITIES LAWS OR BLUE SKY LAWS AS EVIDENCED BY A LEGAL OPINION OF COUNSEL REASONABLY SATISFACTORY TO THE COMPANY.

3.4 Optional Conversion.

(a) Conversion Prior to a Qualified Equity Financing. At any time prior to the Redemption Date, but prior to the consummation of a Qualified Equity Financing (as defined below), with the approval of the Holders of a majority of the then outstanding shares of the Series A Preferred Stock, each Holder shall convert (based on the aggregate amount invested in the Series A Preferred Stock by each Holder, the "Invested Amount")) the shares of Series A Preferred Stock held by such Holder, and all dividends accrued but unpaid thereon, into shares of the Company's special voting common stock, par value $0.01 per share (the "Special Voting Common Stock") with the number of shares of Special Voting Stock to be received to be determined for each Holder by dividing (i) the Invested Amount of such Holder by (ii) the lesser of (A) US$1,100 or (B) the lowest price per share paid by investors in the Private Placement (as defined below).

(b) Conversion Upon and After a Qualified Equity Financing. At any time prior to the Redemption Date, and from and after the consummation by the Company the first equity financing following the date of the Purchase Agreement resulting in aggregate gross proceeds to the Company of not less than Fifteen Million United States Dollars (US$15,000,000) ("Qualified Equity Financing"), with the approval of the Holders of a majority of the then outstanding shares of the Series A Preferred Stock, each Holder shall convert (based on the Invested Amount of such Holder) the shares of Series A Preferred Stock held by such Holder, and all dividends accrued but unpaid thereon, in the applicable dollar amount of equity or equity-linked securities of the Company issued in the Qualified Equity Financing on the exact terms and conditions (including, without limitation, the same pre-money valuation of the Company at the time of consummation of the Qualified Equity Financing, but subject to any legal restrictions that would preclude the Holder from holding such securities, in which case reasonable accommodations shall be agreed to in order to specifically address such legal restrictions) and pursuant to the same documentation as such securities are issued to investors in such Qualified Equity Financing, with the effect that the Holders will be deemed to have invested the Invested Amount in the Qualified Equity Financing. Notwithstanding anything in this Certificate or the Purchase Agreement to the contrary, the Series A Preferred Stock shall automatically (and without any consent or approval of the Holders required) convert based on the foregoing provision at the closing of a Qualified Equity Financing that is an underwritten initial public offering by the Company. For the avoidance of doubt, it is agreed that the definition of "Qualified Equity Financing" shall include the Company's private placement of shares pf its common stock at $1,100 per share ongoing as of the date of the Purchase Agreement (the "Private Placement"); *provided, however,* that the Private Placement shall only qualify as a Qualified Equity Financing if US$15 million in the aggregate is raised in the Private Placement from and after the date of the Purchase Agreement (i.e., funds raised in the Private Placement prior to the date of the Purchase Agreement shall not be included for purposes of determining whether the Private Placement qualifies as a Qualified Equity Financing).

4. Liquidation Preference. In the event of a liquidation, dissolution or winding up of the Company, the Holders of the Series A Preferred Stock shall be entitled to receive out of the assets of the Company legally available for distribution, prior to and in preference to distributions to the holders of Common Stock or Junior Stock, and either in preference to or pari pasu with the holders of any other series of Preferred Stock that may be issued in the future that is expressly made senior or pari pasu, as the case may be, an amount equal to the Stated Value per share of the Series A Preferred Stock. The remaining assets of the Company shall be distributed to the holders of the outstanding equity securities of the Company in accordance with their liquidation rights.

5. Voting Rights. Each share of Series A Preferred Stock will entitle the Holder thereof to one (1) vote on any matter brought before holders of Common Stock at any annual or special meeting of the Company's stockholders; provided that if at any time the Holders own, in the aggregate, voting securities of the Company constituting more than Nineteen and One-Half Percent (19.5%) of the total voting share capital of the Company, on an as-converted basis, then the shares of Series A Preferred Stock shall be limited, in the aggregate and together with any other voting share capital of the Company held by the Holders, to Nineteen and One-Half Percent (19.5%) of the total number of votes, on an as-converted basis, such votes to be split equally on a fractional basis amongst all such shares of voting capital stock.

6. Miscellaneous.

6.1 Amendments in Writing. Except as otherwise provided herein, the provisions of this Certificate may be amended and the Company may take any action herein prohibited, or omit to perform any act herein required to be performed by it, only if the Company has obtained the approval of the Board of Directors and the Holders representing at least a majority of the outstanding shares of Series A Preferred Stock, together with any other required approvals of the Company's stockholders.

6.2 Mutilated, Lost, Stolen or Destroyed Certificate. In case a Series A Preferred Stock certificate shall be mutilated, lost, stolen or destroyed, the Company shall issue and deliver in exchange and substitution for and upon cancellation of the mutilated certificate, or in lieu of and substitution for the certificate, mutilated, lost, stolen or destroyed, a new certificate of like tenor and representing an equivalent right or interest, but only upon receipt of evidence reasonably satisfactory to the Company of such loss, theft or destruction and an indemnity or bond, if requested, also reasonably satisfactory to it.

6.3 Notices. Notice to any Holder of the Series A Preferred Stock shall be given in accordance with Section 6.8 of that certain Securities Purchase Agreement, dated August 3, 2017, between the Company and the initial Holders of the Series A Preferred Stock (the "Purchase Agreement"), and otherwise to the registered address set forth in the Company's records for such Holder.

6.4 Effectiveness. This Certificate of Designation shall become effective upon the filing thereof with the Secretary of State of the State of Delaware.

[Signature Page Follows]

IN WITNESS WHEREOF, the Company has caused this Certificate to be signed in its name and on its behalf on this 8th day of August, 2017 by a duly authorized officer of the Company.

ORIGIN, INC.

By: /s/ J. Fernandes
Name: Johnny Fernandes
Title: Chief Financial Officer

Exhibit 3.6

CERTIFICATE OF DESIGNATIONS, PREFERENCES AND RIGHTS OF THE SERIES B 20% PREFERRED STOCK OF ORIGIN, INC.

The undersigned, being the Executive Chairman and Chief Executive Officer of Origin, Inc., a Delaware corporation (the "Company"), in accordance with the provisions of the General Corporation Law of the State of Delaware, does hereby certify that, pursuant to the authority conferred upon the board of directors of the Company (the "Board of Directors") by the amended and restated certificate of incorporation of the Company, as amended, (the "Certificate of Incorporation") the following resolution creating a series of Series B Preferred Stock, was duly adopted on January 2, 2020:

RESOLVED, that pursuant to the authority expressly granted to and vested in the Board of Directors by the Certificate of Incorporation, there hereby is created out of the shares of preferred stock of the Company, par value $0.01 per share, as authorized in Article IV, Section 4.2(b) of the Certificate of Incorporation (the "Preferred Stock"), a series of Preferred Stock, to be designated the "Series B 20% Preferred Stock," consisting of 10,000 shares of Preferred Stock;

1. Designation and Amount. The shares of such series of Preferred Stock shall have a par value of $0.01 per share and shall be designated as "Series B 20% Preferred Stock" (the "Series B Preferred Stock") and the number of shares constituting the Series B Preferred Stock shall be 10,000 shares of Preferred Stock. The Series B Preferred Stock shall have a stated value of $100 per share (the "Stated Value").

2. Dividends.

2.1 Payment of Dividends. Each holder of the Series B Preferred Stock (a "Holder" and collectively, the "Holders") will be entitled to receive dividends at the simple rate of twenty percent (20%) of the Stated Value per share per annum, payable in cash only upon redemption of the Series B Preferred Stock, and prior to and in preference to any declaration or payment of any dividend on the common stock of the Company, par value $0.01 per share (the "Common Stock"). Any payments required to be made hereunder on any day that is not a business day shall be made on the next succeeding business day without interest or additional payment for such delay. Unless otherwise stated herein, any actions required to be made hereunder on any day that is not a business day shall be taken on the next succeeding business day.

2.2 Dividend Preference. So long as any shares of Series B Preferred Stock are outstanding, the Company shall not declare, pay or set apart for payment any dividend on any shares of Common Stock or classes and series of Preferred Stock of the Company which by their terms do not rank senior to the Series B Preferred Stock ("Junior Stock") (other than dividends payable in additional shares of Junior Stock), unless at the time of such dividend the Company shall have paid all accrued and unpaid dividends on the outstanding shares of Series B Preferred Stock. The shares of Series B Preferred Stock shall rank pari passu in preference to the Company's outstanding Series A 8% Convertible Preferred Stock (the "Series A Preferred Stock").

3. Redemption

3.1 Redemption.

(a) By the Holders. Commencing on the earlier to occur of (i) December 31, 2020 and (ii) the completion by the Company (following the closing of the financing in which the shares of Series B Preferred Stock are first issued) of an equity or debt financing yielding gross proceeds of $15 million or greater (the "Redemption Date"), at the option of the Holders of a majority of the then outstanding shares of the Series B Preferred Stock, the Company shall redeem all of the shares of Series B Preferred Stock (a "Redemption") of each Holder, for cash. The aggregate redemption price paid to each Holder shall be equal to the Stated Value for each share of Series B Preferred Stock plus accrued but unpaid dividends thereon, multiplied by the number of shares of Series B Preferred Stock held by such Holder (the "Redemption Purchase Price"). On the Redemption Date, the Company shall confirm the number of shares of Series B Preferred Stock held by each Holder in accordance with its books and records. Upon the date the Redemption Purchase

Price is paid to a Holder, the Series B Preferred Stock held by such Holder shall be deemed cancelled without any further action required of the Holder or the Company.

(b) By the Company. At any time, at the election of the Company and upon written notice to the Holders, the Company shall have the right to effect a Redemption of all of the shares of Series B Preferred Stock of each Holder, for cash, for an amount equal to the Redemption Purchase Price. Upon the date the Redemption Purchase Price is paid to a Holder, the Series B Preferred Stock held by such Holder shall be deemed cancelled without any further action required of the Holder or the Company.

3.2 Transfer of Preferred Stock. A Holder shall not, directly or indirectly, sell, give, assign, hypothecate, pledge, encumber, grant a security interest in or otherwise dispose of (whether by operation of law or otherwise) (each a "Transfer") the Series B Preferred Stock, in whole or in part, or any right, title or interest herein or hereto, except in accordance with the provisions of this certificate of designations, preferences and rights of the Series B Preferred Stock (the "Certificate"). Subject to the requirements of any written contractual arrangement between the Company and any Holder, the Company may refuse to register any Transfer of Series B Preferred Stock in violation of this Certificate. Upon the Transfer of the Series B Preferred Stock, in whole or in part, through the use of an assignment form in a form reasonably satisfactory to the Company, and in accordance with applicable law or regulation, and the payment by the Holder of funds sufficient to pay any transfer tax, the Company shall issue and register the Series B Preferred Stock in the name of the estate or administrator of the Holder. Notwithstanding any other provision of this Certificate, the Company may refuse to register any Transfer made pursuant to this Section 3.2 unless (a) the Transfer complies in all respects with the applicable provisions of this Certificate and (b) the Transfer complies in all respects with applicable federal and state securities laws, including, without limitation, the Securities Act of 1933, as amended (the "Securities Act").

3.3 Restrictive Legend. Each certificate evidencing shares of Series B Preferred Stock issued to the Holder shall bear the following restrictive legend or a similar legend until such time as the transfer of such security is not restricted under the federal securities laws:

THE TERMS OF THIS SECURITY SHALL BE GOVERNED BY THE CERTIFICATE OF DESIGNATIONS, PREFERENCES AND RIGHTS OF SERIES B 20% CONVERTIBLE PREFERRED STOCK OF ORIGIN, INC. (THE "COMPANY"), A COPY OF WHICH IS ON FILE AT THE PRINCIPAL OFFICE OF THE COMPANY.

NEITHER THESE SECURITIES, NOR THE SECURITIES INTO WHICH THESE SECURITIES ARE CONVERTIBLE, HAVE BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933, AS AMENDED (THE "SECURITIES ACT"), OR UNDER APPLICABLE STATE SECURITIES LAWS. NEITHER THESE SECURITIES, NOR THE SECURITIES INTO WHICH THESE SECURITIES ARE CONVERTIBLE, MAY BE OFFERED FOR SALE, SOLD, ASSIGNED, TRANSFERRED, PLEDGED, ENCUMBERED OR OTHERWISE DISPOSED OF IN THE ABSENCE OF (A) AN EFFECTIVE REGISTRATION STATEMENT FOR SUCH SECURITIES UNDER THE SECURITIES ACT OR (B) AN AVAILABLE EXEMPTION FROM THE REGISTRATION REQUIREMENTS OF THE SECURITIES ACT AND IN ACCORDANCE WITH APPLICABLE STATE SECURITIES LAWS OR BLUE SKY LAWS AS EVIDENCED BY A LEGAL OPINION OF COUNSEL REASONABLY SATISFACTORY TO THE COMPANY.

4. Liquidation Preference. In the event of a liquidation, dissolution or winding up of the Company, the Holders of the Series B Preferred Stock shall be entitled to receive out of the assets of the Company legally available for distribution: (a) on a pari passu basis with the holder of Series A Preferred Stock, (b) prior to and in preference to distributions to the holders of Common Stock or Junior Stock, and (c) either in preference to or pari passu with the holders of any other series of Preferred Stock that may be issued in the future that is expressly made senior or pari passu, as the case may be, an amount equal to the Stated Value per share of the Series B Preferred Stock plus accrued but unpaid dividends thereon. The remaining assets of the Company shall be distributed to the holders of the outstanding equity securities of the Company in accordance with their liquidation rights.

5. Voting Rights. Prior to January 21, 2020, all shares of Series B Preferred Stock outstanding shall collective have one (1) vote (to be divided equally amongst all such outstanding shares) on any matter brought before holders of Common Stock at any annual or special meeting of the Company's stockholders. As of and following January 21, 2020, each share of Series B Preferred Stock will entitle the Holder thereof to one (1) vote on any matter brought before holders of Common Stock at any annual or special meeting of the Company's stockholders.

6. Miscellaneous.

6.1 Amendments in Writing. Except as otherwise provided herein, the provisions of this Certificate may be amended and the Company may take any action herein prohibited, or omit to perform any act herein required to be performed by it, only if the Company has obtained the approval of the Board of Directors and the Holders representing at least a majority of the outstanding shares of Series B Preferred Stock, together with any other required approvals of the Company's stockholders.

6.2 Mutilated, Lost, Stolen or Destroyed Certificate. In case a Series B Preferred Stock certificate shall be mutilated, lost, stolen or destroyed, the Company shall issue and deliver in exchange and substitution for and upon cancellation of the mutilated certificate, or in lieu of and substitution for the certificate, mutilated, lost, stolen or destroyed, a new certificate of like tenor and representing an equivalent right or interest, but only upon receipt of evidence reasonably satisfactory to the Company of such loss, theft or destruction and an indemnity or bond, if requested, also reasonably satisfactory to it.

6.3 Notices. Notice to any Holder of the Series B Preferred Stock shall be given in accordance with Section 6.8 of that certain Securities Purchase Agreement, dated January 2, 2019, between the Company and the initial Holders of the Series B Preferred Stock (the "Purchase Agreement"), and otherwise to the registered address set forth in the Company's records for such Holder.

6.4 Effectiveness. This Certificate of Designation shall become effective upon the filing thereof with the Secretary of State of the State of Delaware.

IN WITNESS WHEREOF, the Company has caused this Certificate to be signed in its name and on its behalf on this 9th day of January, 2020 by a duly authorized officer of the Company.

ORIGIN, INC.

By: /s/ Michael Preston
Name: Michael Preston
Title: Executive Chairman and Chief Executive Officer

Exhibit 3.9

STATE OF DELAWARE

CERTIFICATE FOR REVIVAL OF CHARTER

The corporation organized under the laws of the State of Delaware, the charter of which was voided for non-payment of taxes and/or for failure to file a complete annual report, now desires to procure a revival of its charter pursuant to Section 312 of the General Corporation Law of the State of Delaware (the "DGCL"), and hereby certifies as follows:

1. The name of the corporation at the time its certificate of incorporation became forfeited or void was Origin, Inc. and the corporation was originally incorporated under the name Plasma Jet Technologies, Inc.

2. The date of filing of the corporation's original Certificate of Incorporation in the State of Delaware was June 14, 2010.

3. The new name under which the corporation is to be revived is Origin Life Sciences, Inc., pursuant to Section 312(f) of the DGCL, as a result of another corporation organized under the laws of the State of Delaware adopting the name "Origin, LLC" while the corporation's certificate of incorporation was forfeited or void.

4. The Registered Office of the corporation in the State of Delaware is located at 16192 Coastal Highway, in the City of Lewes, County of Sussex, 19958. The name of the Registered Agent at such address upon whom process against this Corporation may be served is Harvard Business Services, Inc.

5. The corporation desiring to be revived and so reviving its certificate of incorporation was organized under the laws of the State of Delaware.

6. The corporation was duly organized and carried on the business authorized by its charter, under the name Origin, Inc., until the 1st day of March, 2020, at which time its charter became inoperative and void for non-payment of taxes and/or failure to file a complete annual report.

7. This Certificate of Revival is filed by authority of the duly elected directors of the corporation in accordance with the laws of the State of Delaware.

By: /s/ Michael Preston
(Authorized Officer)

Michael Preston
Chairman and Chief Executive Officer
(Name and Title)

Exhibit 3.10

CERTIFICATE OF AMENDMENT TO THE
AMENDED AND RESTATED CERTIFICATE OF INCORPORATION
OF ORIGIN LIFE SCIENCES, INC.

(Pursuant to Section 242 of the
General Corporation Law of the State of Delaware)

For the purposes of amending the Amended and Restated Certificate of Incorporation, dated September 18, 2014, as amended (the "**Original Certificate**"), of Origin Life Sciences, Inc. (f/k/a Origin, Inc. and originally incorporated as Plasma Jet Technologies, Inc.) (the "**Corporation**"), a corporation organized and existing under and by virtue of the General Corporation Law of the State of Delaware (the "**DGCL**"), the undersigned does hereby certify that:

FIRST: The Board of Directors of the Corporation (the "**Board**") did duly adopt, at a meeting of the Board pursuant to Section 141(b) of the DCGL, resolutions proposing and declaring advisable the following amendment to Article IV of the Original Certificate, so that, as amended, Article IV, Section 4.2(a)(ii)(B)(II) of the Original Certificate shall read as follows:

"Conversion of Special Voting Power.

1. Effective immediately upon the filing of this Certificate of Amendment, each share of Special Voting Common Stock issued and outstanding or held by the Corporation in treasury shall automatically and without any further action required by the Corporation or the holders of the Special Voting Common Stock convert into and be thereafter treated as one outstanding, fully paid and nonassessable share (or treasury share, as the case may be) of Common Stock. From and after such time, any certificate previously representing shares of Special Voting Common Stock shall represent an equal number of shares of Common Stock into which such shares of Special Voting Common Stock were converted."

SECOND: Pursuant to Section 228(a) of the DGCL, the holders of outstanding shares of the Corporation having no less than the minimum number of votes that would be necessary to authorize or take such actions at a meeting at which all shares entitled to vote thereon were present and voted consented to the adoption of the aforesaid amendment without a meeting, without a vote and without prior notice and that written notice of the taking of such actions was given in accordance with Section 228(e) of the DGCL.

THIRD: This amendment to the Original Certificate shall become effective immediately upon its filing with the Secretary of State of the State of Delaware.

IN WITNESS WHEREOF, the Corporation has caused this amendment to the Original Certificate to be duly executed by the undersigned this 8th day of March, 2023.

ORIGIN LIFE SCIENCES, INC.

By: /s/ Michael Preston
Name: Michael Preston
Title: Executive Chairman and Chief Executive Officer

Exhibit 3.11

CERTIFICATE OF ELIMINATION
OF THE
CERTIFICATE OF DESIGNATION
OF
SERIES A 8% CONVERTIBLE PREFERRED STOCK
OF
ORIGIN LIFE SCIENCES, INC.

Pursuant to Section 151(g)
of the General Corporation Law
of the State of Delaware

Origin Life Sciences, Inc., a corporation organized and existing under the laws of the State of Delaware (the "***Corporation***"), in accordance with the provisions of Section 151(g) of the General Corporation Law of the State of Delaware (the "***DGCL***"), hereby certifies as follows:

FIRST: Pursuant to the authority expressly vested in the Board of Directors (the "***Board***") of the Corporation by the Amended and Restated Certificate of Incorporation of the Corporation, and by Section 151 of the DGCL, by resolutions duly adopted, authorized the issuance of, and established the voting powers, designation, preferences and relative, participating and other rights, and the qualifications, limitations and restrictions of 30,000 shares of Series A 8% Convertible Preferred Stock, par value $0.001 per share (the "***Series A Preferred Stock***"), as evidenced by the Certificate of Designation with respect to such Series A Preferred Stock filed with the Secretary of State of the State of Delaware on August 8, 2017.

SECOND: No shares of Series A Preferred Stock are outstanding and none will be issued subject to the Certificate of Designation governing such Series A Preferred Stock.

THIRD: On March 2, 2023, the Board duly adopted the following resolutions approving the proposed elimination of the Series A Preferred Stock as follows:

WHEREAS, the Corporation has authorized 1,000,000 shares of preferred stock, par value $0.01 per share ("Preferred Stock"), to be issued from time to time by the Board in series upon the designations determined by the Board;

WHEREAS, the Board, pursuant to Section 151 of the DGCL and the authority granted in the Corporation's Amended and Restated Certificate of Incorporation, by resolution duly adopted, authorized and designated 30,000 shares of Series A 8% Convertible Preferred Stock (the "Series A Preferred Stock"), as evidenced by the Certificate of Designation with respect to such Series A Preferred Stock filed with the Secretary of State of the State of Delaware on August 8, 2017 (the "Series A Certificate of Designation");

WHEREAS, there are no shares of Series A Preferred Stock outstanding and no further shares of Series A Preferred Stock will be issued;

WHEREAS, the Board deems it in the best interest of the Corporation to eliminate the Series A Certificate of Designation from the Corporation's Amended and Restated Certificate of Incorporation; and

WHEREAS, the Board deems it in the best interest of the Corporation that all such Series A Preferred Stock resume the status of authorized but unissued and non-designated shares of Preferred Stock.

NOW, THEREFORE, BE IT RESOLVED, that none of the authorized shares of Series A Preferred Stock are outstanding, and none will be issued subject to the Series A Certificate of Designation; and, be it further

RESOLVED, that the officers of the Corporation be, and each of them individually hereby is, authorized and directed in the name and on behalf of the Corporation to file a certificate pursuant to Section 151(g) of the DGCL with the office of the Secretary of State of the State of Delaware setting forth a copy of these resolutions whereupon all matters set forth in the Series A Certificate of Designation shall be eliminated from the Corporation's Amended and Restated Certificate of Incorporation; and, be it further

RESOLVED, that the officers of the Corporation be, and each hereby is, authorized, empowered and directed, for and on behalf of the Corporation, to take any and all actions, to negotiate for and enter into agreements and amendments to agreements, to perform all such acts and things, to execute, file, deliver or record in the name and on behalf of the Corporation, all such certificates, instruments, agreements or other documents, and to make all such payments as they, in their judgment, or in the judgment of any one or more of them, may deem necessary, advisable or appropriate in order to carry out the purpose and intent of, or consummate the transactions contemplated by the foregoing resolutions and/or all of the transactions contemplated therein or thereby, the authorization therefor to be conclusively evidenced by the taking of such action or the execution and delivery of such certificates, instruments, agreements or documents; and be it further

RESOLVED, that all actions heretofore taken by the officers and directors of the Corporation with respect to the foregoing transactions and all other matters contemplated by the foregoing resolutions are hereby authorized, approved, confirmed and to the extent necessary, ratified.

FOURTH: In accordance with Section 151(g) of the DGCL, the shares that were designated as Series A Preferred Stock are hereby returned to the status of authorized but unissued shares of the Preferred Stock of the Corporation, without designation as to series.

IN WITNESS WHEREOF, the Corporation has caused this Certificate of Elimination to be signed by its duly authorized officer on the 8th day of March, 2023.

ORIGIN LIFE SCIENCES, INC.

By: /s/ Michael Preston
Name: Michael Preston
Title: Executive Chairman and Chief Executive Officer

Exhibit 4.3

NEITHER THIS NOTE NOR THE SECURITIES INTO WHICH THIS NOTE IS CONVERTIBLE HAVE BEEN REGISTERED WITH THE SECURITIES AND EXCHANGE COMMISSION OR THE SECURITIES COMMISSION OF ANY STATE. THESE SECURITIES HAVE BEEN SOLD IN RELIANCE UPON AN EXEMPTION FROM REGISTRATION UNDER THE SECURITIES ACT OF 1933, AS AMENDED (THE "SECURITIES ACT"), AND, ACCORDINGLY, MAY NOT BE OFFERED OR SOLD EXCEPT PURSUANT TO AN EFFECTIVE REGISTRATION STATEMENT UNDER THE SECURITIES ACT OR PURSUANT TO AN AVAILABLE EXEMPTION FROM, OR IN A TRANSACTION NOT SUBJECT TO, THE REGISTRATION REQUIREMENTS OF THE SECURITIES ACT AND IN ACCORDANCE WITH APPLICABLE STATE SECURITIES LAWS.

ORIGIN, INC.

CONVERTIBLE NOTE

Issuance Date: _____, 2022	**Original Principal Amount: $ _____**
Note No. _____	

FOR VALUE RECEIVED, **Origin, Inc.**, a Delaware corporation ("Origin" or the "Maker"), hereby promises to pay to the order of _____ (the "Investor"), or registered assigns (together with the Investor, the "Holder"), the amount set out above as the "Original Principal Amount", as reduced pursuant to the terms hereof pursuant to redemption, conversion or otherwise (the "Principal"), when due, whether upon the Maturity Date (as defined below), acceleration, redemption or otherwise (in each case in accordance with the terms hereof) and to pay interest ("Interest") on any outstanding Principal at the applicable Interest Rate from the date set out above as the Issuance Date (the "Issuance Date") until the same becomes due and payable, upon the Maturity Date or acceleration, conversion, redemption or otherwise (in each case in accordance with the terms hereof).

The Original Principal Amount is _____ Dollars ($ _____). For purposes hereof, the term "Outstanding Balance" means the Original Principal Amount, as reduced or increased, as the case may be, pursuant to the terms hereof for conversion, breach hereof or otherwise, plus any accrued but unpaid interest, collection and enforcements costs, and any other fees or charges incurred under this Note; *provided that*, in the event of an optional or mandatory conversion of the Note into shares of Common Stock (as provided herein), all accrued interest on the Principal subject to such conversion shall be waived.

This Note is being issued pursuant to the terms of Origin's Confidential Executive Summary/Risk Factor Booklet, dated as of June [ ], 2022 (the "Executive Summary"), and the exhibits thereto, including a form of subscription agreement, dated as of the Issuance Date (the "Subscription Agreement") and other documentation annexed to the Executive Summary (collectively, the "Transaction Documents"). Unless otherwise defined herein, all capitalized terms, when used in this Note, shall have the same meaning as they are defined in the Transaction Documents.

This Note is one of the Convertible Notes issued on or about the date of this Note by the Maker in an aggregate principal amount of up to $5,000,000, (the "Notes"). Each of the Notes shall rank equally without preference or priority of any kind over one another, and all payments and recoveries under the Notes payable on account of principal and interest on the Notes shall be paid and applied ratably and proportionately on the balance of all outstanding Notes on the basis of their original principal amount.

1. GENERAL TERMS

(a) Payment of Principal. Unless previously converted into shares of Common Stock of Origin or the common stock of any successor in interest to the Maker (each the "Common Stock") as contemplated hereby, this Note, together with all accrued interest hereon at the Interest Rate, shall be due and payable on the third (3rd) anniversary of the Issuance Date first referred to above (the "Maturity Date"). In the event that within 12 months of the final closing of the offering contemplated by the Transaction Documents, the Maker shall not have consummated an initial, "firm commitment" underwritten public offering of the Common Stock and concurrent

listing of the Common Stock on a "National Securities Exchange", as defined below (the "IPO") or other "Liquidity Event" (hereinafter defined), the Maker may elect either (a) upon fifteen (15) days prior written notice to the Holder, elect to prepay all of the Principal and accrued interest hereon, subject to the Holder's right to convert the Note into Common Stock during such fifteen (15) day period, or (b) if the Maker does not prepay the entire Principal or the remaining Principal, the Principal will be subject to an automatic, one-time increase to 110% of the then outstanding Principal.

(b) Interest. Interest shall accrue from the Issuance Date on the Original Principal Amount or other outstanding Principal at an annual rate of six percent (6%) (the "Interest Rate") and all accrued interest shall be fully paid on the Maturity Date (or sooner as provided herein) to the Holder or its assignee in whose name this Note is registered on the records of the Maker regarding registration and transfers of Notes in cash. However, in the event of an optional or mandatory conversion of the Note into shares of Common Stock (as provided herein), all accrued interest on the Principal subject to such conversion shall be waived.

2. EVENTS OF DEFAULT. Whenever used herein, an "Event of Default" means the occurrence and continuation of any one of the following events, whatever the reason, and whether it shall be voluntary or involuntary, or effected by operation of law or pursuant to any judgment, decree or order of any court, or any order, rule or regulation of any administrative or governmental body:

(a) The Maker's failure to pay to the Holder any amount of Principal, Interest, or other amounts when and as due under this Note; or

(b) A Conversion Failure as defined in Section 3(d)(ii); or

(c) A material breach by Origin of any material representation, warranty or covenant contained in the Transaction Documents or a material breach by Origin of any material representation, warranty or covenant contained in the Purchase Agreement, that, if capable of cure, is not cured within 30 days from the date such breach has occurred; or

(d) The Maker or any subsidiary of the Maker shall commence, or there shall be commenced against the Maker or any subsidiary of the Maker under any applicable bankruptcy or insolvency laws as now or hereafter in effect or any successor thereto, or the Maker or any subsidiary of the Maker commences any other proceeding under any reorganization, arrangement, adjustment of debt, relief of debtors, dissolution, insolvency or liquidation or similar law of any jurisdiction whether now or hereafter in effect relating to the Maker or any subsidiary of the Maker or there is commenced against the Maker or any subsidiary of the Maker any such bankruptcy, insolvency or other proceeding which remains undismissed for a period of ninety-one (91) days; or the Maker or any subsidiary of the Maker is adjudicated insolvent or bankrupt; or any order of relief or other order approving any such case or proceeding is entered; or the Maker or any subsidiary of the Maker suffers any appointment of any custodian, private or court appointed receiver or the like for it or any substantial part of its property which continues undischarged or unstayed for a period of ninety-one (91) days; or the Maker or any subsidiary of the Maker makes a general assignment for the benefit of creditors; or the Maker or any subsidiary of the Maker shall fail to pay, or shall state that it is unable to pay, or shall be unable to pay, its debts generally as they become due; or the Maker or any subsidiary of the Maker shall call a meeting of its creditors with a view to arranging a composition, adjustment or restructuring of its debts; or the Maker or any subsidiary of the Maker shall by any act or failure to act expressly indicate its consent to, approval of or acquiescence in any of the foregoing; or any corporate or other action is taken by the Maker or any subsidiary of the Maker for the purpose of effecting any of the foregoing.

3. CONVERSION OF NOTE. This Note shall be convertible into shares of Common Stock, on the terms and conditions set forth in this Section 3.

(a) Certain Definitions. As used in this Note, the following capitalized terms shall have the meaning set forth below:

(i) "Alternative Liquidity Event" shall mean any one of a Sale of Control, a SPAC Acquisition, or a Reverse Merger.

(ii) "Alternative Liquidity Event Conversion Price" shall mean a conversion price that is equal to 50% of the aggregate "Transaction Consideration" (as defined) divided by the total number of outstanding shares of common stock of the acquiror resulting from a Sale of Control, the merger with a SPAC or the successor in interest "Pubco" (as defined) in connection with a Reverse Merger.

(iii) "Common Stock" shall mean, as applicable, the individual or collective reference to the Common stock, $0.01 par value per share, of the Maker or the common stock of any acquiror in a Sale of Control, SPAC or Pubco resulting from a Sale of Control, SPAC Acquisition or Reverse Merger.

(iv) "Conversion Shares" shall mean the aggregate number of shares of Common Stock of the Maker, the Acquiror in a Sale of Control the SPAC or Pubco, as applicable (each an "Issuer") that are issuable to the Holder in connection with any mandatory conversion (set forth in Section 3(b)) or optional conversion (set forth in Section 3(c)) of this Note.

(v) "IPO" shall mean an initial, "firm commitment" public offering of Common Stock of the Maker pursuant to a registration statement on Form S-1 that is declared effective by the Securities and Exchange Commission.

(vi) "IPO Conversion Price" shall mean a conversion price equal to 50% of the initial public offering price per share of the Common Stock offered to the public in the IPO.

(vii) "Liquidity Event" shall mean any one of an IPO, a Sale of Control, a SPAC Acquisition or a Reverse Merger.

(viii) "National Securities Exchange" shall mean any tier of the Nasdaq Stock Market, the New York Stock Exchange or the NYSE American market.

(ix) "Preferred Stock" means the outstanding shares of preferred stock of the Maker as described in the Executive Summary.

(x) "Pubco" means a fully-reporting public corporation under the Securities Exchange Act of 1934, as amended, that does not have any significant business activities and is trading on a National Securities Exchange or the OTCQX platform of the OTC Market.

(xi) "Reverse Merger" means a merger of the Maker with or the acquisition of the Maker by Pubco, as a result of which such transaction, the stockholders of the Maker will own a substantial majority of the equity securities of Pubco.

(xii) "Sale of Control" shall mean a sale of all or substantially as of the capital stock or assets of the Company to any unaffiliated third Person, whether through share sale, asset sale, merger, consolidation or like combination, as a result of which the ability to control the board of directors of the Company shall pass to such third Person.

(xiii) "SPAC" means a special purpose acquisition corporation whose securities are listed on National Securities Exchange.

(xiv) "SPAC Acquisition" means a merger of the Maker with or the acquisition of the Maker by a SPAC or its subsidiary, as a result of which such transaction, the stockholders of the Maker will own a majority of the equity securities of the SPAC.

(xv) "Transaction Consideration" shall mean the dollar value placed on the total consideration paid to the Company or its stockholders in connection with a Liquidity Event including, but not limited to, (i) the value of the consideration whether in cash, stock or in-kind, received by and/or paid by the Company or its stockholders, (ii) the total amount of indebtedness for borrowed funds, capitalized lease obligations and non-trade liabilities of the Company that are either assumed by the acquirer, redeemed or otherwise satisfied in connection with the transaction, or which remain outstanding after the transaction is consummated; (iii) the fair market value of any assets excluded from the transaction; (iv) the fair market value of any ownership interests which are retained by the Company's stockholders or which remain outstanding after the transaction is consummated.

(b) Mandatory Conversion. In the event that prior to the Maturity Date of this Note, the Maker shall consummate an IPO and its Common Stock shall be approved for listing or trading on any Qualified Securities Market, the entire Outstanding Balance of this Note shall ***automatically***, and without any further consent or approval of the Holder, be converted into Common Stock of the Maker at the IPO Conversion Price. In the event that prior to the Maturity Date, the Maker shall consummate an Alternative Liquidity Event, the Holder may elect at his or its option to convert the outstanding and unpaid Outstanding Balance of this Note into Common Stock of the

Maker at the Alternative Liquidity Event Conversion Price. The IPO Conversion Price and the Alternative Liquidity Event Conversion Price (either, the "Mandatory Conversion Price") shall be subject to adjustment, as provided for in Section 3(f) below.

(c) Optional Conversion Upon Private Placement. In the event that the Company shall elect to raise additional capital prior to the IPO or a Liquidity Event (and, for the avoidance of doubt, prior to repayment of this Note) through a private placement of Common Stock or other securities that are convertible or exercisable into Common Stock (a "Private Placement"), the Holder shall have the option to convert the outstanding and unpaid Outstanding Balance into shares of Common Stock at a conversion price equal to 50% of price per share of the securities offered to investors in the Private Placement. The Company's notice to Investors of their Participation Right (as defined in the Subscription Agreement) in such Private Placement shall serve as notice of the Investors' right (which shall be exercisable upon no greater than twenty (20) days' notice to the Company) to convert the Outstanding Balance as provided for in this Section 3(c). If the issuance in connection with such conversion would result in the issuance of a fraction of a share of Common Stock, Origin shall round such fraction of a share of Common Stock up to the nearest whole share.

(d) Mechanics of Conversion.

(i) Optional Conversion. To convert the Note pursuant to an optional conversion into shares of Common Stock as provided for in Section 3(c), the Holder shall (A) transmit by email, facsimile (or otherwise deliver), for receipt on or prior to 11:59 p.m., New York, NY Time, a copy of an executed notice of conversion in the form attached hereto as Exhibit A (the "Conversion Notice") to Origin. On or before the twentieth (20th) day following the date of receipt of a Conversion Notice (the "Share Delivery Date"), Origin shall (A) if legends are not required to be placed on certificates of Common Stock pursuant to the then existing provisions of Rule 144 of the Securities Act of 1933 ("Rule 144") and provided that the Transfer Agent is participating in the Depository Trust Company ("DTC") Fast Automated Securities Transfer Program, credit such aggregate number of shares of Common Stock to which the Holder shall be entitled to the Holder's or its designee's balance account with DTC through its Deposit Withdrawal Agent Commission system or (B) if the Transfer Agent is not participating in the DTC Fast Automated Securities Transfer Program, issue and deliver to the address as specified in the Conversion Notice, a certificate, registered in the name of the Holder or its designee, for the number of shares of Common Stock to which the Holder shall be entitled which certificates shall not bear any restrictive legends unless required pursuant the Securities Act. The Person or Persons entitled to receive the shares of Common Stock issuable upon a conversion of this Note shall be treated for all purposes as the record holder or holders of such shares of Common Stock upon the transmission of a Conversion Notice.

(ii) Failure to Timely Affect Conversion. If within twenty (20) business days after (A) a Liquidity Event or (B) in the case of an optional conversion, Origin's receipt of the facsimile or email copy of a Conversion Notice together with documentation satisfactory to the Transfer Agent that the Conversion Shares are eligible for such electronic issuance, the Issuer shall fail to issue and deliver to Holder via "DWAC/FAST" electronic transfer (assuming that such shares are "DWAC/FAST" eligible, and if not, delivery shall be permitted by certificate or book entry notation) the number of Conversion Shares to which the Holder is entitled upon such holder's conversion of any Conversion Shares (a "Conversion Failure"), the Outstanding Balance of the Note shall increase by 0.05% per day until such time as the Issuer issues and delivers the Conversion Shares via a certificate (or book entry notation) to the Holder or (if applicable) credit the Holder's balance account with DTC for the number of Conversion Shares to which the Holder is entitled upon such mandatory or optional conversion. The Issuer of the Conversion Shares will not be subject to any penalties once its transfer agent processes the shares to the DWAC system. If the Issuer fails to deliver shares in accordance with the timeframe stated in this Section, resulting in a Conversion Failure, the Holder, at any time prior to selling all of those Conversion Shares, may rescind any portion, in whole or in part, of that particular conversion attributable to the unsold shares and have the rescinded conversion amount returned to the Outstanding Balance with the rescinded Conversion Shares returned to the applicable Issuer.

(iii) Book-Entry. Notwithstanding anything to the contrary set forth herein, in connection with any optional or mandatory conversion of this Note in accordance with the terms hereof, the Holder shall not be required to physically surrender this Note to Origin unless and until such time as the Holder has converted his or her shares in full. Upon a partial or full conversion, Holder shall receive either (i) one or more stock certificates, or a book entry account statement, evidencing the Conversion Shares (in the event Origin's Common Stock is not yet DTC eligible) or (ii) physical evidence from the Issuer's transfer agent that the Holder's balance account with DTC showing that the Conversion Shares have been credited for the number of Conversion Shares to which the Holder is entitled upon such mandatory or optional conversion. The Holder and the Issuer shall maintain records showing the Outstanding Balance converted and the dates of such conversions or shall use such other method reasonably satisfactory to the Holder and Issuer, so as not to require physical surrender of this Note upon conversion, unless so requested by Origin.

(e) Limitations on Conversions or Trading. If at any time after the Closing, the Holder shall or would receive Conversion Shares or shall purchase additional shares of Common Stock of an Issuer, so that the Holder would, together with other shares of Common Stock held by it or its Affiliates, own or beneficially own by virtue of such action or receipt of additional shares of Common Stock a number of shares exceeding 4.99% of the number of shares of Common Stock outstanding on such date (the "Maximum Percentage"), the Issuer shall not be obligated and shall not issue to the Holder Conversion Shares which would exceed the Maximum Percentage, but only until such time as the Maximum Percentage would no longer be exceeded by any such receipt of shares of Common Stock by the Holder. Upon delivery of a written notice to the applicable Issuer the Holder may from time to time increase (with such increase not effective until the sixty-first (61st) day after delivery of such notice) or decrease the Maximum Percentage to any other percentage not in excess of 4.99% as specified in such notice; provided that (i) any such increase in the Maximum Percentage will not be effective until the sixty-first (61st) day after such notice is delivered to Origin and (ii) any such increase or decrease will apply only to the Holder and its Affiliates. The provisions of this paragraph shall be construed and implemented in a manner otherwise than in strict conformity with the terms of this Section 3(e) to the extent necessary to correct this paragraph (or any portion of this paragraph) which may be defective or inconsistent with the intended beneficial ownership limitation contained in this Section 3(e) or to make changes or supplements necessary or desirable to properly give effect to such limitation. The limitation contained in this paragraph may not be waived and shall apply to a successor holder of the Note.

(f) Reserved.

(g) Other Provisions.

(i) Share Reservation. Origin shall at all times reserve and keep available out of its authorized Common Stock a number of shares equal to at least the full number of shares of Common Stock issuable upon conversion of all outstanding amounts under this Note.

(ii) Prepayment. This Note may not be prepaid by Origin until August 15, 2022. Thereafter, the Note may either be prepaid by the Company in whole or in part without penalty, fees or premium upon not less than fifteen (15) days prior written notice to the Holder (the "Prepayment Notice") which shall set forth the date on which the Note shall be prepaid (the "Prepayment Date").

(iii) All calculations under this Section 3 shall be rounded up to the nearest whole share.

(iv) Nothing herein shall limit a Holder's right to pursue actual damages or declare an Event of Default pursuant to Section 2 herein for Origin's failure to deliver certificates or credit entries representing shares of Common Stock upon conversion within the period specified herein and such Holder shall have the right to pursue all remedies available to it at law or in equity including, without limitation, a decree of specific performance and/or injunctive relief, in each case without the need to post a bond or provide other security. The exercise of any such rights shall not prohibit the Holder from seeking to enforce damages pursuant to any other Section hereof or under applicable law.

(v) The Maker shall use its commercially reasonable efforts to assist the Holder to obtain a legal opinion for the removal of any restrict legend in connection with any shares converted from this Note.

(vi) Origin shall pay any and all transfer agent fees, Origin's own legal fees (including for the provision of customary legal opinions), and any other customary fees or costs that may be incurred or charged in connection with the issuance and legend removal of shares of Common Stock to the Holder arising out of or relating to the conversion of this Note; provided, that Origin shall not be responsible for any of Holder's fees and expenses (including legal fees and expenses) voluntarily incurred by Holder in connection with such conversion..

4. REISSUANCE OF THIS NOTE. Upon receipt by the Maker of evidence reasonably satisfactory to the Maker of the loss, theft, destruction or mutilation of this Note, and, in the case of loss, theft or destruction, of any indemnification undertaking by the Holder

to the Maker in customary form and, in the case of mutilation, upon surrender and cancellation of this Note, the Maker shall execute and deliver to the Holder a new Note representing the outstanding Principal.

5. NOTICES. Any notices, consents, waivers or other communications required or permitted to be given under the terms shall be handled according to the Notice clause in the Subscription Agreement.

6. APPLICABLE LAW AND VENUE. This Note shall be governed by and construed in accordance with the laws of the State of New York, without giving effect to conflicts of laws thereof. Any action brought by either party against the other concerning the transactions contemplated by this Agreement shall be brought only in the state courts of New York or in the federal courts located in New York County, in the State of New York. Origin and the Holder (by its acceptance hereof, agree to submit to the jurisdiction of such courts.

7. WAIVER. Any waiver by the Holder of a breach of any provision of this Note shall not operate as or be construed to be a waiver of any other breach of such provision or of any breach of any other provision of this Note. The failure of the Holder to insist upon strict adherence to any term of this Note on one or more occasions shall not be considered a waiver or deprive that party of the right thereafter to insist upon strict adherence to that term or any other term of this Note. Any waiver must be in writing.

8. MISCELLANEOUS

(a) Lawful Money; Costs of Collection. All amounts payable hereunder are payable in lawful money of the United States. Origin agrees to pay all costs of collection when incurred, including reasonable attorneys' fees and costs, whether or not a suit or action is instituted to enforce this Note, including but not limited to court costs, appraisal fees, the cost of searching records, obtaining title reports and title insurance and trustee's fees, to the extent permitted by applicable law.

(b) No Offset; Holder in Due Course. All payments under this Note made by or on behalf of Origin shall be made without setoff or counterclaim and free and clear of, and without deduction or withholding for or on account of, any federal, state, or local taxes. Origin waives any right of offset it now has or may hereafter have against Agent or Holder and its successors and assigns as to this Note (but retains any such rights as to any other prior or future transaction between these parties), and agrees to make the payments called for hereunder in accordance with the terms hereof.

(c) Waivers. Origin and any endorsers, guarantors or sureties hereof severally waive presentment and demand for payment, notice of intent to accelerate maturity, protest or notice of protest or non- payment, bringing of suit and diligence in taking any action to collect any sums owing hereunder or in proceeding against any of the rights and properties securing payment hereunder; expressly agree that this Note, or any payment hereunder, may be extended from time to time; and consent to the acceptance of further security or the release of any security for this Note, all without in any way affecting the liability of Origin and any endorsers or guarantors hereof. No extension of time for the payment of this Note, or any installment hereof, made by agreement by the holder hereof with any person now or hereafter liable for the payment of this Note, shall affect the original liability under this Note of Origin, even if Origin (or any entity comprising Origin) is not a party to such agreement.

(d) Usury Protection. The parties hereto intend to conform strictly to the applicable usury laws. In no event, regardless of any provisions contained therein or in any other document executed or delivered in connection herewith, shall the holder hereof ever be deemed to have contracted for or be entitled to receive, collect or apply as interest on this Note, any amount in excess of the maximum amount permitted by New York law (the "Maximum Rate"). In no event, whether by reason of demand for payment, prepayment, acceleration of the maturity hereof or otherwise, shall the interest contracted for, charged or received by the holder hereunder or otherwise exceed the Maximum Rate. If for any circumstance whatsoever interest would otherwise be payable to the holder in excess of the maximum lawful amount, the interest payable to the holder shall be reduced automatically to the Maximum Rate and any payment received in excess of such amount shall be applied to the outstanding principal balance of the Note.

(e) Entire Agreement; Amendments; Interpretation. This Note, the other Transaction Documents, and all other documents and instruments contemplated hereby and thereby together constitute the entire agreement between and among the parties pertaining to the subject matter hereof. No supplement, modification or amendment of this Note or any other Transaction Document shall be binding unless executed in writing by Origin and the holders of in excess of fifty percent (50%) of the outstanding aggregate principal amount under all notes sold in the offering contemplated by the Transaction Documents (the "Requisite Holders"). No waiver shall be

binding unless executed in writing by Origin, on the one hand, and the Requisite Holders, on the other hand . No provision of this Note shall be interpreted for or against the drafting party.

(f) Commercial Purpose. Origin agrees that no funds advanced under this Note shall be used for personal, family or household purposes, and that all funds advanced hereunder shall be used solely for business, commercial, investment or other similar purposes.

(g) Successors and Assigns. All the terms and provisions of this Note shall be binding upon and inure to the benefit of the parties to this Note and their respective successors and assigns.

(h) Assignment. Origin may not, voluntarily or involuntarily, directly or indirectly, by operation of law or otherwise, sell, transfer, assign, hypothecate, pledge or in any way alienate this Note or any right or interest in this Note (each a "Transfer") without the prior written consent of the Requisite Holders, which consent may be withheld in the sole and absolute discretion of any Holder. Any consent by the Requisite Holders to any Transfer shall not constitute consent to any other Transfer. Subject to compliance with applicable securities laws, Holder may freely Transfer its interest, rights, or title in or to this Note or the other Transaction Documents in Holder's sole and absolute discretion; provided, however, that no such Transfer shall be permitted to any person or entity who, directly or indirectly, competes with the business of Origin.

(i) Construction. Whenever used in this Note, the terms "including," "include," "includes" and the like are not intended as terms of limitation, and, hence, shall be deemed to be followed by "without limitation."

(j) Severability. If any provision of this Note, as applied to any party or to any circumstance, shall be found by a court of competent jurisdiction to be void, invalid or unenforceable, the same shall in no way affect any other provision of this Note, the application of any such provision in any other circumstance, or the validity or enforceability of this Note, and any provision which is found to be void, invalid or unenforceable shall be curtailed and limited only to the extent necessary to bring such provision within the requirements of the law.

(k) Survival of Terms. The terms and provisions of this Note shall survive the Maturity Date until full payment of all amounts due hereunder.

(l) Preferential Payment. If at any time any payment made pursuant to this Note is deemed to have been a voidable preference, fraudulent conveyance or other similar conveyance or preferential payment under any bankruptcy, insolvency or other debtor relief or similar law, then the obligation to make such payment shall survive any cancellation or satisfaction of this Note or return of this Note to Origin and shall not be discharged or satisfied with any such payment or cancellation. Such payment shall instead remain a valid and binding obligation enforceable in accordance with the terms of this Note and shall be immediately due and payable.

(m) Relief From Stay. As an additional inducement to and material consideration for Holder agreeing to execute this this Note and the other Transaction Documents, Origin agrees that in the event a Bankruptcy or Judicial Action (as hereinafter defined in this Section 8(n)) is commenced which subjects Holder to any stay in the exercise of Holder's rights and remedies under this Note or the other Transaction Documents, including, but not limited to, the automatic stay imposed by Section 362 of the United States Bankruptcy Code (individually and collectively, "Stay"), then Origin irrevocably consents and agrees that such Stay shall automatically be lifted and released against Holder, and Holder shall thereafter be entitled to exercise all of its rights and remedies against Origin that is or could be subject any Stay under this Note or the other Transaction Documents. Nothing contained herein shall limit or prevent Holder from exercising all of its rights and remedies against Origin that is not the subject any Stay under this Note or the other Transaction Documents. Origin acknowledges that it is knowingly, voluntarily, and intentionally waiving its rights to any Stay and agrees that the benefits provided to Origin under the terms of this Note are valuable consideration for such waiver. As used in this Section 8(n), the term "Bankruptcy or Judicial Action" shall mean any voluntary or involuntary case filed by or against a Origin under the United States Bankruptcy Code, or any voluntary or involuntary petition in composition, readjustment, liquidation, or dissolution, or any state and federal bankruptcy law action filed by or against a Origin, any action where a Origin is adjudicated as bankrupt or insolvent, any action for dissolution of a Origin, or any action in furtherance of any of the foregoing, or any other action, case, or proceeding that has the effect of staying (or in which a stay is being obtained against) the enforcement by Holder of its rights and remedies under the this Note or the other Transaction Documents.

Except to enforce the terms of the Transaction Documents, Origin shall not take any action and shall not fail to take any action which such action or omission will or might tend to interfere with, delay, enjoin or otherwise prohibit the commencement, continuation or completion of efforts by Holder to enforce its remedies under this Note or the other Transaction Documents, or applicable law. Without limiting the generality of the foregoing and except to enforce the terms of the Transaction Documents, Origin waives its, his, or her rights, if any, to seek or obtain a stay, injunction or other form of order prohibiting in any way any act necessary or appropriate for the commencement or completion of Holder's enforcement of its remedies under the this Note or the other Transaction Documents, or applicable law (without limiting the generality of the foregoing, such waiver extends to such rights which may exist under any statute or rule relating to bankruptcy cases, including, without limitation, 11 U.S.C. § 105, 11 U.S.C. § 301, 11 U.S.C. § 302, 11 U.S.C. § 303, 11 U.S.C. § 304, 11 U.S.C. § 362, 11 U.S.C. § 348, 11 U.S.C. § 706, 28 U.S.C. § 157, 28 U.S.C. § 158, Federal Rule of bankruptcy Procedure ("FRBP") 3007, FRBP 3008, FRBP 3012, FRBP 8005, FRBP 9023, FRBP 9024, or FRBP 9029).

9. WAIVER OF RIGHT TO TRIAL BY JURY. EACH PARTY TO THIS NOTE HEREBY EXPRESSLY WAIVES ANY RIGHT TO TRIAL BY JURY OF ANY CLAIM, DEMAND, ACTION, OR CAUSE OF ACTION (1) ARISING UNDER THIS NOTE, THE OTHER TRANSACTION DOCUMENTS, OR ANY OTHER INSTRUMENT, DOCUMENT, OR AGREEMENT EXECUTED OR DELIVERED IN CONNECTION THEREWITH, OR (2) IN ANY WAY CONNECTED WITH OR RELATED OR INCIDENTAL TO THE DEALINGS OF THE PARTIES HERETO OR ANY OF THEM WITH RESPECT TO THIS NOTE OR ANY OTHER INSTRUMENT, DOCUMENT, OR AGREEMENT EXECUTED OR DELIVERED IN CONNECTION HEREWITH, OR THE TRANSACTIONS RELATED HERETO OR THERETO, IN EACH CASE WHETHER NOW EXISTING OR HEREAFTER ARISING, AND WHETHER SOUNDING IN CONTRACT OR TORT OR OTHERWISE; AND EACH PARTY HEREBY AGREES AND CONSENTS THAT ANY SUCH CLAIM, DEMAND, ACTION, OR CAUSE OF ACTION SHALL BE DECIDED BY COURT TRIAL WITHOUT A JURY. THE PARTIES HERETO HEREBY AGREE THAT THE PROVISIONS CONTAINED HEREIN HAVE BEEN FAIRLY NEGOTIATED ON AN ARM'S-LENGTH BASIS, WITH BOTH SIDES AGREEING TO THE SAME KNOWINGLY AND BEING AFFORDED THE OPPORTUNITY TO HAVE THEIR RESPECTIVE LEGAL COUNSEL CONSENT TO THE MATTERS CONTAINED HEREIN. ANY PARTY TO THIS NOTE MAY FILE AN ORIGINAL COUNTERPART OR A COPY OF THIS SECTION WITH ANY COURT AS WRITTEN EVIDENCE OF THE CONSENT OF THE PARTIES HERETO TO THE WAIVER OF THEIR RIGHT TO TRIAL BY JURY AND THE AGREEMENTS CONTAINED HEREIN REGARDING THE APPLICATION OF JUDICIAL REFERENCE IN THE EVENT OF THE INVALIDITY OF SUCH JURY TRIAL WAIVER.

IN WITNESS WHEREOF, each of the Maker has caused this Note to be duly executed by a duly authorized officer as of the date set forth above.

ORIGIN, INC.

By: /s/ Johnny Fernandes
Name: Johnny Fernandes
Title: CFO

SCHEDULE OF NOTES

Note No.	Note Issuance Date	Principal Amount of Note	Maturity Date
1	June 30, 2022	$ 100,000.00	June 30, 2025
2	June 30, 2022	$ 100,000.00	June 30, 2025
3	June 30, 2022	$ 100,000.00	June 30, 2025
4	June 30, 2022	$ 100,000.00	June 30, 2025
5	June 30, 2022	$ 50,000.00	June 30, 2025

6	August 16, 2022	$ 25,000.00	August 16, 2025
7	August 16, 2022	$ 25,000.00	August 16, 2025
8	August 16, 2022	$ 10,000.00	August 16, 2025
9	September 23, 2022	$ 20,000.00	September 23, 2025
10	September 23, 2022	$ 25,000.00	September 23, 2025
11	September 23, 2022	$ 50,000.00	September 23, 2025
12	September 23, 2022	$ 150,000.00	September 23, 2025
13	September 23, 2022	$ 10,000.00	September 23, 2025
14	September 23, 2022	$ 50,000.00	September 23, 2025
15	September 23, 2022	$ 40,000.00	September 23, 2025
16	September 23, 2022	$ 100,000.00	September 23, 2025
17	September 23, 2022	$ 25,000.00	September 23, 2025
18	September 23, 2022	$ 125,000.00	September 23, 2025
19	September 23, 2022	$ 30,000.00	September 23, 2025
20	September 23, 2022	$ 100,000.00	September 23, 2025
21	October 25, 2022	$ 20,000.00	October 25, 2025
22	October 25, 2022	$ 15,000.00	October 25, 2025
23	October 25, 2022	$ 25,000.00	October 25, 2025
24	October 25, 2022	$ 75,000.00	October 25, 2025
25	October 25, 2022	$ 20,000.00	October 25, 2025
26	October 25, 2022	$ 25,000.00	October 25, 2025
27	October 25, 2022	$ 50,000.00	October 25, 2025
28	October 25, 2022	$ 40,000.00	October 25, 2025
29	October 25, 2022	$ 25,000.00	October 25, 2025
30	October 25, 2022	$ 20,000.00	October 25, 2025
31	November 30, 2022	$ 100,000.00	November 30, 2025
32	November 30, 2022	$ 20,000.00	November 30, 2025
33	November 30, 2022	$ 25,000.00	November 30, 2025
34	November 30, 2022	$ 25,000.00	November 30, 2025
35	November 30, 2022	$ 50,000.00	November 30, 2025
36	November 30, 2022	$ 25,000.00	November 30, 2025
37	November 30, 2022	$ 18,000.00	November 30, 2025
38	November 30, 2022	$ 25,000.00	November 30, 2025
39	December 21, 2022	$ 101,749.70	December 21, 2025

Exhibit 4.4

THESE WARRANTS AND ANY SHARES ACQUIRED UPON THE EXERCISE HEREOF HAVE NOT BEEN REGISTERED UNDER THE UNITED STATES SECURITIES ACT OF 1933, AS AMENDED, OR UNDER ANY APPLICABLE STATE SECURITIES LAWS. THESE WARRANTS AND SUCH SHARES AND ANY INTEREST OR PARTICIPATION HEREIN OR THEREIN MAY NOT BE SOLD OR TRANSFERRED IN THE ABSENCE OF SUCH REGISTRATION OR AN EXEMPTION THEREFROM UNDER SUCH ACT AND UNDER ANY APPLICABLE STATE SECURITIES LAWS. THESE WARRANTS AND SUCH SHARES MAY NOT BE EXERCISED OR TRANSFERRED EXCEPT UPON THE CONDITIONS SPECIFIED IN THIS WARRANT CERTIFICATE, AND NO EXERCISE OR TRANSFER OF THESE WARRANTS OR TRANSFER OF SUCH SHARES SHALL BE VALID OR EFFECTIVE UNLESS AND UNTIL SUCH CONDITIONS SHALL HAVE BEEN COMPLIED WITH.

ORIGIN, INC.

WARRANT TO PURCHASE COMMON STOCK

Warrant No.: PA-
Date of Issuance: _____ ("**Issuance Date**")

Origin, Inc., a Delaware corporation (the "**Company**"), hereby certifies that, for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, **Boustead Securities, LLC**, the registered holder hereof or its permitted assigns (the "**Holder**"), is entitled, subject to the terms set forth below, to purchase from the Company, at the Exercise Price (as defined below) then in effect, Company common stock, par value $0.01 ("**Common Stock**") (including any Warrants to purchase shares issued in exchange, transfer or replacement hereof, the "**Warrant**"), at any time or times on or after the date hereof but not after 11:59 p.m., Eastern Time, on the Expiration Date (as defined below), such number (subject to adjustment as provided herein) of fully paid and non-assessable shares of Common Stock equal to seven percent (7%**)** of the shares of Company common stock into which the Company's Convertible Notes dated _____ in the principal amount of $_____ (the "**Notes**") converts into (the "**Warrant Shares**").

1. EXERCISE OF WARRANT.

(a) Mechanics of Exercise. Subject to the terms and conditions hereof, this Warrant may be exercised by the Holder on any day on or after the date hereof, in whole or in part, by delivery (whether via facsimile, email, or otherwise) of a written notice, in the form attached hereto as **Exhibit A** (the "**Exercise Notice**"), of the Holder's election to exercise this Warrant, by submitting information including the then-applicable Exercise Price, number of Warrant Shares purchased equal to or lower than the then-applicable number of Warrant Shares and the FMV (collectively, the "**Exercise Information**"). Within one (1) Trading Day following an exercise of this Warrant as aforesaid, the Holder shall deliver payment to the Company of an amount equal to the Exercise Price in effect on the date of such exercise multiplied by the number of Warrant Shares as to which this Warrant was so exercised (the "**Aggregate Exercise Price**") in cash or via wire transfer of immediately available funds if, subject to the provisions of Section 1(d), the Holder has not notified the Company in such Exercise Notice that such exercise is made pursuant to a Cashless Exercise (as defined in Section 1(d)) at a time and under circumstances which permit a Cashless Exercise. The Holder shall not be required to deliver the original of this Warrant in order to effect an exercise hereunder. Execution and delivery of an Exercise Notice with respect to less than all of the Warrant Shares shall have the same effect as cancellation of the original of this Warrant and issuance of a new Warrant evidencing the right to purchase the remaining number of Warrant Shares. Execution and delivery of an Exercise Notice for all of the then-remaining Warrant Shares shall have the same effect as cancellation of the original of this Warrant after delivery of the Warrant Shares in accordance with the terms hereof. On or before the first (1st) Trading Day following the date on which the Company has received an Exercise Notice, upon checking that the Exercise Information supplied by the Holder is accurate, the Company shall transmit by facsimile or email an acknowledgment of confirmation of receipt of such Exercise Notice, in the form attached hereto as **Exhibit B**, to the Holder and the Company's transfer agent (the "**Transfer Agent**"). On or before the third (3rd) Trading Day following the date on which the Company has received such Exercise Notice and, in the event that the Holder has chosen to exercise in cash, the receipt of the payment of the Aggregate Exercise Price, the Company shall instruct the Transfer Agent to issue to the Holder the number of Warrant Shares to which the Holder is entitled pursuant to such exercise and to, at the sole direction of the Holder pursuant to the Exercise Notice, hold such Warrant Shares in electronic form at the Transfer Agent registered in the Company's share register in the name of the Holder or its designee (as indicated in the applicable Exercise Notice), or mail to the Holder or, at the Holder's instruction pursuant to the Exercise Notice, the Holder's agent or designee, in

each case, sent by reputable overnight courier to the address as specified in the applicable Exercise Notice, a certificate, registered in the Company's share register in the name of the Holder or its designee (as indicated in the applicable Exercise Notice). Upon delivery of an Exercise Notice and in the event that the Holder has chosen to exercise in cash, the Company's receipt of the payment of the Aggregate Exercise Price, the Holder shall be deemed for all corporate purposes to have become the holder of record of the Warrant Shares with respect to which this Warrant has been exercised, irrespective of the date of delivery of the certificates evidencing such Warrant Shares (as the case may be). If this Warrant is submitted in connection with any exercise pursuant to this Section 1(a) and the total number of Warrant Shares represented by this Warrant is greater than the number of Warrant Shares being acquired by the Holder upon an exercise, then, at the request of the Holder, the Company shall as soon as practicable and in no event later than three (3) Business Days after any exercise and at its own expense, issue and deliver to the Holder (or its designee) a new Warrant (in accordance with Section 7(d)) representing the right to purchase the number of Warrant Shares purchasable immediately prior to such exercise under this Warrant, less the number of Warrant Shares with respect to which this Warrant is exercised. No fractional Warrant Shares are to be issued upon the exercise of this Warrant, but rather the number of Warrant Shares to be issued shall be rounded up to the nearest whole number. The Company will from time to time promptly pay all taxes and charges that may be imposed upon the Company in respect of the issuance or delivery of Warrant Shares upon the exercise of this Warrant, but the Company shall not be obligated to pay any transfer taxes in respect of this Warrant or such shares.

(b) Exercise Price. For purposes of this Warrant, "**Exercise Price**" initially means the price at which the Notes convert to Common Stock, subject to further adjustment as provided herein.

(c) Company's Failure to Timely Deliver Securities. If the Company shall fail, for any reason or for no reason, to issue to the Holder within three (3) Trading Days after receipt of the applicable Exercise Notice, a certificate for the number of Warrant Shares to which the Holder is entitled and register such Warrant Shares on the Company's share register, the Holder will have the right to rescind such exercise. In addition to any other rights available to the Holder, if the Company shall fail, for any reason or for no reason, to issue to the Holder within three (3) Trading Days after receipt of the applicable Exercise Notice, a certificate for the number of Warrant Shares to which the Holder is entitled and register such Warrant Shares on the Company's share register and if on or after such third (3rd) Trading Day the Holder (or any other Person in respect, or on behalf, of the Holder) purchases (in an open market transaction or otherwise) Common Stock to deliver in satisfaction of a sale by the Holder of all or any portion of the number of Warrant Shares, or a sale of a number of Warrant Shares equal to all or any portion of the number of Warrant Shares, issuable upon such exercise that the Holder so anticipated receiving from the Company, then, in addition to all other remedies available to the Holder, the Company shall, within three (3) Business Days after the Holder's request and in the Holder's discretion, either (i) pay cash to the Holder in an amount equal to the Holder's total purchase price (including reasonable brokerage commissions and other reasonable out-of-pocket expenses, if any) for the Warrant Shares so purchased (including, without limitation, by any other Person in respect, or on behalf, of the Holder) (the "**Buy-In Price**"), at which point the Company's obligation to so issue and deliver such certificate or credit the Holder's balance account with DTC for the number of Warrant Shares to which the Holder is entitled upon the Holder's exercise hereunder (as the case may be) (and to issue such Warrant Shares) shall terminate, or (ii) promptly honor its obligation to so issue and deliver to the Holder a certificate or certificates representing such Warrant Shares or credit the Holder's balance account with DTC for the number of Warrant Shares to which the Holder is entitled upon the Holder's exercise hereunder (as the case may be) and pay cash to the Holder in an amount equal to the excess (if any) of the Buy-In Price over the product of (A) such number of Warrant Shares multiplied by (B) the lowest Closing Sale Price of the Common Stock on any Trading Day during the period commencing on the date of the applicable Exercise Notice and ending on the date of such issuance and payment under this clause (ii).

(d) Cashless Exercise. Notwithstanding anything contained herein to the contrary, the Holder may, in its sole discretion, exercise this Warrant in whole or in part and, in lieu of making the cash payment otherwise contemplated to be made to the Company upon such exercise in payment of the Aggregate Exercise Price, elect instead to receive upon such exercise the "Net Number" of Warrant Shares determined according to the following formula (a "**Cashless Exercise**"), provided that the Holder may elect to cashless exercise pursuant to this Section 1(d) only if B as set forth in the following formula is higher than C as set forth in the following formula:

$$\text{Net Number} = \frac{(A \times B) - (A \times C)}{B}$$

For purposes of the foregoing formula:

A= the total number of shares with respect to which this Warrant is then being exercised.

B= the FMV

C= the Exercise Price then in effect for the applicable Warrant Shares at the time of such exercise.

(e) Disputes. In the case of a dispute as to the determination of the Exercise Price or the arithmetic calculation of the number of Warrant Shares to be issued pursuant to the terms hereof, the Company shall promptly issue to the Holder the number of Warrant Shares that are not disputed and resolve such dispute in accordance with Section 14.

(f) Intentionally Left Blank.

(g) Insufficient Authorized Shares. The Company shall at all times keep reserved for issuance under this Warrant a number of shares of Common Stock as shall be necessary to satisfy the Company's obligation to issue Warrant Shares hereunder (without regard to any limitation otherwise contained herein with respect to the number of Warrant Shares that may be acquirable upon exercise of this Warrant). If, notwithstanding the foregoing, and not in limitation thereof, at any time while the Warrant remains outstanding the Company does not have a sufficient number of authorized and unreserved shares of Common Stock to satisfy its obligation to reserve for issuance upon exercise of the Warrant at least a number of shares of Common Stock equal to the number of shares of Common Stock as shall from time to time be necessary to effect the exercise of the Warrant then outstanding (the "**Required Reserve Amount**") (an "**Authorized Share Failure**"), then the Company shall immediately take all action necessary to increase the Company's authorized shares of Common Stock to an amount sufficient to allow the Company to reserve the Required Reserve Amount for the Warrant then outstanding. Without limiting the generality of the foregoing sentence, as soon as practicable after the date of the occurrence of an Authorized Share Failure, but in no event later than sixty (60) days after the occurrence of such Authorized Share Failure, the Company shall hold a meeting of its stockholders for the approval of an increase in the number of authorized shares of Common Stock. In connection with such meeting, the Company shall provide each stockholder with a proxy statement and shall use its best efforts to solicit its stockholders' approval of such increase in authorized shares of Common Stock and to cause its board of directors to recommend to the stockholders that they approve such proposal.

2. ADJUSTMENT OF EXERCISE PRICE AND NUMBER OF WARRANT SHARES. The Exercise Price and number of Warrant Shares issuable upon exercise of this Warrant are subject to adjustment from time to time as set forth in this Section 2.

(a) Stock Dividends and Splits. Without limiting any provision of Section 4, if the Company, at any time on or after the date hereof, (i) pays a stock dividend on one or more classes of its then outstanding shares of Common Stock or otherwise makes a distribution on any class of capital stock that is payable in shares of Common Stock, (ii) subdivides (by any stock split, stock dividend, recapitalization or otherwise) one or more classes of its then outstanding shares of Common Stock into a larger number of shares or (iii) combines (by combination, reverse stock split or otherwise) one or more classes of its then outstanding shares of Common Stock into a smaller number of shares, then in each such case the Exercise Price shall be multiplied by a fraction of which the numerator shall be the number of shares of Common Stock outstanding immediately before such event and of which the denominator shall be the number of shares of Common Stock outstanding immediately after such event. Any adjustment made pursuant to clause (i) of this paragraph shall become effective immediately after the record date for the determination of stockholders entitled to receive such dividend or distribution, and any adjustment pursuant to clause (ii) or (iii) of this paragraph shall become effective immediately after the effective date of such subdivision or combination. If any event requiring an adjustment under this paragraph occurs during the period that an Exercise Price is calculated hereunder, then the calculation of such Exercise Price shall be adjusted appropriately to reflect such event.

(b) Intentionally Left Blank.

(c) Number of Warrant Shares. Simultaneously with any adjustment to the Exercise Price pursuant to only paragraph (a) of this Section 2, the number of Warrant Shares that may be purchased upon exercise of this Warrant shall be increased or decreased proportionately, so that after such adjustment the aggregate Exercise Price payable hereunder for the adjusted number of Warrant Shares shall be the same as the aggregate Exercise Price in effect immediately prior to such adjustment (without regard to any limitations on exercise contained herein).

(d) Other Events. In the event that the Company (or any subsidiary) shall take any action to which the provisions hereof are not strictly applicable, or, if applicable, would not operate to protect the Holder from dilution or if any event occurs of the type contemplated by the provisions of this Section 2 but not expressly provided for by such provisions (including, without limitation, the granting of stock appreciation rights, phantom stock rights or other rights with equity features), then the Company's board of directors shall in good faith determine and implement an appropriate adjustment in the Exercise Price and the number of Warrant Shares (if applicable) so as to protect the rights of the Holder, provided that no such adjustment pursuant to this Section 2(d) will increase the Exercise Price or decrease the number of Warrant Shares as otherwise determined pursuant to this Section 2, provided further that if the Holder does not accept such adjustments as appropriately protecting its interests hereunder against such dilution, then the Company's board of directors and the Holder shall agree, in good faith, upon an independent investment bank of nationally recognized standing to make such appropriate adjustments, whose determination shall be final and binding and whose fees and expenses shall be borne by the Company.

(e) Calculations. All calculations under this Section 2 shall be made by rounding to the nearest cent or the nearest 1/100th of a share, as applicable. The number of shares of Common Stock outstanding at any given time shall not include shares owned or held by or for the account of the Company, and the disposition of any such shares shall be considered an issue or sale of Common Stock.

3. RIGHTS UPON DISTRIBUTION OF ASSETS. In addition to any adjustments pursuant to Section 2 above, if the Company shall declare or make any dividend or other distribution of its assets (or rights to acquire its assets) to holders of shares of Common Stock, by way of return of capital or otherwise (including, without limitation, any distribution of cash, stock or other securities, property or options by way of a dividend, spin off, reclassification, corporate rearrangement, scheme of arrangement or other similar transaction) (a "**Distribution**"), at any time after the issuance of this Warrant, then, in each such case, the Holder shall be entitled to participate in such Distribution to the same extent that the Holder would have participated therein if the Holder had held the number of shares of Common Stock acquirable upon a complete exercise of this Warrant (without regard to any limitations on exercise hereof) immediately before the date on which a record is taken for such Distribution, or, if no such record is taken, the date as of which the record holders of shares of Common Stock are to be determined for the participation in such Distribution.

4. PURCHASE RIGHTS; FUNDAMENTAL TRANSACTIONS.

(a) Purchase Rights. In addition to any adjustments pursuant to Section 2 above, if at any time while the Warrant remains outstanding and before the Expiration Date, the Company grants, issues or sells any Options, Convertible Securities or rights to purchase stock, warrants, securities or other property pro rata to the record holders of any class of shares of Common Stock (the "**Purchase Rights**"), then the Holder will be entitled to acquire, upon the terms applicable to such Purchase Rights, the aggregate Purchase Rights which the Holder could have acquired if the Holder had held the number of shares of Common Stock acquirable upon a complete exercise of this Warrant (without regard to any limitations on exercise hereof) immediately before the date on which a record is taken for the grant, issuance or sale of such Purchase Rights, or, if no such record is taken, the date as of which the record holders of shares of Common Stock are to be determined for the grant, issue or sale of such Purchase Rights.

(b) Fundamental Transactions. During the term of this Warrant, the Company shall not enter into or be party to a Fundamental Transaction unless the Successor Entity assumes in writing all of the obligations of the Company under this Warrant in accordance with the provisions of this Section 4(b) pursuant to written agreements in form and substance reasonably satisfactory to the Holder and approved by the Holder prior to such Fundamental Transaction, such approval not to be unreasonably withheld, conditioned or delayed, including agreements to deliver to the Holder in exchange for this Warrant a security of the Successor Entity evidenced by a written instrument substantially similar in form and substance to this Warrant, including, without limitation, which is exercisable for a corresponding number of shares of capital stock equivalent to the shares of Common Stock acquirable and receivable upon exercise of this Warrant (without regard to any limitations on the exercise of this Warrant) prior to such Fundamental Transaction, and with an exercise price which applies the exercise price hereunder to such shares of capital stock (but taking into account the relative value of the shares of Common Stock pursuant to such Fundamental Transaction and the value of such shares of capital stock, such adjustments to the number of shares of capital stock and such exercise price being for the purpose of protecting the economic value of this Warrant immediately prior to the consummation of such Fundamental Transaction). Upon the consummation of each Fundamental Transaction, the Successor Entity shall succeed to, and be substituted for (so that from and after the date of the applicable Fundamental Transaction, the provisions of this Warrant and the other Transaction Documents referring to the "Company" shall refer instead to the Successor Entity), and may exercise every right and power of the Company and shall assume all of the obligations of the Company under this Warrant and the other Transaction Documents with the same effect as if such Successor Entity had been named as the Company herein. Upon consummation of each Fundamental Transaction, the Successor Entity shall deliver to the Holder confirmation that there shall be issued upon exercise of this Warrant at any time after the consummation of the applicable Fundamental Transaction, in lieu of the shares of Common Stock

(or other securities, cash, assets or other property (except such items still issuable under Sections 3 and 4(a) above, which shall continue to be receivable thereafter)) issuable upon the exercise of this Warrant prior to the applicable Fundamental Transaction, such shares of publicly traded Common Stock (or its equivalent) of the Successor Entity (including its Parent Entity) which the Holder would have been entitled to receive upon the happening of the applicable Fundamental Transaction had this Warrant been exercised immediately prior to the applicable Fundamental Transaction (without regard to any limitations on the exercise of this Warrant), as adjusted in accordance with the provisions of this Warrant. Notwithstanding the foregoing, the Holder may elect, at its sole option, by delivery of written notice to the Company to waive this Section 4(b) to permit the Fundamental Transaction without the assumption of this Warrant. In addition to and not in substitution for any other rights hereunder, prior to the consummation of each Fundamental Transaction pursuant to which holders of shares of Common Stock are entitled to receive securities or other assets with respect to or in exchange for shares of Common Stock (a "**Corporate Event**"), the Company shall make appropriate provision to insure that the Holder will thereafter have the right to receive upon an exercise of this Warrant at any time after the consummation of the applicable Fundamental Transaction but prior to the Expiration Date, in lieu of the shares of the Common Stock Shares (or other securities, cash, assets or other property (except such items still issuable under Sections 3 and 4(a) above, which shall continue to be receivable thereafter)) issuable upon the exercise of the Warrant prior to such Fundamental Transaction, such shares of stock, securities, cash, assets or any other property whatsoever (including warrants or other purchase or subscription rights) which the Holder would have been entitled to receive upon the happening of the applicable Fundamental Transaction had this Warrant been exercised immediately prior to the applicable Fundamental Transaction (without regard to any limitations on the exercise of this Warrant). Provision made pursuant to the preceding sentence shall be in a form and substance reasonably satisfactory to the Holder.

Reserved.

(c) Application. The provisions of this Section 4 shall apply similarly and equally to successive Fundamental Transactions and Corporate Events and shall be applied as if this Warrant (and any such subsequent warrants) were fully exercisable and without regard to any limitations on the exercise of this Warrant.

5. NONCIRCUMVENTION. The Company hereby covenants and agrees that the Company will not, by amendment of its certificate of incorporation, bylaws or through any reorganization, transfer of assets, consolidation, merger, scheme of arrangement, dissolution, issue or sale of securities, or any other voluntary action, avoid or seek to avoid the observance or performance of any of the terms of this Warrant, and will at all times in good faith carry out all the provisions of this Warrant and take all action as may be required to protect the rights of the Holder. Without limiting the generality of the foregoing, the Company (a) shall not increase the par value of the Common Stock receivable upon the exercise of this Warrant above the Exercise Price then in effect, (b) shall take all such actions as may be necessary or appropriate in order that the Company may validly and legally issue fully paid and non-assessable shares of Common Stock upon the exercise of this Warrant, and (c) shall, so long as the Warrant is outstanding, take all action necessary to reserve and keep available out of its authorized and unissued shares of Common Stock, solely for the purpose of effecting the exercise of the Warrant, the maximum number of shares of Common Stock as shall from time to time be necessary to effect the exercise of the Warrant then outstanding (without regard to any limitations on exercise).

6. WARRANT HOLDER NOT DEEMED A STOCKHOLDER. Except as otherwise specifically provided herein, the Holder, solely in its capacity as a holder of this Warrant, shall not be entitled to vote or receive dividends or be deemed the holder of share capital of the Company for any purpose, nor shall anything contained in this Warrant be construed to confer upon the Holder, solely in its capacity as the Holder of this Warrant, any of the rights of a stockholder of the Company or any right to vote, give or withhold consent to any corporate action (whether any reorganization, issue of stock, reclassification of stock, consolidation, merger, conveyance or otherwise), receive notice of meetings, receive dividends or subscription rights, or otherwise, prior to the issuance to the Holder of the Warrant Shares which it is then entitled to receive upon the due exercise of this Warrant. In addition, nothing contained in this Warrant shall be construed as imposing any liabilities on the Holder to purchase any securities (upon exercise of this Warrant or otherwise) or as a stockholder of the Company, whether such liabilities are asserted by the Company or by creditors of the Company. Notwithstanding this Section 6, the Company shall provide the Holder with copies of the same notices and other information given to the stockholders of the Company generally, contemporaneously with the giving thereof to the stockholders.

7. REISSUANCE OF WARRANTS.

(a) Transfer of Warrant. If this Warrant is to be transferred, the Holder shall surrender this Warrant to the Company, whereupon the Company will forthwith issue and deliver upon the order of the Holder a new Warrant (in accordance with Section 7(d)), registered as the Holder may request, representing the right to purchase the number of Warrant Shares being transferred by the Holder and, if less than the total number of Warrant Shares then underlying this Warrant is being transferred, a new Warrant (in accordance with Section 7(d)) to the Holder representing the right to purchase the number of Warrant Shares not being transferred.

(b) Lost, Stolen or Mutilated Warrant. Upon receipt by the Company of evidence reasonably satisfactory to the Company of the loss, theft, destruction or mutilation of this Warrant (as to which a written certification and the indemnification contemplated below shall suffice as such evidence), and, in the case of loss, theft or destruction, of any indemnification undertaking by the Holder to the Company in customary and reasonable form and, in the case of mutilation, upon surrender and cancellation of this Warrant, the Company shall execute and deliver to the Holder a new Warrant (in accordance with Section 7(d)) representing the right to purchase the Warrant Shares then underlying this Warrant.

(c) Exchangeable for Multiple Warrants. This Warrant is exchangeable, upon the surrender hereof by the Holder at the principal office of the Company, for a new Warrant or Warrants (in accordance with Section 7(d)) representing in the aggregate the right to purchase the number of Warrant Shares then underlying this Warrant, and each such new Warrant will represent the right to purchase such portion of such Warrant Shares as is designated by the Holder at the time of such surrender; provided, however, no warrants for fractional shares of Common Stock shall be given.

(d) Issuance of New Warrants. Whenever the Company is required to issue a new Warrant pursuant to the terms of this Warrant, such new Warrant (i) shall be of like tenor with this Warrant, (ii) shall represent, as indicated on the face of such new Warrant, the right to purchase the Warrant Shares then underlying this Warrant (or in the case of a new Warrant being issued pursuant to Section 7(a) or Section 7(c), the Warrant Shares designated by the Holder which, when added to the number of shares of Common Stock underlying the other new Warrants issued in connection with such issuance, does not exceed the number of Warrant Shares then underlying this Warrant), (iii) shall have an issuance date, as indicated on the face of such new Warrant which is the same as the Issuance Date, and (iv) shall have the same rights and conditions as this Warrant.

8. NOTICES;PAYMENTS.

(a) The Company shall provide the Holder with prompt written notice of all actions taken pursuant to this Warrant, including in reasonable detail a description of such action and the reason therefor. Without limiting the generality of the foregoing, the Company will give written notice to the Holder (i) immediately upon each adjustment of the Exercise Price and the number of Warrant Shares, setting forth in reasonable detail, and certifying, the calculation of such adjustment(s) and (ii) at least fifteen (15) days prior to the date on which the Company closes its books or takes a record (A) with respect to any dividend or distribution upon the shares of Common Stock, (B) with respect to any grants, issuances or sales of any Options, Convertible Securities or rights to purchase stock, warrants, securities or other property to holders of shares of Common Stock or (C) for determining rights to vote with respect to any Fundamental Transaction, dissolution or liquidation, provided in each case that such information shall be made known to the public prior to or in conjunction with such notice being provided to the Holder and (iii) at least ten (10) Trading Days prior to the consummation of any Fundamental Transaction. To the extent that any notice provided hereunder constitutes, or contains, material, non-public information regarding the Company or any of its subsidiaries, the Company shall simultaneously file such notice with the SEC pursuant to a Current Report on Form 8-K. It is expressly understood and agreed that the time of execution specified by the Holder in each Exercise Notice shall be definitive and may not be disputed or challenged by the Company.

(b) Payments. Whenever any payment is to be made by the Company to any Person pursuant to this Warrant, such payment shall be made in lawful money of the United States of America via wire transfer of U.S. Dollars in immediately available funds in accordance with the Holder's wire transfer instructions delivered to the Company on or prior to such payment date or, in the absence of such instructions, by a certified check drawn on the account of the Company and sent via overnight courier service to such Person at such address as previously provided to the Company in writing.

9. AMENDMENT AND WAIVER. Except as otherwise provided herein, the provisions of this Warrant may be amended and the Company may take any action herein prohibited, or omit to perform any act herein required to be performed by it, only if the Company has obtained the written consent of the Holder. No waiver shall be effective unless it is in writing and signed by an authorized representative of the waiving party.

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

11. GOVERNING LAW. This Warrant shall be governed by and construed and enforced in accordance with, and all questions concerning the construction, validity, interpretation and performance of this Warrant shall be governed by, the internal laws of the State of New York, without giving effect to any choice of law or conflict of law provision or rule (whether of the State of New York or any other jurisdictions) that would cause the application of the laws of any jurisdiction other than the State of New York. The Company hereby irrevocably submits to the exclusive jurisdiction of the federal courts sitting in The City of New York, Borough of Manhattan, for the adjudication of any dispute hereunder or in connection herewith or with any transaction contemplated hereby or discussed herein, and hereby irrevocably waives, and agrees not to assert in any suit, action or proceeding, any claim that it is not personally subject to the jurisdiction of any such court, that such suit, action or proceeding is brought in an inconvenient forum or that the venue of such suit, action or proceeding is improper. Nothing contained herein shall be deemed to limit in any way any right to serve process in any manner permitted by law. Nothing contained herein shall be deemed or operate to preclude the Holder from bringing suit or taking other legal action against the Company in any other jurisdiction to collect on the Company's obligations to the Holder or to enforce a judgment or other court ruling in favor of the Holder. If service of process is effected pursuant to the above sentence, such service will be deemed sufficient under New York law and the Company shall not assert otherwise. Nothing contained herein shall be deemed to limit in any way any right to serve process in any manner permitted by law. **THE COMPANY HEREBY IRREVOCABLY WAIVES ANY RIGHT IT MAY HAVE TO, AND AGREES NOT TO REQUEST, A JURY TRIAL FOR THE ADJUDICATION OF ANY DISPUTE HEREUNDER OR IN CONNECTION WITH OR ARISING OUT OF THIS WARRANT OR ANY TRANSACTION CONTEMPLATED HEREBY.**

12. Reserved.

13. CONSTRUCTION; HEADINGS. This Warrant shall be deemed to be jointly drafted by the Company and the Holder and shall not be construed against any Person as the drafter hereof. The headings of this Warrant are for convenience of reference and shall not form part of, or affect the interpretation of, this Warrant. Terms used in this Warrant but defined in the other Transaction Documents shall have the meanings ascribed to such terms on the Closing Date in such other Transaction Documents unless otherwise consented to in writing by the Holder.

14. DISPUTE RESOLUTION. In the case of a dispute as to the determination of the Exercise Price or FMV or the arithmetic calculation of the Warrant Shares (as the case may be), the Company or the Holder (as the case may be) shall submit the disputed determinations or arithmetic calculations (as the case may be) via facsimile (a) within two (2) Business Days after receipt of the applicable notice giving rise to such dispute to the Company or the Holder (as the case may be) or (b) if no notice gave rise to such dispute, at any time after the Holder learned of the circumstances giving rise to such dispute (including, without limitation, as to whether any issuance or sale or deemed issuance or sale was an issuance or sale or deemed issuance or sale of Excluded Securities). If the Holder and the Company are unable to agree upon such determination or calculation (as the case may be) of the Exercise Price, or FMV or the number of Warrant Shares (as the case may be) within three (3) Business Days of such disputed determination or arithmetic calculation being submitted to the Company or the Holder (as the case may be), then the Company shall, within two (2) Business Days submit via facsimile (i) the disputed determination of the Exercise Price or FMV (as the case may be) to an independent, reputable investment bank selected by the Holder or (ii) the disputed arithmetic calculation of the Warrant Shares to the Company's independent, outside accountant. The Company shall cause at its expense the investment bank or the accountant (as the case may be) to perform the determinations or calculations (as the case may be) and notify the Company and the Holder of the results no later than ten (10) Business Days from the time it receives such disputed determinations or calculations (as the case may be). Such investment bank's or accountant's determination or calculation (as the case may be) shall be binding upon all parties absent demonstrable error.

15. REMEDIES, CHARACTERIZATION, OTHER OBLIGATIONS, BREACHES AND INJUNCTIVE RELIEF. The remedies provided in this Warrant shall be cumulative and in addition to all other remedies available under this Warrant and the other Transaction Documents, at law or in equity (including a decree of specific performance and/or other injunctive relief), and nothing herein shall limit the right of the Holder to pursue actual damages for any failure by the Company to comply with the terms of this Warrant. The Company covenants to the Holder that there shall be no characterization concerning this instrument other than as expressly provided herein. Amounts set forth or provided for herein with respect to payments, exercises and the like (and the computation thereof) shall be the amounts to be received by the Holder and shall not, except as expressly provided herein, be subject to any other obligation of the Company (or the performance thereof). The Company acknowledges that a breach by it of its obligations hereunder will cause irreparable harm to the Holder and that the remedy at law for any such breach may be inadequate. The Company therefore agrees that, in the event of any such breach or threatened breach, the holder of this Warrant shall be entitled, in addition to all other available remedies, to an injunction restraining any breach, without the necessity of showing economic loss and without any bond or other security being required. The Company shall provide all information and documentation to the Holder that is requested by the Holder to enable the Holder to confirm the Company's compliance with the terms and conditions of this Warrant (including, without limitation, compliance with Section 2 hereof). The issuance of shares and certificates for shares as contemplated hereby upon the exercise of this Warrant shall be made without charge to the Holder or such shares for any issuance tax or other costs in respect thereof, provided that the Company shall not be required to pay any tax which may be payable in respect of any transfer involved in the issuance and delivery of any certificate in a name other than the Holder or its agent on its behalf.

16. TRANSFER. This Warrant may be offered for sale, sold, transferred or assigned without the consent of the Company.

17. CERTAIN DEFINITIONS. For purposes of this Warrant, the following terms shall have the following meanings:

(a)

(b) "**Bloomberg**" means Bloomberg, L.P.

(c) "**Business Day**" means any day other than Saturday, Sunday or other day on which commercial banks in The City of New York are authorized or required by law to remain closed.

(d) "**Closing Sale Price**" means, for any security as of any date, the last closing trade price for such security on the Eligible Market, as reported by Bloomberg, or, if the Eligible Market begins to operate on an extended hours basis and does not designate the closing trade price, then the last trade price of such security prior to 4:00 p.m., New York time, as reported by Bloomberg, or, if the Eligible Market is not the principal securities exchange or trading market for such security, the last trade price of such security on the principal securities exchange or trading market where such security is listed or traded as reported by Bloomberg, or if the foregoing does not apply, the last trade price of such security in the over-the-counter market on the electronic bulletin board for such security as reported by Bloomberg, or, if no last trade price is reported for such security by Bloomberg, the average of the ask prices of any market makers for such security as reported in the "pink sheets" by Pink Sheets LLC (formerly the National Quotation Bureau, Inc.). If the Closing Sale Price cannot be calculated for a security on a particular date on any of the foregoing bases, the Closing Sale Price of such security on such date shall be the fair market value as mutually determined by the Company and the Holder. If the Company and the Holder are unable to agree upon the fair market value of such security, then such dispute shall be resolved in accordance with the procedures in Section 14. All such determinations shall be appropriately adjusted for any stock dividend, stock split, stock combination or other similar transaction during such period.

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

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

(g) "**Expiration Date**" means the date that is five years from the Issuance Date, or, if such date falls on a day other than a Business Day or on which trading does not take place on the Eligible Market (a "**Holiday**"), the next date that is not a Holiday.

(h) **Fundamental Transaction**" means that (i) the Company or any of its Subsidiaries shall, directly or indirectly, in one or more related transactions, (A) consolidate or merge with or into (whether or not the Company or any of its Subsidiaries is the surviving corporation) any other Person, or (B) sell, lease, license, assign, transfer, convey or otherwise dispose of all or substantially all of its respective properties or assets to any other Person, or (C) allow any other Person to make a purchase, tender or exchange offer that is accepted by the holders of more than 50% of the outstanding shares of Voting Stock of the Company (not including any shares of Voting Stock of the Company held by the Person or Persons making or party to, or associated or affiliated with the Persons making or party to, such purchase, tender or exchange offer), or (D) consummate a stock or share purchase agreement or other business combination (including, without limitation, a reorganization, recapitalization, spin-off or scheme of arrangement) with any other Person whereby such other Person acquires more than 50% of the outstanding shares of Voting Stock of the Company (not including any shares of Voting Stock of the Company held by the other Person or other Persons making or party to, or associated or affiliated with the other Persons making or party to, such stock or share purchase agreement or other business combination), or (E) (1) reorganize, recapitalize or reclassify the Common Stock, (2) effect or consummate a stock combination, reverse stock split or other similar transaction involving the Common Stock or (3) make any public announcement or disclosure with respect to any stock combination, reverse stock split or other similar transaction involving the Common Stock (including, without limitation, any public announcement or disclosure of (a) any potential, possible or actual stock combination, reverse stock split or other similar transaction involving the Common Stock or (b) board or stockholder approval thereof, or the intention of the Company to seek board or stockholder approval of any stock combination, reverse stock split or other similar transaction involving the Common Stock), or (ii) any "person" or "group" (as these terms are used for purposes of Sections 13(d) and 14(d) of the 1934 Act and the rules and regulations promulgated thereunder) is or shall become the "beneficial owner" (as defined in Rule 13d-3 under the 1934 Act), directly or indirectly, of 50% of the aggregate ordinary voting power represented by issued and outstanding Voting Stock of the Company.

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

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

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

(l) "**SEC**" means the United States Securities and Exchange Commission.

(m) "**Successor Entity**" means the Person (or, if so elected by the Holder, the Parent Entity) formed by, resulting from or surviving any Fundamental Transaction or the Person (or, if so elected by the Holder, the Parent Entity) with which such Fundamental Transaction shall have been entered into.

(n) "**Trading Day**" means any day on which the Common Stock is traded on the Eligible Market, or, if the Eligible Market is not the principal trading market for the Common Stock, then on the principal securities exchange or securities market on which the Common Stock is then traded, provided that "Trading Day" shall not include any day on which the Common Stock is scheduled to trade on such exchange or market for less than 4.5 hours or any day that the Common Stock is suspended from trading during the final hour of trading on such exchange or market (or if such exchange or market does not designate in advance the closing time of trading on such exchange or market, then during the hour ending at 4:00 p.m., New York time) unless such day is otherwise designated as a Trading Day in writing by the Holder.

(o) "**Voting Stock**" of a Person means capital stock of such Person of the class or classes pursuant to which the holders thereof have the general voting power to elect, or the general power to appoint, at least a majority of the board of directors, managers or trustees of such Person (irrespective of whether or not at the time capital stock of any other class or classes shall have or might have voting power by reason of the happening of any contingency).

(p) "**FMV**" means, for any date, the price determined by the first of the following clauses that applies: (a) if the Common Stock is then listed or quoted on a Eligible Market, the value shall be deemed to be the highest intra-day or closing price on any trading day on such Eligible Market on which the Common Stock is then listed or quoted as reported by Bloomberg L.P. (based on a Trading Day from 9:30 a.m. (New York City time) to 4:02 p.m. (New York City time)) during the five trading days preceding the exercise, (b) if OTCQB or OTCQX is not an Eligible Market, the value shall be deemed to be the highest intra-day or closing price on any trading day on the OTCQB or OTCQX on which the Common Stock is then quoted as reported by Bloomberg L.P. (based on a Trading Day from 9:30 a.m. (New York City time) to 4:02 p.m. (New York City time)) during the five trading days preceding the exercise, as applicable, (c) if the Common Stock is not then listed or quoted for trading on OTCQB or OTCQX and if prices for the Common Stock are then reported in the "Pink Sheets" published by OTC Markets Group, Inc. (or a similar organization or agency succeeding to its functions of reporting prices), the "OTC Markets Group", the value shall be deemed to be the highest intra-day or closing price on any trading day on the Pink Sheets on which the Common Stock is then quoted as reported by OTC Markets Group (based on a Trading Day from 9:30 a.m. (New York City time) to 4:02 p.m. (New York City time)) during the five trading days preceding the exercise, or (d) in all other cases, the fair market value of a share of Common Stock as determined by an independent appraiser selected in good faith by the Holder and reasonably acceptable to the Company, the fees and expenses of which shall be paid by the Company.

[*signature page follows*]

IN WITNESS WHEREOF, the Company has caused this Warrant to Purchase Common Stock to be duly executed as of the Issuance Date set out above.

Origin, Inc.

By: /s/ Johnny Fernandes
Name: Johnny Fernandes
Title: CFO

EXHIBIT A

EXERCISE NOTICE

TO BE EXECUTED BY THE REGISTERED HOLDER TO EXERCISE THIS WARRANT TO PURCHASE COMMON STOCK

Origin, Inc.

The undersigned holder hereby exercises the right to purchase _____Common Stock ("**Warrant Shares**") of **Origin, Inc.**, a Delaware corporation (the "**Company**"), evidenced by Warrant to Purchase Common Stock No. _(the "**Warrant**"). Capitalized terms used herein and not otherwise defined shall have the respective meanings set forth in the Warrant.

1. Form of Exercise Price. The Holder intends that payment of the Exercise Price shall be made as:

_____ a "Cash Exercise" with respect to _____ Warrant Shares; and/or

_____ a "Cashless Exercise" with respect to _____ Warrant Shares.

In the event that the Holder has elected a Cashless Exercise with respect to some or all of the Warrant Shares to be issued pursuant hereto, the Holder hereby represents and warrants that (i) this Exercise Notice was executed by the Holder on the date set forth below and (ii) if applicable, the FMV as of the date prior to the date of the Exercise Notice was $_____.]

1. Form of Exercise Price. The Holder intends that payment of the Exercise Price shall be made as a "Cash Exercise".]

2. Payment of Exercise Price. In the event that the Holder has elected a Cash Exercise with respect to some or all of the Warrant Shares to be issued pursuant hereto, the Holder shall pay the Aggregate Exercise Price in the sum of $_____ to the Company in accordance with the terms of the Warrant.

3. Delivery of Warrant Shares. The Company shall deliver to Holder, or its designee or agent as specified below, _____Warrant Shares in accordance with the terms of the Warrant. Delivery shall be made to Holder, or for its benefit, as follows:

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

Issue to: _____

_____

_____

_____

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

DTC Participant: _____

DTC Number: _____

Account Number: _____

Date: _____, _____

_____
Name of Registered Holder

By: _____
Name:
Title:

Tax ID: _____

Facsimile: _____

_____

EXHIBIT B

ACKNOWLEDGMENT

The Company hereby acknowledges this Exercise Notice and hereby directs _____to issue the above indicated number of shares of Common Stock in accordance with the Transfer Agent Instructions dated _____, 20____, from the Company and acknowledged and agreed to by_____.

Origin, Inc.

By: _____
Name:
Title:

SCHEDULE OF WARRANTS

Warrant No.	**Warrant Issuance Date**	**Date and Principal Amount of Convertible Notes Upon Which Share Number of Warrant is Calculated**	**Expiration Date**
PA-1	June 30, 2022	Company's Convertible Notes dated June 30, 2022 in the principal amount of $450,000	June 29, 2027
PA-2	August 16, 2022	Company's Convertible Notes dated August 16, 2022 in the principal amount of $60,000	August 15, 2027
PA-3	September 23, 2022	Company's Convertible Notes dated September 23, 2022 in the principal amount of $725,000	September 22, 2027
PA-4	October 25, 2022	Company's Convertible Notes dated October 25, 2022 in the principal amount of 315,000	October 24, 2027
PA-5	November 30, 2022	Company's Convertible Notes dated November 30, 2022 in the principal amount of $288,000	November 29, 2027
PA-6	December 21, 2022	Company's Convertible Notes dated December 21, 2022 in the principal amount of $101,749.70	December 20, 2027

Exhibit 10.1

ADVANCED PLASMA THERAPIES, INC.
2014 EQUITY INCENTIVE PLAN

1. *Purpose*. The purpose of the Advanced Plasma Therapies, Inc. 2014 Equity Incentive Plan is to provide a means through which the Company and its Affiliates may attract and retain key personnel and to provide a means whereby directors, officers, managers, employees, consultants and advisors (and prospective directors, officers, managers, employees, consultants and advisors) of the Company and its Affiliates can acquire and maintain an equity interest in the Company, or be paid incentive compensation, which may (but need not) be measured by reference to the value of Common Shares, thereby strengthening their commitment to the welfare of the Company and its Affiliates and aligning their interests with those of the Company's stockholders.

2. *Definitions*. The following definitions shall be applicable throughout this Plan:

(a) "*Affiliate*" means (i) any person or entity that directly or indirectly controls, is controlled by or is under common control with the Company and/or (ii) to the extent provided by the Committee, any person or entity in which the Company has a significant interest as determined by the Committee in its discretion. The term "control" (including, with correlative meaning, the terms "controlled by" and "under common control with"), as applied to any person or entity, means the possession, directly or indirectly, of the power to direct or cause the direction of the management and policies of such person or entity, whether through the ownership of voting or other securities, by contract or otherwise.

(b) "*Award*" means, individually or collectively, any Incentive Stock Option, Nonqualified Stock Option, Stock Appreciation Right, Restricted Stock, Restricted Stock Unit, Stock Bonus Award and Performance Compensation Award granted under this Plan.

(c) "*Board*" means the Board of Directors of the Company.

(d) "*Business Combination*" has the meaning given such term in the definition of "Change in Control."

(e) *"Business Day"* means any day other than a Saturday, a Sunday or a day on which banking institutions in New York City are authorized or obligated by federal law or executive order to be closed.

(f) "*Cause*" means, in the case of a particular Award, unless the applicable Award agreement states otherwise, (i) the Company or an Affiliate having "cause" to terminate a Participant's employment or service, as defined in any employment or consulting agreement or similar document or policy between the Participant and the Company or an Affiliate in effect at the time of such termination or (ii) in the absence of any such employment or consulting agreement, document or policy (or the absence of any definition of "Cause" contained therein), (A) a continuing material breach or material default (including, without limitation, any material dereliction of duty) by Participant of any agreement between the Participant and the Company, except for any such breach or default which is caused by the physical disability of the Participant (as determined by a neutral physician), or a continuing failure by the Participant to follow the direction of a duly authorized representative of the Company; (B) gross negligence, willful misfeasance or breach of fiduciary duty by the Participant; (C) the commission by the Participant of an act of fraud, embezzlement or any felony or other crime of dishonesty in connection with the Participant's duties; or (D) conviction of the Participant of a felony or any other crime that would materially and adversely affect: (i) the business reputation of the Company or (ii) the performance of the Participant's duties to the Company. Any determination of whether Cause exists shall be made by the Committee in its sole discretion.

(g) "*Change in Control*" shall, in the case of a particular Award, unless the applicable Award agreement states otherwise or contains a different definition of "Change in Control," be deemed to occur upon:

(i) An acquisition (whether directly from the Company or otherwise) of any voting securities of the Company (the "*Voting Securities*") by any "Person" (as the term person is used for purposes of Section 13(d) or 14(d) of the Securities and Exchange Act of 1934, as amended (the "*Exchange Act*")), immediately after which such Person has "Beneficial Ownership" (within the meaning

of Rule 13d-3 promulgated under the Exchange Act) of more than fifty percent (50%) of the combined voting power of the Company's then outstanding Voting Securities.

(ii) The individuals who constitute the members of the Board cease, by reason of a financing, merger, combination, acquisition, takeover or other non-ordinary course transaction affecting the Company, to constitute at least fifty-one percent (51%) of the members of the Board; or

(iii) The consummation of any of the following events:

(A) A merger, consolidation or reorganization involving the Company, where either or both of the events described in clauses (i) or (ii) above would be the result;

(B) A liquidation or dissolution of or appointment of a receiver, rehabilitator, conservator or similar person for, or the filing by a third party of an involuntary bankruptcy against, the Company; provided, however, that to the extent necessary to comply with Section 409A of the Code, the occurrence of an event described in this subsection (B) shall not permit the settlement of Restricted Stock Units granted under this Plan; or

(C) An agreement for the sale or other disposition of all or substantially all of the assets of the Company to any Person (other than a transfer to a subsidiary of the Company).

(h) "*Closing Price*" means (A) during such time as the Common Shares are registered under Section 12 of the Exchange Act, the closing price of the Common Shares as reported by an established stock exchange or automated quotation system on the day for which such value is to be determined, or, if no sale of the Common Shares shall have been made on any such stock exchange or automated quotation system that day, on the next preceding day on which there was a sale of such Common Shares, or (B) during any such time as the Common Shares are not listed upon an established stock exchange or automated quotation system, the mean between dealer "bid" and "ask" prices of the Common Shares in the over-the-counter market on the day for which such value is to be determined, as reported by the Financial Industry Regulatory Authority, Inc., or (C) during any such time as the Common Shares cannot be valued pursuant to (A) or (B) above, the fair market value shall be as determined by the Committee considering all relevant information including, by example and not by limitation, the most recent price at which Common Shares were issued to third party investors.

(i) "*Code*" means the Internal Revenue Code of 1986, as amended, and any successor thereto. References in this Plan to any section of the Code shall be deemed to include any regulations or other interpretative guidance under such section, and any amendments or successor provisions to such section, regulations or guidance.

(j) "*Committee*" means a committee of at least two people as the Board may appoint to administer this Plan or, if no such committee has been appointed by the Board, the full Board. Unless altered by an action of the Board, the Committee shall be the Compensation Committee of the Board.

(k) "*Common Shares*" means the common stock, par value $.001 per share, of the Company (and any stock or other securities into which such common shares may be converted or into which they may be exchanged).

(l) "*Company*" means Advanced Plasma Therapies, Inc., a Delaware corporation, together with its successors and assigns.

(m) "*Date of Grant*" means the date on which the granting of an Award is authorized, or such other date as may be specified in such authorization.

(n) "*Disability*" means a "permanent and total" disability incurred by a Participant while in the employ of the Company or an Affiliate. For this purpose, a permanent and total disability shall mean that the Participant is unable to engage in any substantial gainful activity by reason of any medically determinable physical or mental impairment that can be expected to result in death or can be expected to last for a continuous period of not less than twelve (12) months.

(o) "*Effective Date*" means the date this Plan is approved by the Board and the Company's stockholders.

(p) "*Eligible Director*" means a person who is (i) a "non-employee director" within the meaning of Rule 16b-3 under the Exchange Act, and (ii) an "outside director" within the meaning of Section 162(m) of the Code.

(q) "*Eligible Person*" means any (i) individual employed by the Company or an Affiliate; *provided, however*, that no such employee covered by a collective bargaining agreement shall be an Eligible Person unless and to the extent that such eligibility is set forth in such collective bargaining agreement or in an agreement or instrument relating thereto; (ii) director of the Company or an Affiliate; (iii) consultant or advisor to the Company or an Affiliate, provided that if the Securities Act applies such persons must be eligible to be offered securities registrable on Form S-8 under the Securities Act; or (iv) prospective employees, directors, officers, consultants or advisors who have accepted offers of employment or consultancy from the Company or its Affiliates (and would satisfy the provisions of clauses (i) through (iii) above once he or she begins employment with or begins providing services to the Company or its Affiliates).

(r) "*Exchange Act*" has the meaning given such term in the definition of "Change in Control," and any reference in this Plan to any section of (or rule promulgated under) the Exchange Act shall be deemed to include any rules, regulations or other interpretative guidance under such section or rule, and any amendments or successor provisions to such section, rules, regulations or guidance.

(s) "*Exercise Price*" has the meaning given such term in Section 7(b) of this Plan.

(t) "*Fair Market Value*", unless otherwise provided by the Committee in accordance with all applicable laws, rules regulations and standards, means, on a given date, (i) if the Common Shares (A) are listed on a national securities exchange or (B) are not listed on a national securities exchange, but is quoted by the OTC Markets Group, Inc. (www.otcmarkets.com) or any successor or alternative recognized over-the-counter market or another inter-dealer quotation system, on a last sale basis, the average selling price of the Common Shares reported on such national securities exchange or other inter-dealer quotation system, determined as the arithmetic mean of such selling prices over the thirty (30)-Business Day period preceding the Date of Grant, weighted based on the volume of trading of such Common Shares on each trading day during such period; or (ii) if the Common Shares are not listed on a national securities exchange or quoted in an inter-dealer quotation system on a last sale basis, the amount determined by the Committee in good faith to be the fair market value of the Common Shares.

(u) "*Immediate Family Members*" shall have the meaning set forth in Section 15(b) of this Plan.

(v) "*Incentive Stock Option*" means an Option that is designated by the Committee as an incentive stock option as described in Section 422 of the Code and otherwise meets the requirements set forth in this Plan.

(w) "*Indemnifiable Person*" shall have the meaning set forth in Section 4(e) of this Plan.

(x) "*Intellectual Property Products*" shall have the meaning set forth in Section 15(c) of this Plan.

(y) *"Mature Shares*" means Common Shares owned by a Participant that are not subject to any pledge or security interest and that have been either previously acquired by the Participant on the open market or meet such other requirements, if any, as the Committee may determine are necessary in order to avoid an accounting earnings charge on account of the use of such shares to pay the Exercise Price or satisfy a withholding obligation of the Participant.

(z) "*Negative Discretion*" shall mean the discretion authorized by this Plan to be applied by the Committee to eliminate or reduce the size of a Performance Compensation Award consistent with Section 162(m) of the Code.

(aa) "*Nonqualified Stock Option*" means an Option that is not designated by the Committee as an Incentive Stock Option.

(bb) "*Option*" means an Award granted under Section 7 of this Plan.

(cc) "*Option Period*" has the meaning given such term in Section 7(c) of this Plan.

(dd) "*Outstanding Company Common Shares*" has the meaning given such term in the definition of "Change in Control."

(ee) "*Outstanding Company Voting Securities*" has the meaning given such term in the definition of "Change in Control."

(ff) "*Participant*" means an Eligible Person who has been selected by the Committee to participate in this Plan and to receive an Award pursuant to Section 6 of this Plan.

(gg) "*Performance Compensation Award*" shall mean any Award designated by the Committee as a Performance Compensation Award pursuant to Section 11 of this Plan.

(hh) "*Performance Criteria*" shall mean the criterion or criteria that the Committee shall select for purposes of establishing the Performance Goal(s) for a Performance Period with respect to any Performance Compensation Award under this Plan.

(ii) "*Performance Formula*" shall mean, for a Performance Period, the one or more objective formulae applied against the relevant Performance Goal to determine, with regard to the Performance Compensation Award of a particular Participant, whether all, some portion but less than all, or none of the Performance Compensation Award has been earned for the Performance Period.

(jj) "*Performance Goals*" shall mean, for a Performance Period, the one or more goals established by the Committee for the Performance Period based upon the Performance Criteria.

(kk) "*Performance Period*" shall mean the one or more periods of time, as the Committee may select, over which the attainment of one or more Performance Goals will be measured for the purpose of determining a Participant's right to, and the payment of, a Performance Compensation Award.

(ll) "*Permitted Transferee*" shall have the meaning set forth in Section 15(b) of this Plan.

(mm) "*Person*" has the meaning given such term in the definition of "Change in Control."

(nn) "*Plan*" means this Dipexium Pharmaceuticals, Inc. 2014 Equity Incentive Plan, as amended from time to time.

(oo) "*Retirement*" means the fulfillment of each of the following conditions: (i) the Participant is good standing with the Company as determined by the Committee; (ii) the voluntary termination by a Participant of such Participant's employment or service to the Company and (B) that at the time of such voluntary termination, the sum of: (1) the Participant's age (calculated to the nearest month, with any resulting fraction of a year being calculated as the number of months in the year divided by 12) and (2) the Participant's years of employment or service with the Company (calculated to the nearest month, with any resulting fraction of a year being calculated as the number of months in the year divided by 12) equals at least 62 (provided that, in any case, the foregoing shall only be applicable if, at the time of Retirement, the Participant shall be at least 55 years of age and shall have been employed by or served with the Company for no less than 5 years).

(pp) "*Restricted Period*" means the period of time determined by the Committee during which an Award is subject to restrictions or, as applicable, the period of time within which performance is measured for purposes of determining whether an Award has been earned.

(qq) "*Restricted Stock Unit*" means an unfunded and unsecured promise to deliver Common Shares, cash, other securities or other property, subject to certain restrictions (including, without limitation, a requirement that the Participant remain continuously employed or provide continuous services for a specified period of time), granted under Section 9 of this Plan.

(rr) "*Restricted Stock*" means Common Shares, subject to certain specified restrictions (including, without limitation, a requirement that the Participant remain continuously employed or provide continuous services for a specified period of time), granted under Section 9 of this Plan.

(ss) "*SAR Period*" has the meaning given such term in Section 8(c) of this Plan.

(tt) "*Securities Act*" means the Securities Act of 1933, as amended, and any successor thereto. Reference in this Plan to any section of the Securities Act shall be deemed to include any rules, regulations or other official interpretative guidance under such section, and any amendments or successor provisions to such section, rules, regulations or guidance.

(uu) "*Stock Appreciation Right*" or *"SAR"* means an Award granted under Section 8 of this Plan which meets all of the requirements of Section 1.409A-1(b)(5)(i)(B) of the Treasury Regulations.

(vv) "*Stock Bonus Award*" means an Award granted under Section 10 of this Plan.

(ww) "*Strike Price*" means, except as otherwise provided by the Committee in the case of Substitute Awards, (i) in the case of a SAR granted in tandem with an Option, the Exercise Price of the related Option, or (ii) in the case of a SAR granted independent of an Option, the Fair Market Value on the Date of Grant.

(xx) "*Subsidiary*" means, with respect to any specified Person:

(i) any corporation, association or other business entity of which more than 50% of the total voting power of shares of Outstanding Company Voting Securities (without regard to the occurrence of any contingency and after giving effect to any voting agreement or stockholders' agreement that effectively transfers voting power) is at the time owned or controlled, directly or indirectly, by that Person or one or more of the other Subsidiaries of that Person (or a combination thereof); and

(ii) any partnership or limited liability company (or any comparable foreign entity) (a) the sole general partner or managing member (or functional equivalent thereof) or the managing general partner of which is such Person or Subsidiary of such Person or (b) the only general partners or managing members (or functional equivalents thereof) of which are that Person or one or more Subsidiaries of that Person (or any combination thereof).

(yy) "*Substitute Award*" has the meaning given such term in Section 5(e).

(zz) "*Treasury Regulations*" means any regulations, whether proposed, temporary or final, promulgated by the U.S. Department of Treasury under the Code, and any successor provisions.

3. *Effective Date; Duration*. The Plan shall be effective as of the Effective Date, but no Award shall be exercised or paid (or, in the case of a stock Award, shall be granted unless contingent on stockholder approval) unless and until this Plan has been approved by the stockholders of the Company, which approval shall be within twelve (12) months after the date this Plan is adopted by the Board. The expiration date of this Plan, on and after which date no Awards may be granted hereunder, shall be the tenth anniversary of the Effective Date; *provided, however*, that such expiration shall not affect Awards then outstanding, and the terms and conditions of this Plan shall continue to apply to such Awards.

4. *Administration*.

(a) The Committee shall administer this Plan. To the extent required to comply with the provisions of Rule 16b-3 promulgated under the Exchange Act (if the Board is not acting as the Committee under this Plan) or necessary to obtain the exception for performance-based compensation under Section 162(m) of the Code, as applicable, it is intended that each member of the Committee shall, at the time he takes any action with respect to an Award under this Plan, be an Eligible Director. However, the fact that a Committee member shall fail to qualify as an Eligible Director shall not invalidate any Award granted by the Committee that is otherwise validly granted under this Plan. The acts of a majority of the members present at any meeting at which a quorum is present or acts approved in writing by a majority of the Committee shall be deemed the acts of the Committee. Whether a quorum is present shall be determined based on the Committee's charter as approved by the Board.

(b) Subject to the provisions of this Plan and applicable law, the Committee shall have the sole and plenary authority, in addition to other express powers and authorizations conferred on the Committee by this Plan and its charter, to: (i) designate Participants; (ii) determine the type or types of Awards to be granted to a Participant; (iii) determine the number of Common Shares to be covered by, or with respect to which payments, rights, or other matters are to be calculated in connection with, Awards; (iv) determine the terms and conditions of any Award; (v) determine whether, to what extent, and under what circumstances Awards may be settled or exercised in cash, Common Shares, other securities, other Awards or other property, or canceled, forfeited, or suspended and the method or methods by which Awards may be settled, exercised, canceled, forfeited, or suspended; (vi) determine whether, to what extent, and under what circumstances the delivery of cash, Common Shares, other securities, other Awards or other property and other amounts payable with respect to an Award; (vii) interpret, administer, reconcile any inconsistency in, settle any controversy regarding, correct any defect in and/or complete any omission in this Plan and any instrument or agreement relating to, or Award granted under, this Plan; (viii) establish, amend, suspend, or waive any rules and regulations and appoint such agents as the Committee shall deem appropriate for the proper administration of this Plan; (ix) accelerate the vesting or exercisability of, payment for or lapse of restrictions on, Awards; and (x) make any other determination and take any other action that the Committee deems necessary or desirable for the administration of this Plan.

(c) The Committee may delegate to one or more officers of the Company or any Affiliate the authority to act on behalf of the Committee with respect to any matter, right, obligation, or election that is the responsibility of or that is allocated to the Committee herein, and that may be so delegated as a matter of law, except for grants of Awards to persons (i) subject to Section 16 of the Exchange Act or (ii) who are, or who are reasonably expected to be, "covered employees" for purposes of Section 162(m) of the Code.

(d) Unless otherwise expressly provided in this Plan, all designations, determinations, interpretations, and other decisions under or with respect to this Plan or any Award or any documents evidencing Awards granted pursuant to this Plan shall be within the sole discretion of the Committee, may be made at any time and shall be final, conclusive and binding upon all persons or entities, including, without limitation, the Company, any Affiliate, any Participant, any holder or beneficiary of any Award, and any stockholder of the Company.

(e) No member of the Board, the Committee, delegate of the Committee or any employee, advisor or agent of the Company or the Board or the Committee (each such person, an "*Indemnifiable Person*") shall be liable for any action taken or omitted to be taken or any determination made in good faith with respect to this Plan or any Award hereunder. Each Indemnifiable Person shall be indemnified and held harmless by the Company against and from (and the Company shall pay or reimburse on demand for) any loss, cost, liability, or expense (including attorneys' fees) that may be imposed upon or incurred by such Indemnifiable Person in connection with or resulting from any action, suit or proceeding to which such Indemnifiable Person may be a party or in which such Indemnifiable Person may be involved by reason of any action taken or omitted to be taken under this Plan or any Award agreement and against and from any and all amounts paid by such Indemnifiable Person with the Company's approval, in settlement thereof, or paid by such Indemnifiable Person in satisfaction of any judgment in any such action, suit or proceeding against such Indemnifiable Person, provided, that the Company shall have the right, at its own expense, to assume and defend any such action, suit or proceeding and once the Company gives notice of its intent to assume the defense, the Company shall have sole control over such defense with counsel of the Company's choice. The foregoing right of indemnification shall not be available to an Indemnifiable Person to the extent that a final judgment or other final adjudication (in either case not subject to further appeal) binding upon such Indemnifiable Person determines that the acts or omissions of such Indemnifiable Person giving rise to the indemnification claim resulted from such Indemnifiable Person's bad faith, fraud or willful criminal act or omission or that such right of indemnification is otherwise prohibited by law or by the Company's Certificate of Incorporation or Bylaws. The foregoing right of indemnification shall not be exclusive of any other rights of indemnification to which such Indemnifiable Persons may be entitled under the Company's Certificate of Incorporation or Bylaws, as a matter of law, or otherwise, or any other power that the Company may have to indemnify such Indemnifiable Persons or hold them harmless.

(f) Notwithstanding anything to the contrary contained in this Plan, the Board may, in its sole discretion, at any time and from time to time, grant Awards and administer this Plan with respect to such Awards. In any such case, the Board shall have all the authority granted to the Committee under this Plan.

5. *Grant of Awards; Shares Subject to this Plan; Limitations*.

(a) The Committee may, from time to time, grant Options, Stock Appreciation Rights, Restricted Stock, Restricted Stock Units, Stock Bonus Awards and/or Performance Compensation Awards to one or more Eligible Persons.

(b) Subject to Sections 3, 11 and 12 of this Plan, the Committee is authorized to deliver under this Plan an aggregate of Common Shares equal to **TWENTY-TWO THOUSAND (22,000) Common Shares**. Each Common Share subject to an Option or a Stock Appreciation Right will reduce the number of Common Shares available for issuance by one share, and each Common Share underlying an Award of Restricted Stock, Restricted Stock Units, Stock Bonus Awards and Performance Compensation Awards will reduce the number of Common Shares available for issuance by 1.15 shares.

(c) Common Shares underlying Awards under this Plan that are forfeited, cancelled, expire unexercised, or are settled in cash shall be available again for Awards under this Plan at the same ratio at which they were previously granted. Notwithstanding the foregoing, the following Common Shares shall not be available again for Awards under the Plan: (i) shares tendered or held back upon the exercise of an Option or settlement of an Award to cover the Exercise Price of an Award; (ii) shares that are used or withheld to satisfy tax obligations of the Participant; and (iii) shares subject to a Stock Appreciation Right that are not issued in connection with the stock settlement of the SAR upon exercise thereof.

(d) Common Shares delivered by the Company in settlement of Awards may be authorized and unissued shares, shares held in the treasury of the Company, shares purchased on the open market or by private purchase, or a combination of the foregoing.

(e) Subject to compliance with Section 1.409A-3(f) of the Treasury Regulations, Awards may, in the sole discretion of the Committee, be granted under this Plan in assumption of, or in substitution for, outstanding awards previously granted by an entity acquired by the Company or with which the Company combines ("*Substitute Awards*"). The number of Common Shares underlying any Substitute Awards shall be counted against the aggregate number of Common Shares available for Awards under this Plan.

6. *Eligibility*. Participation shall be limited to Eligible Persons who have entered into an Award agreement or who have received written notification from the Committee, or from a person designated by the Committee, that they have been selected to participate in this Plan.

7. *Options*.

(a) *Generally*. Each Option granted under this Plan shall be evidenced by an Award agreement (whether in paper or electronic medium (including email or the posting on a web site maintained by the Company or a third party under contract with the Company)). Each Option so granted shall be subject to the conditions set forth in this Section 7, and to such other conditions not inconsistent with this Plan as may be reflected in the applicable Award agreement. All Options granted under this Plan shall be Nonqualified Stock Options unless the applicable Award agreement expressly states that the Option is intended to be an Incentive Stock Option. Notwithstanding any designation of an Option, to the extent that the aggregate Fair Market Value of Common Shares with respect to which Options designated as Incentive Stock Options are exercisable for the first time by any Participant during any calendar year (under all plans of the Company or any Subsidiary) exceeds $100,000, such excess Options shall be treated as Nonqualified Stock Options. Incentive Stock Options shall be granted only to Eligible Persons who are employees of the Company and its Affiliates, and no Incentive Stock Option shall be granted to any Eligible Person who is ineligible to receive an Incentive Stock Option under the Code. No Option shall be treated as an Incentive Stock Option unless this Plan has been approved by the stockholders of the Company in a manner intended to comply with the stockholder approval requirements of Section 422(b)(1) of the Code, provided that any Option intended to be an Incentive Stock Option shall not fail to be effective solely on account of a failure to obtain such approval, but rather such Option shall be treated as a Nonqualified Stock Option unless and until such approval is obtained. In the case of an Incentive Stock Option, the terms and conditions of such grant shall be subject to and comply with such rules as may be prescribed by Section 422 of the Code. If for any reason an Option intended to be an Incentive Stock Option (or any portion thereof) shall not qualify as an Incentive Stock Option, then, to the extent of such nonqualification, such Option or portion thereof shall be regarded as a Nonqualified Stock Option appropriately granted under this Plan.

(b) *Exercise Price*. The exercise price ("*Exercise Price*") per Common Share for each Option shall not be less than 100% of the Fair Market Value of such share determined as of the Date of Grant; *provided, however*, that in the case of an Incentive Stock Option granted to an employee who, at the time of the grant of such Option, owns shares representing more than 10% of the voting power of all classes of shares of the Company or any Affiliate, the Exercise Price per share shall not be less than 110% of the Fair Market Value

per share on the Date of Grant; *and, provided further,* that notwithstanding any provision herein to the contrary, the Exercise Price shall not be less than the par value per Common Share.

(c) *Vesting and Expiration*. Options shall vest and become exercisable in such manner and on such date or dates determined by the Committee and as set forth in the applicable Award agreement, and shall expire after such period, not to exceed ten (10) years from the Date of Grant, as may be determined by the Committee (the "*Option Period*"); *provided, however*, that the Option Period shall not exceed five (5) years from the Date of Grant in the case of an Incentive Stock Option granted to a Participant who on the Date of Grant owns shares representing more than 10% of the voting power of all classes of shares of the Company or any Affiliate; *and, provided, further*, that notwithstanding any vesting dates set by the Committee, the Committee may, in its sole discretion, accelerate the exercisability of any Option, which acceleration shall not affect the terms and conditions of such Option other than with respect to exercisability. Unless otherwise provided by the Committee in an Award agreement:

(i) an Option shall vest and become exercisable with respect to 100% of the Common Shares subject to such Option on the third (3rd) anniversary of the Date of Grant;

(ii) the unvested portion of an Option shall expire upon termination of employment or service of the Participant granted the Option, and the vested portion of such Option shall remain exercisable for:

(A) one year following termination of employment or service by reason of such Participant's death or Disability (with the determination of Disability to be made by the Committee on a case by case basis), but not later than the expiration of the Option Period;

(B) for directors, officers and employees of the Company only, for the remainder of the Option Period following termination of employment or service by reason of such Participant's Retirement (it being understood that any Incentive Stock Option held by the Participant shall be treated as a Nonqualified Stock Option if exercise is not undertaken within 90 days of the date of Retirement);

(C) 90 calendar days following termination of employment or service for any reason other than such Participant's death, Disability or Retirement, and other than such Participant's termination of employment or service for Cause, but not later than the expiration of the Option Period; and

(iii) both the unvested and the vested portion of an Option shall immediately expire upon the termination of the Participant's employment or service by the Company for Cause.

(d) *Method of Exercise and Form of Payment*. No Common Shares shall be delivered pursuant to any exercise of an Option until payment in full of the Exercise Price therefor is received by the Company and the Participant has paid to the Company an amount equal to any federal, state, local and non-U.S. income and employment taxes required to be withheld. Options that have become exercisable may be exercised by delivery of written or electronic notice of exercise to the Company in accordance with the terms of the Award agreement accompanied by payment of the Exercise Price. The Exercise Price shall be payable (i) in cash, check (subject to collection), cash equivalent and/or vested Common Shares valued at the Closing Price at the time the Option is exercised (including, pursuant to procedures approved by the Committee, by means of attestation of ownership of a sufficient number of Common Shares in lieu of actual delivery of such shares to the Company); *provided, however,* that such Common Shares are not subject to any pledge or other security interest and are Mature Shares and; (ii) by such other method as the Committee may permit in accordance with applicable law, in its sole discretion, including without limitation: (A) in other property having a fair market value (as determined by the Committee in its discretion) on the date of exercise equal to the Exercise Price or (B) if there is a public market for the Common Shares at such time, by means of a broker-assisted "cashless exercise" pursuant to which the Company is delivered a copy of irrevocable instructions to a stockbroker to sell the Common Shares otherwise deliverable upon the exercise of the Option and to deliver promptly to the Company an amount equal to the Exercise Price or (C) by a "net exercise" method whereby the Company withholds from the delivery of the Common Shares for which the Option was exercised that number of Common Shares having a Closing Price equal to the aggregate Exercise Price for the Common Shares for which the Option was exercised. Any fractional Common Shares shall be settled in cash.

(e) *Notification upon Disqualifying Disposition of an Incentive Stock Option*. Each Participant awarded an Incentive Stock Option under this Plan shall notify the Company in writing immediately after the date he makes a disqualifying disposition of

any Common Shares acquired pursuant to the exercise of such Incentive Stock Option. A disqualifying disposition is any disposition (including, without limitation, any sale) of such Common Shares before the later of (A) two years after the Date of Grant of the Incentive Stock Option or (B) one year after the date of exercise of the Incentive Stock Option. The Company may, if determined by the Committee and in accordance with procedures established by the Committee, retain possession of any Common Shares acquired pursuant to the exercise of an Incentive Stock Option as agent for the applicable Participant until the end of the period described in the preceding sentence.

(f) *Compliance With Laws, etc*. Notwithstanding the foregoing, in no event shall a Participant be permitted to exercise an Option in a manner that the Committee determines would violate the Sarbanes-Oxley Act of 2002, if applicable, or any other applicable law or the applicable rules and regulations of the Securities and Exchange Commission or the applicable rules and regulations of any securities exchange or inter-dealer quotation system on which the securities of the Company are listed or traded.

8. *Stock Appreciation Rights*.

(a) *Generally*. Each SAR granted under this Plan shall be evidenced by an Award agreement (whether in paper or electronic medium (including email or the posting on a web site maintained by the Company or a third party under contract with the Company)). Each SAR so granted shall be subject to the conditions set forth in this Section 8, and to such other conditions not inconsistent with this Plan as may be reflected in the applicable Award agreement. Any Option granted under this Plan may include tandem SARs. The Committee also may award SARs to Eligible Persons independent of any Option.

(b) *Exercise Price*. The Exercise Price per Common Share for each Option shall not be less than 100% of the Fair Market Value of such share determined as of the Date of Grant.

(c) *Vesting and Expiration*. A SAR granted in connection with an Option shall become exercisable and shall expire according to the same vesting schedule and expiration provisions as the corresponding Option. A SAR granted independent of an Option shall vest and become exercisable and shall expire in such manner and on such date or dates determined by the Committee and shall expire after such period, not to exceed ten years, as may be determined by the Committee (the "*SAR Period*"); *provided, however*, that notwithstanding any vesting dates set by the Committee, the Committee may, in its sole discretion, accelerate the exercisability of any SAR, which acceleration shall not affect the terms and conditions of such SAR other than with respect to exercisability. Unless otherwise provided by the Committee in an Award agreement:

(i) a SAR shall vest and become exercisable with respect to 100% of the Common Shares subject to such SAR on the third anniversary of the Date of Grant;

(ii) the unvested portion of a SAR shall expire upon termination of employment or service of the Participant granted the SAR, and the vested portion of such SAR shall remain exercisable for:

(A) one year following termination of employment or service by reason of such Participant's death or Disability (with the determination of Disability to be made by the Committee on a case by case basis), but not later than the expiration of the SARPeriod;

(B) for directors, officers and employees of the Company only, for the remainder of the SAR Period following termination of employment or service by reason of such Participant's Retirement;

(C) 90 calendar days following termination of employment or service for any reason other than such Participant's death, Disability or Retirement, and other than such Participant's termination of employment or service for Cause, but not later than the expiration of the SAR Period; and

(iii) both the unvested and the vested portion of a SAR shall expire immediately upon the termination of the Participant's employment or service by the Company for Cause.

(d) *Method of Exercise*. SARs that have become exercisable may be exercised by delivery of written or electronic notice of exercise to the Company in accordance with the terms of the Award, specifying the number of SARs to be exercised and the date

on which such SARs were awarded. Notwithstanding the foregoing, if on the last day of the Option Period (or in the case of a SAR independent of an option, the SAR Period), the Closing Price exceeds the Strike Price, the Participant has not exercised the SAR or the corresponding Option (if applicable), and neither the SAR nor the corresponding Option (if applicable) has expired, such SAR shall be deemed to have been exercised by the Participant on such last day and the Company shall make the appropriate payment therefor.

(e) *Payment*. Upon the exercise of a SAR, the Company shall pay to the Participant an amount equal to the number of shares subject to the SAR that are being exercised multiplied by the excess, if any, of the Closing Price of one Common Share on the exercise date over the Strike Price, less an amount equal to any federal, state, local and non-U.S. income and employment taxes required to be withheld. The Company shall pay such amount in cash, in Common Shares valued at fair market value, or any combination thereof, as determined by the Committee. Any fractional Common Share shall be settled in cash.

9. *Restricted Stock and Restricted Stock Units*.

(a) *Generally*. Each grant of Restricted Stock and Restricted Stock Units shall be evidenced by an Award agreement (whether in paper or electronic medium (including email or the posting on a web site maintained by the Company or a third party under contract with the Company)). Each such grant shall be subject to the conditions set forth in this Section 9, and to such other conditions not inconsistent with this Plan as may be reflected in the applicable Award agreement.

(b) *Restricted Accounts; Escrow or Similar Arrangement*. Upon the grant of Restricted Stock, a book entry in a restricted account shall be established in the Participant's name at the Company's transfer agent and, if the Committee determines that the Restricted Stock shall be held by the Company or in escrow rather than held in such restricted account pending the release of the applicable restrictions, the Committee may require the Participant to additionally execute and deliver to the Company (i) an escrow agreement satisfactory to the Committee, if applicable, and (ii) the appropriate share power (endorsed in blank) with respect to the Restricted Stock covered by such agreement. If a Participant shall fail to execute an agreement evidencing an Award of Restricted Stock and, if applicable, an escrow agreement and blank share power within the amount of time specified by the Committee, the Award shall be null and void *ab initio*. Subject to the restrictions set forth in this Section 9 and the applicable Award agreement, the Participant generally shall have the rights and privileges of a stockholder as to such Restricted Stock, including without limitation the right to vote such Restricted Stock and the right to receive dividends, if applicable. To the extent shares of Restricted Stock are forfeited, any share certificates issued to the Participant evidencing such shares shall be returned to the Company, and all rights of the Participant to such shares and as a stockholder with respect thereto shall terminate without further obligation on the part of the Company.

(c) *Vesting; Acceleration of Lapse of Restrictions*. Unless otherwise provided by the Committee in an Award agreement: (i) the Restricted Period shall lapse with respect to 100% of the Restricted Stock and Restricted Stock Units on the third (3^{rd}) anniversary of the Date of Grant; and (ii) the unvested portion of Restricted Stock and Restricted Stock Units shall terminate and be forfeited upon termination of employment or service of the Participant granted the applicable Award.

(d) *Delivery of Restricted Stock and Settlement of Restricted Stock Units*. (i) Upon the expiration of the Restricted Period with respect to any shares of Restricted Stock, the restrictions set forth in the applicable shall be of no further force or effect with respect to such shares, except as set forth in the applicable Award agreement. If an escrow arrangement is used, upon such expiration, the Company shall deliver to the Participant, or his beneficiary, without charge, the share certificate evidencing the shares of Restricted Stock that have not then been forfeited and with respect to which the Restricted Period has expired (rounded down to the nearest full share). Dividends, if any, that may have been withheld by the Committee and attributable to any particular share of Restricted Stock shall be distributed to the Participant in cash or, at the sole discretion of the Committee, in Common Shares having a Closing Price equal to the amount of such dividends, upon the release of restrictions on such share and, if such share is forfeited, the Participant shall have no right to such dividends (except as otherwise set forth by the Committee in the applicable Award agreement).

(ii) Unless otherwise provided by the Committee in an Award agreement, upon the expiration of the Restricted Period with respect to any outstanding Restricted Stock Units, the Company shall deliver to the Participant, or his beneficiary, without charge, one Common Share for each such outstanding Restricted Stock Unit; *provided, however*, that the Committee may, in its sole discretion and subject to the requirements of Section 409A of the Code, elect to (i) pay cash or part cash and part Common Share in lieu of delivering only Common Shares in respect of such Restricted Stock Units or (ii) defer the delivery of Common Shares (or cash or part Common Shares and part cash, as the case may be) beyond the expiration of the Restricted Period if such delivery would result in a violation of applicable law until such time as is no longer the case. If a cash payment is made in lieu of delivering Common Shares, the amount of such payment shall be equal to the Closing Price of the Common Shares as of the date on which the Restricted Period lapsed with respect to such Restricted Stock Units, less an amount equal to any federal, state, local and non-U.S. income and employment taxes required to be withheld.

10. *Stock Bonus Awards*. The Committee may issue unrestricted Common Shares, or other Awards denominated in Common Shares, under this Plan to Eligible Persons, either alone or in tandem with other awards, in such amounts as the Committee shall from time to time in its sole discretion determine. Each Stock Bonus Award granted under this Plan shall be evidenced by an Award agreement (whether in paper or electronic medium (including email or the posting on a web site maintained by the Company or a third party under contract with the Company)). Each Stock Bonus Award so granted shall be subject to such conditions not inconsistent with this Plan as may be reflected in the applicable Award agreement.

11. *Performance Compensation Awards*.

(a) *Generally*. The Committee shall have the authority, at the time of grant of any Award described in Sections 7 through 10 of this Plan, to designate such Award as a Performance Compensation Award intended to qualify as "performance-based compensation" under Section 162(m) of the Code. The Committee shall have the authority to make an award of a cash bonus to any Participant and designate such Award as a Performance Compensation Award intended to qualify as "performance-based compensation" under Section 162(m) of the Code.

(b) *Discretion of Committee with Respect to Performance Compensation Awards*. With regard to a particular Performance Period, the Committee shall have sole discretion to select the length of such Performance Period, the type(s) of Performance Compensation Awards to be issued, the Performance Criteria that will be used to establish the Performance Goal(s), the kind(s) and/or level(s) of the Performance Goals(s) that is (are) to apply and the Performance Formula. Within the first 90 calendar days of a Performance Period (or, if longer or shorter, within the maximum period allowed under Section 162(m) of the Code, if applicable), the Committee shall, with regard to the Performance Compensation Awards to be issued for such Performance Period, exercise its discretion with respect to each of the matters enumerated in the immediately preceding sentence and record the same in writing.

(c) *Performance Criteria*. The Performance Criteria that will be used to establish the Performance Goal(s) shall be based on the attainment of specific levels of performance of the Company and/or one or more Affiliates, divisions or operational units, or any combination of the foregoing, as determined by the Committee. Any one or more of the Performance Criteria adopted by the Committee may be used on an absolute or relative basis to measure the performance of the Company and/or one or more Affiliates as a whole or any business unit(s) of the Company and/or one or more Affiliates or any combination thereof, as the Committee may deem appropriate, or any of the above Performance Criteria may be compared to the performance of a selected group of comparison companies, or a published or special index that the Committee, in its sole discretion, deems appropriate, or as compared to various stock market indices. The Committee also has the authority to provide for accelerated vesting of any Award based on the achievement of Performance Goals pursuant to the Performance Criteria specified in this paragraph. To the extent required under Section 162(m) of the Code, the Committee shall, within the first 90 calendar days of a Performance Period (or, if longer or shorter, within the maximum period allowed under Section 162(m) of the Code), define in an objective fashion the manner of calculating the Performance Criteria it selects to use for such Performance Period and thereafter promptly communicate such Performance Criteria to the Participant.

(d) *Modification of Performance Goal(s)*. In the event that applicable tax and/or securities laws change to permit Committee discretion to alter the governing Performance Criteria without obtaining stockholder approval of such alterations, the Committee shall have sole discretion to make such alterations without obtaining stockholder approval. The Committee is authorized at any time during the first 90 calendar days of a Performance Period (or, if longer or shorter, within the maximum period allowed under Section 162(m) of the Code, if applicable), or at any time thereafter to the extent the exercise of such authority at such time would not cause the Performance Compensation Awards granted to any Participant for such Performance Period to fail to qualify as "performance-

based compensation" under Section 162(m) of the Code, in its sole discretion, to adjust or modify the calculation of a Performance Goal for such Performance Period, based on and in order to appropriately reflect the following events: (i) asset write-downs; (ii) litigation or claim judgments or settlements; (iii) the effect of changes in tax laws, accounting principles, or other laws or regulatory rules affecting reported results; (iv) any reorganization and restructuring programs; (v) extraordinary nonrecurring items as described in Accounting Principles Board Opinion No. 30 (or any successor pronouncement thereto) and/or in management's discussion and analysis of financial condition and results of operations appearing in the Company's annual report to stockholders for the applicable year; (vi) acquisitions or divestitures; (vii) any other specific unusual or nonrecurring events, or objectively determinable category thereof; (viii) foreign exchange gains and losses; and (ix) a change in the Company's fiscal year.

(e) *Payment of Performance Compensation Awards*.

(i) *Condition to Receipt of Payment*. Unless otherwise provided in the applicable Award agreement, a Participant must be employed by the Company on the last day of a Performance Period to be eligible for payment in respect of a Performance Compensation Award for such Performance Period.

(ii) *Limitation*. A Participant shall be eligible to receive payment in respect of a Performance Compensation Award only to the extent that: (A) the Performance Goals for such period are achieved; and (B) all or some of the portion of such Participant's Performance Compensation Award has been earned for the Performance Period based on the application of the Performance Formula to such achieved Performance Goals.

(iii) *Certification*. Following the completion of a Performance Period, the Committee shall review and certify in writing whether, and to what extent, the Performance Goals for the Performance Period have been achieved and, if so, calculate and certify in writing that amount of the Performance Compensation Awards earned for the period based upon the Performance Formula. The Committee shall then determine the amount of each Participant's Performance Compensation Award actually payable for the Performance Period and, in so doing, may apply Negative Discretion.

(iv) *Use of Negative Discretion*. In determining the actual amount of an individual Participant's Performance Compensation Award for a Performance Period, the Committee may reduce or eliminate the amount of the Performance Compensation Award earned under the Performance Formula in the Performance Period through the use of Negative Discretion if, in its sole judgment, such reduction or elimination is appropriate. The Committee shall not have the discretion, except as is otherwise provided in this Plan, to (A) grant or provide payment in respect of Performance Compensation Awards for a Performance Period if the Performance Goals for such Performance Period have not been attained; or (B) increase a Performance Compensation Award above the applicable limitations set forth in Section 5 of this Plan.

(f) *Timing of Award Payments*. Performance Compensation Awards granted for a Performance Period shall be paid to Participants as soon as administratively practicable following completion of the certifications required by this Section 11, but in no event later than two-and-one-half months following the end of the fiscal year during which the Performance Period is completed in order to comply with the short-term deferral rules under Section 1.409A-1(b)(4) of the Treasury Regulations. Notwithstanding the foregoing, payment of a Performance Compensation Award may be delayed, as permitted by Section 1.409A-2(b)(7)(i) of the Treasury Regulations, to the extent that the Company reasonably anticipates that if such payment were made as scheduled, the Company's tax deduction with respect to such payment would not be permitted due to the application of Section 162(m) of the Code.

12. *Changes in Capital Structure and Similar Events*. In the event of (a) any dividend or other distribution (whether in the form of cash, Common Shares, other securities or other property), recapitalization, stock split, reverse stock split, reorganization, merger, amalgamation, consolidation, split-up, split-off, combination, repurchase or exchange of Common Shares or other securities of the Company, issuance of warrants or other rights to acquire Common Shares or other securities of the Company, or other similar corporate transaction or event (including, without limitation, a Change in Control) that affects the Common Shares, or (b) unusual or nonrecurring events (including, without limitation, a Change in Control) affecting the Company, any Affiliate, or the financial statements of the Company or any Affiliate, or changes in applicable rules, rulings, regulations or other requirements of any governmental body or securities exchange or inter-dealer quotation system, accounting principles or law, such that in either case an adjustment is determined by the Committee in its sole discretion to be necessary or appropriate, then the Committee shall make any such adjustments that are equitable, including without limitation any or all of the following:

(i) adjusting any or all of (A) the number of Common Shares or other securities of the Company (or number and kind of other securities or other property) that may be delivered in respect of Awards or with respect to which Awards may be granted under this Plan (including, without limitation, adjusting any or all of the limitations under Section 5 of this Plan) and (B) the terms of any outstanding Award, including, without limitation, (1) the number of Common Shares or other securities of the Company (or number and kind of other securities or other property) subject to outstanding Awards or to which outstanding Awards relate, (2) the Exercise Price or Strike Price with respect to any Award or (3) any applicable performance measures (including, without limitation, Performance Criteria and Performance Goals);

(ii) providing for a substitution or assumption of Awards, accelerating the exercisability of, lapse of restrictions on, or termination of, Awards or providing for a period of time for exercise prior to the occurrence of such event; and

(iii) subject to the requirements of Section 409A of the Code, canceling any one or more outstanding Awards and causing to be paid to the holders thereof, in cash, Common Shares, other securities or other property, or any combination thereof, the value of such Awards, if any, as determined by the Committee (which if applicable may be based upon the price per Common Share received or to be received by other stockholders of the Company in such event), including without limitation, in the case of an outstanding Option or SAR, a cash payment in an amount equal to the excess, if any, of the fair market value (as of a date specified by the Committee) of the Common Shares subject to such Option or SAR over the aggregate Exercise Price or Strike Price of such Option or SAR, respectively (it being understood that, in such event, any Option or SAR having a per share Exercise Price or Strike Price equal to, or in excess of, the fair market value of a Common Share subject thereto may be canceled and terminated without any payment or consideration therefor);

provided, however, that in the case of any "equity restructuring" (within the meaning of the Financial Accounting Standards Board Statement of Financial Accounting Standards No. 123 (revised 2004) or ASC Topic 718, or any successor thereto), the Committee shall make an equitable or proportionate adjustment to outstanding Awards to reflect such equity restructuring. Any adjustment in Incentive Stock Options under this Section 12 (other than any cancellation of Incentive Stock Options) shall be made only to the extent not constituting a "modification" within the meaning of Section 424(h)(3) of the Code, and any adjustments under this Section 12 shall be made in a manner that does not adversely affect the exemption provided pursuant to Rule 16b-3 under the Exchange Act. The Company shall give each Participant notice of an adjustment hereunder and, upon notice, such adjustment shall be conclusive and binding for all purposes.

13. *Effect of Change in Control*. Except to the extent otherwise provided in an Award agreement, in the event of a Change in Control, notwithstanding any provision of this Plan to the contrary, with respect to all or any portion of a particular outstanding Award or Awards:

(a) all of the then outstanding Options and SARs shall immediately vest and become immediately exercisable as of a time prior to the Change in Control;

(b) the Restricted Period shall expire as of a time prior to the Change in Control (including without limitation a waiver of any applicable Performance Goals);

(c) Performance Periods in effect on the date the Change in Control occurs shall end on such date, and the Committee shall (i) determine the extent to which Performance Goals with respect to each such Performance Period have been met based upon such audited or unaudited financial information or other information then available as it deems relevant and (ii) cause the Participant to receive partial or full payment of Awards for each such Performance Period based upon the Committee's determination of the degree of attainment of the Performance Goals, or assuming that the applicable "target" levels of performance have been attained or on such other basis determined by the Committee.

To the extent practicable, any actions taken by the Committee under the immediately preceding clauses (a) through (c) shall occur in a manner and at a time which allows affected Participants the ability to participate in the Change in Control transactions with respect to the Common Shares subject to their Awards.

14. *Amendments and Termination*.

(a) *Amendment and Termination of this Plan*. The Board may amend, alter, suspend, discontinue, or terminate this Plan or any portion thereof at any time; provided, that (i) no amendment to the definition of Eligible Employee in Section 2, Section 5(i), Section 11(c) or Section 14(b) (to the extent required by the proviso in such Section 14(b)) shall be made without stockholder approval and (ii) no such amendment, alteration, suspension, discontinuation or termination shall be made without stockholder approval if such approval is necessary to comply with any tax or regulatory requirement applicable to this Plan (including, without limitation, as necessary to comply with any rules or requirements of any securities exchange or inter-dealer quotation system on which the Common Shares may be listed or quoted or to prevent the Company from being denied a tax deduction under Section 162(m) of the Code); *and, provided, further*, that any such amendment, alteration, suspension, discontinuance or termination that would materially and adversely affect the rights of any Participant or any holder or beneficiary of any Award theretofore granted shall not to that extent be effective without the prior written consent of the affected Participant, holder or beneficiary.

(b) *Amendment of Award Agreements*. The Committee may, to the extent consistent with the terms of any applicable Award agreement, waive any conditions or rights under, amend any terms of, or alter, suspend, discontinue, cancel or terminate, any Award theretofore granted or the associated Award agreement, prospectively or retroactively; *provided, however* that any such waiver, amendment, alteration, suspension, discontinuance, cancellation or termination that would materially and adversely affect the rights of any Participant with respect to any Award theretofore granted shall not to that extent be effective without the consent of the affected Participant; *and, provided, further*, that without stockholder approval, except as otherwise permitted under Section 12 of this Plan, (i) no amendment or modification may reduce the Exercise Price of any Option or the Strike Price of any SAR, (ii) the Committee may not cancel any outstanding Option or SAR and replace it with a new Option or SAR, another Award or cash or take any action that would have the effect of treating such Award as a new Award for tax or accounting purposes and (iii) the Committee may not take any other action that is considered a "repricing" for purposes of the stockholder approval rules of the applicable securities exchange or inter-dealer quotation system on which the Common Shares are listed or quoted.

15. *General*.

(a) *Award Agreements*. Each Award under this Plan shall be evidenced by an Award agreement, which shall be delivered to the Participant (whether in paper or electronic medium (including email or the posting on a web site maintained by the Company or a third party under contract with the Company)) and shall specify the terms and conditions of the Award and any rules applicable thereto, including without limitation, the effect on such Award of the death, Disability or termination of employment or service of a Participant, or of such other events as may be determined by the Committee. The Company's failure to specify any term of any Award in any particular Award agreement shall not invalidate such term, provided such terms was duly adopted by the Board or the Committee.

(b) *Nontransferability; Trading Restrictions*.

(i) Each Award shall be exercisable only by a Participant during the Participant's lifetime, or, if permissible under applicable law, by the Participant's legal guardian or representative. No Award may be assigned, alienated, pledged, attached, sold or otherwise transferred or encumbered by a Participant other than by will or by the laws of descent and distribution and any such purported assignment, alienation, pledge, attachment, sale, transfer or encumbrance shall be void and unenforceable against the Company or an Affiliate; provided that the designation of a beneficiary shall not constitute an assignment, alienation, pledge, attachment, sale, transfer or encumbrance.

(ii) Notwithstanding the foregoing, the Committee may, in its sole discretion, permit Awards (other than Incentive Stock Options) to be transferred by a Participant, with or without consideration, subject to such rules as the Committee may adopt consistent with any applicable Award agreement to preserve the purposes of this Plan, to: (A) any person who is a "family member" of the Participant, as such term is used in the instructions to Form S-8 under the Securities Act (collectively, the "*Immediate Family Members*"); (B) a trust solely for the benefit of the Participant and his or her Immediate Family Members; or (C) a partnership or limited liability company whose only partners or stockholders are the Participant and his or her Immediate Family Members; or (D) any other transferee as may be approved either (I) by the Board or the Committee in its sole discretion, or (II) as provided in the applicable Award agreement (each transferee described in clauses (A), (B) (C) and (D) above is hereinafter referred to as a "*Permitted Transferee*"); provided, that the Participant gives the Committee advance written notice describing the terms and conditions of the proposed transfer and the Committee notifies the Participant in writing that such a transfer would comply with the requirements of this Plan.

(iii) The terms of any Award transferred in accordance with the immediately preceding sentence shall apply to the Permitted Transferee and any reference in this Plan, or in any applicable Award agreement, to a Participant shall be deemed to refer to the Permitted Transferee, except that (A) Permitted Transferees shall not be entitled to transfer any Award, other than by will or the laws of descent and distribution; (B) Permitted Transferees shall not be entitled to exercise any transferred Option unless there shall be in effect a registration statement on an appropriate form covering the Common Shares to be acquired pursuant to the exercise of such Option if the Committee determines, consistent with any applicable Award agreement, that such a registration statement is necessary or appropriate; (C) the Committee or the Company shall not be required to provide any notice to a Permitted Transferee, whether or not such notice is or would otherwise have been required to be given to the Participant under this Plan or otherwise; and (D) the consequences of the termination of the Participant's employment by, or services to, the Company or an Affiliate under the terms of this Plan and the applicable Award agreement shall continue to be applied with respect to the Participant, including, without limitation, that an Option shall be exercisable by the Permitted Transferee only to the extent, and for the periods, specified in this Plan and the applicable Award agreement.

(iv) The Committee shall have the right, either on an Award-by-Award basis or as a matter of policy for all Awards or one or more classes of Awards, to condition the delivery of vested Common Shares received in connection with such Award on the Participant's agreement to such restrictions as the Committee may determine.

(c) *Tax Withholding*.

(i) A Participant shall be required to pay to the Company or any Affiliate, or the Company or any Affiliate shall have the right and is hereby authorized to withhold, from any cash, Common Shares, other securities or other property deliverable under any Award or from any compensation or other amounts owing to a Participant, the amount (in cash, Common Shares, other securities or other property) of any required withholding taxes in respect of an Award, its exercise, or any payment or transfer under an Award or under this Plan and to take such other action as may be necessary in the opinion of the Committee or the Company to satisfy all obligations for the payment of such withholding and taxes.

(ii) Without limiting the generality of clause (i) above, the Committee may, in its sole discretion, permit a Participant to satisfy, in whole or in part, the foregoing withholding liability by (A) the delivery of Common Shares (which are not subject to any pledge or other security interest and are Mature Shares) owned by the Participant having a fair market value equal to such withholding liability or (B) having the Company withhold from the number of Common Shares otherwise issuable or deliverable pursuant to the exercise or settlement of the Award a number of shares with a fair market value equal to such withholding liability (but no more than the minimum required statutory withholding liability).

(d) *No Claim to Awards; No Rights to Continued Employment; Waiver*. No employee of the Company or an Affiliate, or other person, shall have any claim or right to be granted an Award under this Plan or, having been selected for the grant of an Award, to be selected for a grant of any other Award. There is no obligation for uniformity of treatment of Participants or holders or beneficiaries of Awards. The terms and conditions of Awards and the Committee's determinations and interpretations with respect thereto need not be the same with respect to each Participant and may be made selectively among Participants, whether or not such Participants are similarly situated. Neither this Plan nor any action taken hereunder shall be construed as giving any Participant any right to be retained in the employ or service of the Company or an Affiliate, nor shall it be construed as giving any Participant any rights to continued service on the Board. The Company or any of its Affiliates may at any time dismiss a Participant from employment or discontinue any consulting relationship, free from any liability or any claim under this Plan, unless otherwise expressly provided in this Plan or any Award agreement. By accepting an Award under this Plan, a Participant shall thereby be deemed to have waived any claim to continued exercise or vesting of an Award or to damages or severance entitlement related to non-continuation of the Award beyond the period provided under this Plan or any Award agreement, notwithstanding any provision to the contrary in any written employment contract or other agreement between the Company and its Affiliates and the Participant, whether any such agreement is executed before, on or after the Date of Grant.

(e) *International Participants*. With respect to Participants who reside or work outside of the United States of America and who are not (and who are not expected to be) "covered employees" within the meaning of Section 162(m) of the Code, the Committee

may in its sole discretion amend the terms of this Plan or outstanding Awards (or establish a sub-plan) with respect to such Participants in order to conform such terms with the requirements of local law or to obtain more favorable tax or other treatment for a Participant, the Company or its Affiliates.

(f) *Designation and Change of Beneficiary*. Each Participant may file with the Committee a written designation of one or more persons as the beneficiary(ies) who shall be entitled to receive the amounts payable with respect to an Award, if any, due under this Plan upon his or her death. A Participant may, from time to time, revoke or change his or her beneficiary designation without the consent of any prior beneficiary by filing a new designation with the Committee. The last such designation filed with the Committee shall be controlling; *provided, however*, that no designation, or change or revocation thereof, shall be effective unless received by the Committee prior to the Participant's death, and in no event shall it be effective as of a date prior to such receipt. If no beneficiary designation is filed by a Participant, the beneficiary shall be deemed to be his or her spouse or, if the Participant is unmarried at the time of death, his or her estate. Upon the occurrence of a Participant's divorce (as evidenced by a final order or decree of divorce), any spousal designation previously given by such Participant shall automatically terminate.

(g) *Termination of Employment/Service*. Unless determined otherwise by the Committee at any point following such event: (i) neither a temporary absence from employment or service due to illness, vacation or leave of absence nor a transfer from employment or service with the Company to employment or service with an Affiliate (or vice-versa) shall be considered a termination of employment or service with the Company or an Affiliate; and (ii) if a Participant's employment with the Company and its Affiliates terminates, but such Participant continues to provide services to the Company and its Affiliates in a non-employee capacity (or vice-versa), such change in status shall not be considered a termination of employment with the Company or an Affiliate.

(h) *No Rights as a Stockholder*. Except as otherwise specifically provided in this Plan or any Award agreement, no person shall be entitled to the privileges of ownership in respect of Common Shares that are subject to Awards hereunder until such shares have been issued or delivered to that person.

(i) *Government and Other Regulations*.

(i) The obligation of the Company to settle Awards in Common Shares or other consideration shall be subject to all applicable laws, rules, and regulations, and to such approvals by governmental agencies as may be required. Notwithstanding any terms or conditions of any Award to the contrary, the Company shall be under no obligation to offer to sell or to sell, and shall be prohibited from offering to sell or selling, any Common Shares pursuant to an Award unless such shares have been properly registered for sale pursuant to the Securities Act with the Securities and Exchange Commission or unless the Company has received an opinion of counsel, satisfactory to the Company, that such shares may be offered or sold without such registration pursuant to an available exemption therefrom and the terms and conditions of such exemption have been fully complied with. The Company shall be under no obligation to register for sale under the Securities Act any of the Common Shares to be offered or sold under this Plan. The Committee shall have the authority to provide that all certificates for Common Shares or other securities of the Company or any Affiliate delivered under this Plan shall be subject to such stop transfer orders and other restrictions as the Committee may deem advisable under this Plan, the applicable Award agreement, the federal securities laws, or the rules, regulations and other requirements of the Securities and Exchange Commission, any securities exchange or inter-dealer quotation system upon which such shares or other securities are then listed or quoted and any other applicable federal, state, local or non-U.S. laws, and, without limiting the generality of Section 9 of this Plan, the Committee may cause a legend or legends to be put on any such certificates to make appropriate reference to such restrictions. Notwithstanding any provision in this Plan to the contrary, the Committee reserves the right to add any additional terms or provisions to any Award granted under this Plan that it in its sole discretion deems necessary or advisable in order that such Award complies with the legal requirements of any governmental entity to whose jurisdiction the Award is subject.

(ii) The Committee may cancel an Award or any portion thereof if it determines, in its sole discretion, that legal or contractual restrictions and/or blockage and/or other market considerations would make the Company's acquisition of Common Shares from the public markets, the Company's issuance of Common Shares to the Participant, the Participant's acquisition of Common Shares from the Company and/or the Participant's sale of Common Shares to the public markets, illegal, impracticable or inadvisable. If the Committee determines to cancel all or any portion of an Award in accordance with the foregoing, unless doing so would violate Section 409A of the Code, the Company shall pay to the Participant an amount equal to the excess of (A) the aggregate fair market value of the Common Shares subject to such Award or portion thereof canceled (determined as of the applicable exercise date, or the date that the shares would have been vested or delivered, as applicable), over (B) the aggregate Exercise Price or Strike Price (in the case of an

Option or SAR, respectively) or any amount payable as a condition of delivery of Common Shares (in the case of any other Award). Such amount shall be delivered to the Participant as soon as practicable following the cancellation of such Award or portion thereof. The Committee shall have the discretion to consider and take action to mitigate the tax consequence to the Participant in cancelling an Award in accordance with this clause.

(j) *Payments to Persons Other Than Participants*. If the Committee shall find that any person to whom any amount is payable under this Plan is unable to care for his affairs because of illness or accident, or is a minor, or has died, then any payment due to such person or his estate (unless a prior claim therefor has been made by a duly appointed legal representative) may, if the Committee so directs the Company, be paid to his spouse, child, relative, an institution maintaining or having custody of such person, or any other person deemed by the Committee to be a proper recipient on behalf of such person otherwise entitled to payment. Any such payment shall be a complete discharge of the liability of the Committee and the Company therefor.

(k) *Nonexclusivity of this Plan*. Neither the adoption of this Plan by the Board nor the submission of this Plan to the stockholders of the Company for approval shall be construed as creating any limitations on the power of the Board to adopt such other incentive arrangements as it may deem desirable, including, without limitation, the granting of stock options or other equity-based awards otherwise than under this Plan, and such arrangements may be either applicable generally or only in specific cases.

(l) *No Trust or Fund Created*. Neither this Plan nor any Award shall create or be construed to create a trust or separate fund of any kind or a fiduciary relationship between the Company or any Affiliate, on the one hand, and a Participant or other person or entity, on the other hand. No provision of this Plan or any Award shall require the Company, for the purpose of satisfying any obligations under this Plan, to purchase assets or place any assets in a trust or other entity to which contributions are made or otherwise to segregate any assets, nor shall the Company maintain separate bank accounts, books, records or other evidence of the existence of a segregated or separately maintained or administered fund for such purposes. Participants shall have no rights under this Plan other than as general unsecured creditors of the Company, except that insofar as they may have become entitled to payment of additional compensation by performance of services, they shall have the same rights as other employees under general law.

(m) *Reliance on Reports*. Each member of the Committee and each member of the Board shall be fully justified in acting or failing to act, as the case may be, and shall not be liable for having so acted or failed to act in good faith, in reliance upon any report made by the independent public accountant of the Company and its Affiliates and/or any other information furnished in connection with this Plan by any agent of the Company or the Committee or the Board, other than himself.

(n) *Relationship to Other Benefits*. No payment under this Plan shall be taken into account in determining any benefits under any pension, retirement, profit sharing, group insurance or other benefit plan of the Company except as otherwise specifically provided in such other plan.

(o) *Governing Law*. The Plan shall be governed by and construed in accordance with the internal laws of the State of Delaware, without giving effect to the conflict of laws provisions.

(p) *Severability*. If any provision of this Plan or any Award or Award agreement is or becomes or is deemed to be invalid, illegal, or unenforceable in any jurisdiction or as to any person or entity or Award, or would disqualify this Plan or any Award under any law deemed applicable by the Committee, such provision shall be construed or deemed amended to conform to the applicable laws in the manner that most closely reflects the original intent of the Award or the Plan, or if it cannot be construed or deemed amended without, in the determination of the Committee, materially altering the intent of this Plan or the Award, such provision shall be construed or deemed stricken as to such jurisdiction, person or entity or Award and the remainder of this Plan and any such Award shall remain in full force and effect.

(q) *Obligations Binding on Successors*. The obligations of the Company under this Plan shall be binding upon any successor corporation or organization resulting from the merger, amalgamation, consolidation or other reorganization of the Company, or upon any successor corporation or organization succeeding to substantially all of the assets and business of the Company.

(r) *Code Section 162(m) Approval*. If so determined by the Committee, the provisions of this Plan regarding Performance Compensation Awards shall be disclosed and reapproved by stockholders no later than the first stockholder meeting that occurs in the fifth year following the year in which stockholders previously approved such provisions, in each case in order for certain

Awards granted after such time to be exempt from the deduction limitations of Section 162(m) of the Code. Nothing in this clause, however, shall affect the validity of Awards granted after such time if such stockholder approval has not been obtained.

(s) *Expenses; Gender; Titles and Headings*. The expenses of administering this Plan shall be borne by the Company and its Affiliates. Masculine pronouns and other words of masculine gender shall refer to both men and women. The titles and headings of the sections in this Plan are for convenience of reference only, and in the event of any conflict, the text of this Plan, rather than such titles or headings shall control.

(t) *Other Agreements*. Notwithstanding the above, the Committee may require, as a condition to the grant of and/or the receipt of Common Shares under an Award, that the Participant execute lock-up, stockholder or other agreements, as it may determine in its sole and absolute discretion.

(u) *Section 409A.* The Plan and all Awards granted hereunder are intended to comply with, or otherwise be exempt from, the requirements of Section 409A of the Code. The Plan and all Awards granted under this Plan shall be administered, interpreted, and construed in a manner consistent with Section 409A of the Code to the extent necessary to avoid the imposition of additional taxes under Section 409A(a)(1)(B) of the Code. Notwithstanding anything in this Plan to the contrary, in no event shall the Committee exercise its discretion to accelerate the payment or settlement of an Award where such payment or settlement constitutes deferred compensation within the meaning of Section 409A of the Code unless, and solely to the extent that, such accelerated payment or settlement is permissible under Section 1.409A-3(j)(4) of the Treasury Regulations. If a Participant is a "specified employee" (within the meaning of Section 1.409A-1(i) of the Treasury Regulations) at any time during the twelve (12)-month period ending on the date of his termination of employment, and any Award hereunder subject to the requirements of Section 409A of the Code is to be satisfied on account of the Participant's termination of employment, satisfaction of such Award shall be suspended until the date that is six (6) months after the date of such termination of employment.

(v) *Payments*. Participants shall be required to pay, to the extent required by applicable law, any amounts required to receive Common Shares under any Award made under this Plan.

* * *

Exhibit 10.2

EMPLOYMENT AGREEMENT

THIS EMPLOYMENT AGREEMENT (the "**Agreement**") dated as of May 30, 2013 (the "**Effective Date**"), is by and between Advanced Plasma Therapies, Inc., a Delaware corporation, with its principal place of business at 1 Monroe Avenue, Lawrenceville, New Jersey 08648 (the "**Company**") and Michael Preston, having a principal residence at 8 Abbey Road, Orangeburg, NY 10962 (the "**Executive**").

WHEREAS, the Company has heretofore entered into an investment banking agreement, dated November 9, 2010 (the "**Capidem Agreement**"), with Capidem Associates, a U.K. regulated investment bank (together with its affiliates and successors, "**Capidem**"), pursuant to which Capidem was, for retainer and success-based fees and other compensation agreed upon, to provide strategic advisory and capital raising services to the Company;

WHEREAS, Executive was previously associated with Capidem and has provided services to the Company under the Capidem Agreement;

WHEREAS, Executive has spent increasing amounts of time and effort on Company affairs, and therefore it has been proposed that the Capidem Agreement be restructured so as to reflect the current facts and circumstances of the Company and Executive; and

WHEREAS, in light of the foregoing, the Company desires to retain the services of Executive as an employee of the Company, and Executive desires to accept such employee, in each case on the terms and conditions set forth herein.

NOW THEREFORE, in consideration of the mutual premises, covenants and agreements hereinafter set forth, and for other good and valuable consideration, the receipt, and legal adequacy of which is hereby acknowledged, the parties, intending to be legally bound, hereby agree as follows:

1. Term; Capidem Agreement.

(a) The Company hereby employs Executive, and Executive hereby accepts employment by the Company, as the Company's Executive Chairman and Acting Chief Financial Officer. The term of the Company's employment shall be for a period of three (3) years, commencing on the Effective Date and subject to termination as provided in Section 8 hereof (the "**Employment Term**"). At the conclusion of the initial three (3) year period of the Employment Term (the "**Initial Term**"), this Agreement and the Employment Term shall automatically renew for successive one (1) year terms (each, a "**Renewal Term**") unless either party gives sixty (60) days' advance written notice of such party's intention not to renew this Agreement at the conclusion of the next Initial Term or any Renewal Term.

(b) As of the Effective Date, the Company and Capidem will terminate the Capidem Agreement pursuant to a separate letter agreement.

2. Position and Duties.

(a) Responsibilities. Executive will be report to the Company's Board of Directors (the "**Board**"). Within the limitations established by the Bylaws of the Company, Executive shall have each and all of the duties and responsibilities customarily associated with the position of Executive Chairman and Acting Chief Financial Officer and such other or different duties on behalf of the Company as may be assigned from time to time by the Board.

(b) Devotion of Executive's Time. Executive shall devote no less than seventy-five percent (75%) of his business time, labor, skill and energy to conducting the business and affairs of the Company and to performing his duties and responsibilities to the Company as set forth in Section 2(a) hereof, unless otherwise approved by the Board. Executive shall perform Executive's duties and responsibilities to the Company diligently, competently, faithfully and to the best of his ability.

(c) Representations. Executive represents and warrant to the Company that Executive has the right to negotiate and enter into this Agreement, and Executive's execution, delivery and performance of this Agreement does not breach, interfere with or conflict with any other contractual agreement, covenant not to compete, option, right of first refusal or other existing business relationship or any judgment or order, in each case, to which Executive is a party or otherwise subject. Executive acknowledges that this representation and warranty is a material inducement to the Company entering into this Agreement and in the event Executive breaches this representation and warranty, Executive agrees to indemnify and hold harmless the Company from any and all claims, actions, losses, damages, including, but not limited to, reasonable attorney's fees and expenses incurred by the Company as a result of such breach.

3. Compensation.

(a) Salary. During the Employment Term and commencing from the consummation of (or a portion of, as the case may be) the Company's initial round of financing with minimum gross proceeds to the Company of not less than $5 million (the "**First Funding Milestone**"), the Company shall pay to Executive an annual cash salary of $180,000 (the "**Base Salary**"), payable in accordance with prevailing Company policy. Notwithstanding the foregoing, during the period between March 1, 2013 and the date when the First Funding Milestone is reached, Executive shall, instead of receiving the Base Salary, receive a monthly salary of $10,000 (the "**Monthly Salary**"), such Monthly Salary to be increased to $12,500 per month after the first $2 million of funding is unconditionally committed to being invested in the Company (regardless whether such funding has in fact been received by the Company in cash); *provided, however*, that Executive shall not be entitled to any employee benefits other than the Monthly Salary prior to the date when the First Funding Milestone is reached, such benefits (as established by the Board) to commence upon the occurrence of the First Funding Milestone.

(b) Bonus.

(i) Discretionary Bonus. Executive shall be eligible to receive an annual bonus in cash or in securities of the Company or otherwise. Such bonus, if any, shall be in an amount and type as may be determined at the sole discretion of the Board.

(ii) Mandatory Bonus. In addition to any discretionary bonus provided for above, the Company shall pay to Executive mandatory bonus in the amounts and at the times as set forth below:

(A) a cash amount equal to $75,000, payable within fifteen (15) days of the achievement of the First Funding Milestone; *provided, however,* that such amount shall accrue pro rata prior to the achievement of the First Funding Milestone based on the percentage determined by dividing $5 million by the amount of funding unconditionally committed to the Company, either prior to or following the Effective Date, including, for the avoidance of doubt, the $1 million in funds committed to the Company by Kathi Glass (as such, an amount equal to $15,000 of such bonus as accrued as of the Effective Date);

(B) a cash amount equal to $175,000, payable within fifteen (15) days of the date when, pursuant to predetermined criteria reviewed by the Board, the primary endpoints of the Company's anticipated Phase IIb clinical trial of the Company's nitric oxide/plasma product are achieved such that the Company may proceed to Phase III trials (the "**First Trial Milestone**"); and

(C) a cash amount equal to $160,000, payable within fifteen (15) days of the date when, pursuant to predetermined criteria reviewed by the Board, the primary endpoints of the Company's pivotal Phase III trial for its nitric oxide/plasma product have been achieved (the "**Second Trial Milestone**").

(c) Grant of Warrants. Within fifteen (15) days of each of dates when the First Funding Milestone, the First Trial Milestone, or the Second Milestone is achieved, respectively, Executive shall be granted warrants to purchase common stock of the Company (the "**Warrants**") in an amount equal to 3.75% of the issued and outstanding voting capital stock of the Company on the date of issuance, exercisable for a period of seven (7) years after the date of issuance, at an exercise price equal to the price per share in the most recently completed round of funding for the Company. The form of Warrant shall contain customary terms and provisions for an instrument of this type and shall be subject to review and approval by Executive.

4. Benefits.

(a) Vacation Time. Executive shall be entitled to four (4) weeks paid vacation time and holidays per annum; *provided, however,* that Executive shall not be able to take vacation time at any time that would materially interfere with the business or operations of the Company. Executive shall not be permitted to carry over unused vacation time during the Employment Term.

(b) Reimbursement for Expenses. The Company shall promptly reimburse Executive for all reasonable and necessary business expenses incurred by Executive in accordance with his duties and responsibilities hereunder, including, without limitation, telephone, facsimile, travel, lodging, entertainment and other customary charges incurred by Executive on behalf of the Company in the performance of his duties hereunder, upon the presentation by Executive of appropriate evidence and documentation of the incurrence thereof in accordance with the Company's policies from time to time in effect.

(c) Other. In addition, Executive shall receive such additional compensation or other benefits as are provided to Company employees generally and similarly-situated Company executives specifically, in each case as established by the Board in its discretion.

5. Deductions. All amounts payable or which become payable to Executive under any provision of this Agreement shall be subject to such deductions and withholdings as is required by applicable law.

6. Indemnification. The Company shall indemnify Executive in his capacity as an officer of the Company to the fullest extent permitted by applicable law against all debts, judgments, costs, charges or expenses incurred or sustained by Executive in connection with any action, suit or proceeding to which Executive may be made a party by reason of his being or having been an officer of the Company, or because of actions taken by Executive which were believed by Executive to be in the best interests of the Company, and Executive shall be entitled to be covered by any directors' and officers' liability insurance policies which the Company may maintain for the benefit of its directors and officers, subject to the limitations of any such policies. The Company shall have the right to assume, with legal counsel of its choice, the defense of Executive in any such action, suit or proceeding for which the Company is providing indemnification to Executive. Should Executive determine to employ separate legal counsel in any such action, suit or proceeding, any costs and expenses of such separate legal counsel shall be the sole responsibility of Executive. If the Company does not assume the defense of any such action, suit or other proceeding, the Company shall, upon request of Executive, promptly advance or pay any amount for costs or expenses (including, without limitation, the reasonable legal fees and expenses of counsel retained by Executive) incurred by Executive in connection with any such action, suit or proceeding. The Company shall not be obligated to indemnify Executive against any actions that constitute, in the reasonable discretion of the Board, an act of gross negligence or willful misconduct or contrary to the general indemnification provisions of the Delaware General Corporation Law or the Company's certificate of incorporation or bylaws.

7. Termination.

(a) Termination by the Company upon Death. Executive's employment under this Agreement shall terminate immediately upon Executive's death, subject to Sections 8(a) and 8(b) hereof.

(b) Termination by the Company with Cause. The Company shall have the right to immediately terminate Executive's employment hereunder for Cause, subject to Sections 8(a) and 8(b) hereof. For purposes of this Agreement, the term "**Cause**" shall mean any of the following: (i) the repeated and demonstrated failure of Executive to substantially carry out the reasonable instructions of the Board, provided such instructions reasonably relate to and are not inconsistent with Executive's management position and standing, which such conduct is not cured within fifteen (15) days after receipt of written notice thereof by Executive from the Company; (ii) the breach by Executive of any of the terms or provisions of this Agreement or any other agreement between Executive, on the one hand, and the Company, on the other hand, on the part of Executive to be observed or performed, which failure or breach is not cured within fifteen (15) days after receipt of written notice thereof by Executive from the Company, (iii) Executive's knowing and willful neglect or refusal for any reason to attend to Executive's material duties and responsibilities under this Agreement which such conduct is not cured within fifteen (15) days after receipt of written notice thereof by Executive from the Company; (iv) any criminal liability of the Company which was substantially caused by the conduct of Executive; or (v) Executive's conviction by, or entry of a plea of guilty or *nolo contendere* in, a court of competent jurisdiction of an act of fraud, embezzlement or willful breach of fiduciary duty to the Company, or any crime constituting a felony.

(c) Termination by the Company upon Disability. If Executive shall be unable to substantially and materially perform his duties and responsibilities hereunder by reason of illness or other incapacity, his failure so to perform his duties will not be grounds for terminating his employment for Cause by the Company; *provided, however* should the period of such incapacity exceed six (6) months,

or fifty percent (50%) or more of the normal working days during any consecutive nine (9) month period (a "**Disability Occurrence**"), then the Company may immediately terminate Executive's employment hereunder due to the Disability Occurrence, subject to Sections 8(a) and 8(b) hereof.

(d) Termination by the Company with No Reason. The Company shall have the right to terminate Executive's employment hereunder prior to the expiration of the Employment Term on sixty (60) days prior written notice from the Company for "**No Reason**," subject to Sections 8(a) and 8(b) hereof.

(e) Termination by Executive. In the event that Executive terminates Executive's employment hereunder for any reason, Executive shall not be entitled to any benefits hereunder, effective upon the date of termination (after giving effect to the notice period provided for in this Section 7(e)). Executive hereby agrees to provide the Board with sixty (60) days written notice of any voluntary termination by Executive. Notwithstanding the foregoing, if Executive terminates this Agreement, the Company shall have the right to terminate this Agreement at any time during the sixty (60) day notice period.

8. Effect of Termination.

(a) Executive Rights to Receive.

(i) Upon termination of Executive's employment hereunder pursuant to Sections 7(a), 7(b) or 7(c), Executive (or his estate or heirs) shall be entitled to receive the following: (A) all accrued but unpaid Base Salary and/or Monthly Salary through the date of such termination; (B) all accrued but unpaid bonus amounts due and owing pursuant to Section 3(b) hereof through the date of such termination; (C) any post-termination rights available to Executive under and pursuant to the terms the Company's prevailing employee benefits policies; and (D) as applicable, his estate shall be entitled to receive any payments under any applicable life (other than key man life insurance in favor of the Company) or disability insurance plans that are properly payable that have not been paid.

(ii) Upon termination of Executive's employment hereunder pursuant to Sections 7(d), Executive (or his estate or heirs) shall be entitled to receive the following: (A) all items set forth in Section 8(a)(i) hereof and (B) a cash payment in an amount equal to the greater of one (1) year's Base Salary or payment through the balance of the Employment Term (or any applicable Renewal Term, as the case may be).

(iii) Upon the termination of this Agreement pursuant to the terms and conditions of Section 7(a), 7(c) or 7(d) hereof, Executive (or his estate or heirs) shall retain the right, on a post-termination basis, to receive any mandatory cash bonuses due upon achievement of the next applicable milestone as described in Sections 3(b)(ii)(A), (B) or (C) following such termination as if this Agreement had not been terminated, and upon the achievement of such applicable milestone, the Company shall promptly pay to Executive (or his estate or heirs) the applicable cash bonus.

(b) Treatment of Warrants.

(i) Upon the termination of this Agreement pursuant to the terms and conditions of Section 7(a), 7(c) or 7(d) hereof: (i) Executive shall have the full remaining term of the Warrants to exercise all vested Warrants; and (ii) all rights to any unvested Warrants shall immediately terminate with no further action required; *provided, however,* that, in this case of termination pursuant to Section 7(a), 7(c) or 7(d) hereof only, Executive (or his estate or heirs) shall retain the right, on a post-termination basis, to receive any unvested Warrants due upon achievement of the next applicable milestone as described in Section 3(c) following such termination as if this Agreement had not been terminated, and upon the achievement of such applicable milestone, the Company shall promptly issue to Executive (or his estate or heirs) the applicable number of Warrants.

(ii) Upon the termination of this Agreement pursuant to the terms and conditions of Section 7(b) and 7(e) hereof: (i) Executive shall have the full remaining term of the Warrants to exercise all vested Warrants; and (ii) all rights to any unvested Warrants shall immediately terminate with no further action required.

9. Restrictions Respecting Confidential Information, Non-Competition, etc.

(a) Acknowledgment of Executive. Executive acknowledges and agrees that by virtue of Executive's position and involvement with the business and affairs of the Company, Executive will develop substantial expertise and knowledge with respect to all aspects of the business, affairs and operations of the Company and will have access to all significant aspects of the business and operations of the Company and to confidential and proprietary information of the Company. As such, Executive acknowledges and agrees that the Company will be damaged if Executive were to breach or threaten to breach any of the provisions of this Section 9 or if Executive were to disclose or make unauthorized use of any confidential and proprietary information of the Company or otherwise engage in the activities prohibited by this Section 9. Accordingly, Executive expressly acknowledges and agrees that Executive is knowingly and voluntarily entering into this Agreement, and that the terms, provisions and conditions of this Section 9 are fair and reasonable and necessary to adequately protect the Company and its business.

(b) Confidentiality Agreement. Concurrently with the execution of this Agreement, Executive shall execute the Company's standard form of Confidentiality and Intellectual Property Assignment Agreement (the "**Confidentiality Agreement**"), the terms and provisions of which are incorporated herein by reference as binding and operative provisions of this Agreement.

(c) Non-Compete. During the Employment Term and for one (1) year after Executive ceases to be an employed by the Company, Executive shall not, directly or indirectly, manage, operate or control, or participate in the ownership, management, operation or control of, or otherwise become interested in (whether as an owner, stockholder, member, partner, lender, consultant, executive, officer, director, agent supplier, distributor or otherwise) any business which is directly competitive with the business of the Company or any of its subsidiaries or affiliates, or, directly or indirectly, induce or influence any person that has a business relationship with the Company or any of its subsidiaries or affiliates to discontinue or reduce the extent of such relationship. For purposes of this Agreement, Executive shall be deemed to be directly or indirectly interested in a business if he is engaged or interested in that business as a stockholder, director, officer, executive, agent, member, partner, individual proprietor, consultant, advisor or otherwise, but not if Executive's interest is limited solely to the ownership of not more than 4.99% of the securities of any class of equity securities of a corporation or other entity whose shares are listed or admitted to trade on a national securities exchange or are quoted on the Over the Counter Bulletin Board or similar public trading system.

(d) No Solicitation. During the Employment Term and for one (1) year after Executive ceases to be an employed by the Company, Executive shall not, directly or indirectly, solicit to employ, or employ for himself or others, any employee of the Company, or any subsidiary or affiliate of the Company, who was an officer, director or employee of, or consultant or advisor to, the Company, or any subsidiary or affiliate of the Company, as of the date of the termination of Executive's employment with the Company or during the preceding six (6) month period, or solicit any such person to leave such person's position or join the employ of, or act in a similar capacity with, another, then or at a later time.

(e) No Limitation. The parties agree that nothing in this Agreement shall be construed to limit or negate the common law of torts, confidentiality, trade secrets, fiduciary duty and obligations where such laws provide the Company with any broader, further or other remedy or protection than those provided herein.

(f) Specific Performance. Because the breach or any threatened breach of any of the provisions of this Section 9 may result in immediate and irreparable injury to the Company for which the Company may not have an adequate remedy at law, Executive expressly agrees that the Company shall be entitled, in addition to all other rights and remedies available to it at law, in equity or otherwise, to a decree of specific performance of the restrictive covenants contained in this Section 9 and further to a temporary and permanent injunction enjoining such breach or threatened breach, in each case without the necessity of proving damages and without the necessity of posting bond or other security.

(g) Challenge of Agreement by Executive. In the event Executive challenges this Agreement and an injunction or other relief is issued staying the implementation of any of the restrictions imposed by Section 9 hereof, the time remaining on the restrictions shall be tolled until the challenge is resolved by final adjudication, settlement or otherwise, except that the time remaining on

the restrictions shall not be tolled during any period in which Executive is unemployed. In the event of a dispute between the Executive and the Company, the irrespective of how arising, Company will pay Executive's reasonable legal fees and expenses.

(h) Interpretation of Restrictions. Executive acknowledges that the type and periods of restriction imposed by this Section 9 are fair and reasonable and are reasonably required for the protection of the legitimate interests of the Company and the goodwill associated with the business of the Company; and that the time, scope, geographic area and other provisions of this Agreement have been specifically negotiated by sophisticated commercial parties and are given as an integral part of the transactions contemplated hereby. If any of the covenants in this Section 9, or any part hereof, is hereafter construed to be invalid or unenforceable, the same shall not affect the remainder of the covenant or covenants herein, which shall be given full effect, without regard to the invalid portions. In the event that any covenant contained in this Agreement shall be determined by any court of competent jurisdiction to be unenforceable by reason of its extending for too great a period of time or over too great a geographical area or by reason of its being too extensive in any other respect, it shall be interpreted to extend only over the maximum period of time for which it may be enforceable and/or over the maximum geographical area as to which it may be enforceable and/or to the maximum extent in all other respects as to which it may be enforceable, all as determined by such court in such action.

10. Notices. All notices, demands, consents, requests, instructions and other communications to be given or delivered or permitted under or by reason of the provisions of this Agreement or in connection with the transactions contemplated hereby shall be in writing and shall be deemed to be delivered and received by the intended recipient as follows: (i) if personally delivered, on the "**Business Day**" (defined as a day on which banks in New York City are open) of such delivery (as evidenced by the receipt of the personal delivery service); (ii) if mailed certified or registered mail return receipt requested, four (4) Business Days after being mailed; (iii) if delivered by overnight courier (with all charges having been prepaid), on the Business Day of such delivery (as evidenced by the receipt of the overnight courier service of recognized standing); or (iv) if delivered by facsimile or e-mail transmission, on the Business Day of such delivery if sent by 6:00 p.m. in the time zone of the recipient, or if sent after that time, on the next succeeding Business Day (as evidenced by the printed confirmation of delivery generated by the sending party's telecopier machine). If any notice, demand, consent, request, instruction or other communication cannot be delivered because of a changed address of which no notice was given (in accordance with this Section 10), or the refusal to accept same, the notice, demand, consent, request, instruction or other communication shall be deemed received on the second Business Day the notice is sent (as evidenced by a sworn affidavit of the sender). All such notices, demands, consents, requests, instructions and other communications will be sent to the address first above written. Any notice, consent, direction, approval, instruction, request or other communication given in accordance with this Section 10 shall be effective after it is received by the intended recipient.

11. General Provisions.

(a) Benefits of Agreement and Assignment. This Agreement shall inure to the benefit of and be binding upon the parties hereto and their respective executors, administrators, heirs, successors and permitted assigns; *provided, however*, that Executive may not (except for the rights to any remuneration of benefits of Executive that pass to his estate or heirs upon his death) assign any of his rights or duties hereunder except upon the prior written consent of the Company. This Agreement shall be binding on any successor to the Company whether by merger, consolidation, acquisition of all or substantially all of the Company's stock, assets or business or otherwise, as fully as if such successor were a signatory hereto, and the Company shall cause such successor to, and such successor shall, expressly assume the Company's obligations hereunder. The term "Company" as used in this Agreement shall include all such successors. Except as expressly permitted by this Section 11(a), nothing herein is intended to or shall be construed to confer upon or give any person, other than the parties hereto, any rights, privileges or remedies under or by reason of this Agreement.

(b) Governing Law; Jurisdiction. This Agreement shall be governed by and construed in accordance with the laws of the State of New York applicable to agreements made and to be performed in that state, without regard or reference to its principles of conflicts of laws. This Agreement shall be construed and interpreted without regard to any presumption against the party causing this Agreement to be drafted. Each of the parties unconditionally and irrevocably consent to the exclusive jurisdiction of the courts of the State of New York located in the County of New York with respect to any suit, action or proceeding arising out of or relating to this agreement. Each of the parties unconditionally and irrevocably waives any right to contest the venue of said courts or to claim that said courts constitute an inconvenient forum. Each of the parties unconditionally and irrevocably waives the right to a trial by jury in any action, suit or proceeding arising out of or relating to this Agreement.

(c) Severability. Each term and provision of this Agreement is severable; the invalidity, illegality or unenforceability or modification of any term or provision of this Agreement shall not affect the validity, legality and enforceability of the other terms and provisions of this Agreement, which shall remain in full force and effect. Since it is the desire and intent of the parties that the provisions of this Agreement be enforced to the fullest extent permissible under the laws and public policies applied in each jurisdiction in which enforcement is sought, should any particular provision of this Agreement be deemed invalid, illegal or unenforceable, the same shall be deemed reformed and amended to delete that portion that is adjudicated to be invalid, illegal or unenforceable and the deletion shall apply only with respect to the operation of such provision and to the extent of such provision and, to the extent that a provision of this Agreement would be deemed unenforceable by virtue of its scope, but may be made enforceable by limitation thereon, each party agrees that this Agreement shall be reformed and amended so that the same shall be enforceable to the fullest extent permissible under the laws and public policies applied in the jurisdiction in which enforcement is sought.

(d) Entire Agreement. This Agreement (together with the Confidentiality Agreement) contains the entire understanding and agreement of the parties, and supersedes any and all other prior and/or contemporaneous understandings and agreements, either oral or in writing, between the parties hereto with respect to the subject matter hereof, all of which are merged herein. Each party to this Agreement acknowledges that no representations, inducements, promises, or agreements, oral or otherwise, have been made by either party, or anyone acting on behalf of either party, which are not embodied herein, and that no other agreement, statement or promise not contained in this Agreement shall be valid or binding.

(e) Amendments; Waiver. This Agreement may be modified, amended or waived only by an instrument in writing signed by the Company and Executive. No waiver of any provision hereof shall be valid unless made in writing and signed by the party making the waiver. No waiver of any provision of this Agreement shall constitute a waiver of any other provision, whether or not similar, nor shall any waiver constitute a continuing waiver.

(f) Headings; Counterparts. The headings contained in this Agreement are inserted for reference purposes only and shall not in any way affect the meaning, construction or interpretation of this Agreement. This Agreement may be executed in two (2) counterparts, each of which, when executed, shall be deemed to be an original, but both of which, when taken together, shall constitute one and the same document. Such counterparts may be executed and delivered by facsimile/e-mail transmission, which shall constitute valid execution and delivery.

(g) Right of Legal Representation. Executive represents and warrants that Executive has read this Agreement and Executive understands that this is an important legal document Executive hereby represents and warrants that Executive has been advised of his right to seek independent legal counsel in connection with the negotiation and execution of this Agreement and that Executive has either retained and has been represented by such legal counselor has knowingly and voluntarily waived his right to such legal counsel and desires to enter into this Agreement without the benefit of independent legal representation.

IN WITNESS WHEREOF, each of the Company and Executive has executed this Agreement as of the date first above written.

ADVANCED PLASMA THERAPIES, INC.

By: /s/ Howard Nelson
Name: Howard Nelson
Title: President and Chief Executive Officer

/s/ Michael Preston
Michael Preston

Exhibit 10.3

AMENDMENT NO. 1 TO EMPLOYMENT AGREEMENT

THIS AMENDMENT NO. 1 TO EMPLOYMENT AGREEMENT (the "**Amendment**"), dated as of September 30, 2013 (the "**Effective Date**"), is by and between Advanced Plasma Therapies, Inc., a Delaware corporation, with its principal place of business at 1 Monroe Avenue, Lawrenceville, New Jersey 08648 (the "**Company**") and Michael Preston, having a principal residence at 8 Abbey Road, Orangeburg NY 10962 (the "**Executive**").

WHEREAS, the Company and Executive are parties to that certain Employment Agreement, dated May 30, 2013 (the "**Employment Agreement**"); and

WHEREAS, the Company and the Executive desire to amend the Employment Agreement on the terms and conditions set forth herein.

NOW THEREFORE, for good and valuable consideration, the receipt, and legal adequacy of which is hereby acknowledged, and pursuant to Section 11(e) of the Employment Agreement, the parties, intending to be legally bound, hereby agree to amend the Employment Agreement as of the Effective Date as follows:

1. Definition of First Funding Milestone. In light of the Company's current financing needs and strategy, the Company and the Executive hereby amend the definition of "First Funding Milestone" appearing in Section 3(a) of the Employment Agreement to reduce such milestone from $5 million to $2 million. As amended, the definition of First Funding Milestone shall read as follows: "During the Employment Term and commencing from the consummation of (or a portion of, as the case may be) the Company's initial round of financing with minimum gross proceeds to the Company of not less than $2 million (the "**First Funding Milestone**") . . . ."

2. No Further Amendment. Except as amended hereby, the Employment Agreement shall remain unmodified and in full force and effective.

3. Governing Law. This Amendment shall be governed by and construed in accordance with the laws of the State of New York applicable to agreements made and to be performed in that state, without regard or reference to its principles of conflicts of laws.

4. Headings; Counterparts. The headings contained in this Amendment are inserted for reference purposes only and shall not in any way affect the meaning, construction or interpretation of this Amendment. This Amendment may be executed in two (2) counterparts, each of which, when executed, shall be deemed to be an original, but both of which, when taken together, shall constitute one and the same document. Such counterparts may be executed and delivered by facsimile/e-mail transmission, which shall constitute valid execution and delivery.

[Signature Page Follows]

IN WITNESS WHEREOF, each of the Company and Executive has executed this Amendment as of the date first above written.

ADVANCED PLASMA THERAPIES, INC.

By: /s/ Michael Preston
Name: Michael Preston
Title: Executive Chairman

/s/ Howard Nelson
Howard Nelson

[Signature Page to Amendment No. 1 to Employment Agreement]

Exhibit 10.4

AMENDMENT NO. 2 TO EMPLOYMENT AGREEMENT

THIS AMENDMENT NO. 2 TO EMPLOYMENT AGREEMENT (the "**Amendment**"), dated as of December 20, 2013 (the "**Effective Date**"), is by and between Advanced Plasma Therapies, Inc., a Delaware corporation, with its principal place of business at 1 Monroe Avenue, Lawrenceville, New Jersey 08648 (the "**Company**") and Michael Preston, having a principal residence at 8 Abbey Road Orangeburg NY 10962 (the "**Executive**").

WHEREAS, the Company and Executive are parties to that certain Employment Agreement, dated May 30, 2013, as amended by that certain Amendment No. 1 thereto, dated September 30, 2013 (collectively, the "**Employment Agreement**"); and

WHEREAS, the Company and the Executive desire to further amend the Employment Agreement on the terms and conditions set forth herein.

NOW THEREFORE, for good and valuable consideration, the receipt, and legal adequacy of which is hereby acknowledged, and pursuant to Section 11(e) of the Employment Agreement, the parties, intending to be legally bound, hereby agree to amend the Employment Agreement as of the Effective Date as follows:

1. Definition of First Trial Milestone. In light of the Company's current discussions with the U.S. Food and Drug Administration and the resulting possibility that the Company will not be required to conduct a pilot (Phase IIb) study for its product candidate, the Company and the Executive hereby amend the definition of "First Trial Milestone" appearing in Section 3(b)(ii)(B) of the Employment Agreement to allow for such possibility. As amended, the definition of "First Trial Milestone" shall read in relevant part as follows: ". . . . the date when either, pursuant to predetermined criteria reviewed by the Board (i) the primary endpoints of the Company's anticipated Phase IIb clinical trial of the Company's nitric oxide/plasma product are achieved such that the Company may proceed to Phase III trials or (ii) U.S. Food and Drug Administration approves an Investigational Device Exemption that permits the Company to proceed directly to pivotal (Phase III) trials without the need for a pilot (Phase IIb) trial (the "**First Trial Milestone**")".

2. No Further Amendment. Except as amended hereby, the Employment Agreement shall remain unmodified and in full force and effective.

3. Governing Law. This Amendment shall be governed by and construed in accordance with the laws of the State of New York applicable to agreements made and to be performed in that state, without regard or reference to its principles of conflicts of laws.

4. Headings; Counterparts. The headings contained in this Amendment are inserted for reference purposes only and shall not in any way affect the meaning, construction or interpretation of this Amendment. This Amendment may be executed in two (2) counterparts, each of which, when executed, shall be deemed to be an original, but both of which, when taken together, shall constitute one and the same document. Such counterparts may be executed and delivered by facsimile/e-mail transmission, which shall constitute valid execution and delivery.

[Signature Page Follows]

IN WITNESS WHEREOF, each of the Company and Executive has executed this Amendment as of the date first above written.

ADVANCED PLASMA THERAPIES, INC.

By: /s/ Howard Nelson
Name: Howard Nelson
Title: President and Chief Executive Officer

/s/ Michael Preston

Michael Preston

[Signature Page to Amendment No. 2 to Employment Agreement]

Exhibit 10.5

AMENDMENT NO. 3 TO EMPLOYMENT AGREEMENT

THIS AMENDMENT NO. 3 TO EMPLOYMENT AGREEMENT (the "**Amendment**"), dated effective as of November 1, 2015 (the "**Effective Date**"), is by and between Origin, Inc., a Delaware corporation, with its principal place of business at 2 Research Way, Princeton, NJ 08540 (f/k/a Advanced Plasma Therapies, Inc., the "**Company**") and Michael Preston, having a principal residence at 8 Abbey Road Orangeburg NY 10962 (the "**Executive**").

WHEREAS, the Company and Executive are parties to that certain Employment Agreement, dated May 30, 2013, as amended by that certain Amendment No. 1 thereto, dated September 30. 2013, and that certain Amendment No. 2 thereto, dated December 20, 2013 (collectively, the "**Employment Agreement**"); and

WHEREAS, the Company and the Executive desire to further amend the Employment Agreement on the terms and conditions set forth herein.

NOW THEREFORE, for good and valuable consideration, the receipt, and legal adequacy of which is hereby acknowledged, and pursuant to Section 11(e) of the Employment Agreement, the parties, intending to be legally bound, hereby agree to amend the Employment Agreement as of the Effective Date as follows:

1. Term of the Employment Agreement. In order to extend the Initial Term of the Employment Agreement, Section 1(a) of the Employment Agreement is hereby deleted in its entirety and replaced with the following new Section 1(a):

> "(a) The Company hereby employs Executive, and Executive hereby accepts employment by the Company, as the Company's Executive Chairman and Chief Executive Officer. The term of the Company's employment shall be for a period ending on March 30, 2017, subject to termination as provided in Section 8 hereof (the "**Employment Term**"). At the conclusion of the period ended March 30, 2017 (the "**Initial Term**"), this Agreement and the Employment Term shall automatically renew for successive one (1) year terms (each, a "**Renewal Term**") unless either party gives sixty (60) days' advance written notice of such party's intention not to renew this Agreement at the conclusion of the Initial Term or any Renewal Term. Notwithstanding anything herein to the contrary, the Company agrees that it shall not have the right to terminate Executive's employment with the Company for No Reason (as defined in Section 7(d)) prior to the conclusion of the Initial Term, but the Company shall have the right, subject to the terms of this Agreement, to terminate the Executive's employment with the Company for Cause (as defined in Section 7(b)) or upon the happening of a Disability Occurrence (as defined in Section 7(c))."

2. Executive's Position with the Company. As of the Effective Date, Executive shall assume the role of Executive Chairman and Chief Executive Officer of the Company and shall fulfill the roles customarily associated with such positions, as directed by the Company's Board of Directors. All references in the Employment Agreement to Executive's positions with the Company (including, without limitation, those appearing in Section 1(a) and Section 2(a) of the Agreement) are hereby amended to reflect Executive's position as Executive Chairman and Chief Executive Officer of the Company.

3. Executive's Salary. Section 3(a) of the Employment Agreement is hereby deleted in its entirety and replaced with the following new Section 3(a):

> "(a) Salary. Effective as of November 1, 2015, the Company the Company shall pay to Executive an annual cash salary of $275,000 (the "**Base Salary**"), payable in accordance with prevailing Company policy."

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4. Governing Law; Jurisdiction. Section 11(b) of the Employment Agreement is hereby deleted in its entirety and replaced with the following new Section 11(b):

> "(b) Arbitration; Governing Law; Jurisdiction.

(i) Any dispute involving Executive's employment with Company, any of the terms or conditions of Executive's employment with Company, or the interpretation or application of this Agreement, or the Confidentiality Agreement, shall be resolved by final and binding arbitration before one arbitrator designated by the American Arbitration Association ("**AAA**"), pursuant to the then prevailing rules of the AAA for the resolution of employment disputes, in Somerset County, New Jersey, or Mercer County, New Jersey, whose decision shall be final and binding and subject to confirmation in a court of competent jurisdiction with the prevailing party being awarded reimbursement of the arbitration filing fees and fees of the arbitrators. The arbitrator shall have authority to grant injunctive relief, including a temporary restraining order or preliminary injunction, to the extent permitted by AAA rules. Executive cannot participate in a representative capacity or as a member of any class of claims pertaining to any claim subject to the arbitration provision in this Agreement. There is no right or authority for any claims subject to this arbitration policy to be arbitrated on a class or collective action basis or on any basis involving claims brought in a purported representative capacity on behalf of any other person or group of people similarly situated. Such claims are prohibited. Furthermore, claims brought by or against either the Executive or the Company may not be joined or consolidated in the arbitration with claims brought by or against any other person or entity unless otherwise agreed to in writing by all parties involved.

(ii) This Agreement shall be governed by and construed in accordance with the laws of the State of New Jersey applicable to agreements made and to be performed in that state, without regard or reference to its principles of conflicts of laws. This Agreement shall be construed and interpreted without regard to any presumption against the party causing this Agreement to be drafted. Each of the parties unconditionally and irrevocably consent to the exclusive jurisdiction of the courts of the State of New Jersey, County of Mercer, or the United States District Court for the District of New Jersey, with respect to any non-arbitrable claim, suit, action or proceeding arising out of or relating to this agreement and with respect to any action to enforce the terms of the arbitration clause herein. Each of the parties unconditionally and irrevocably waives any right to contest the venue of said courts or to claim that said courts constitute an inconvenient forum. Each of the parties unconditionally and irrevocably waives the right to a trial by jury in any action, suit or proceeding arising out of or relating to this Agreement."

5. No Further Amendment. Except as amended hereby, the Employment Agreement shall remain unmodified and in full force and effective.

6. Governing Law. This Amendment shall be governed by and construed in accordance with the laws of the State of New Jersey applicable to agreements made and to be performed in that state, without regard or reference to its principles of conflicts of laws.

7. Headings; Counterparts. The headings contained in this Amendment are inserted for reference purposes only and shall not in any way affect the meaning, construction or interpretation of this Amendment. This Amendment may be executed in two (2) counterparts, each of which, when executed, shall be deemed to be an original, but both of which, when taken together, shall constitute one and the same document. Such counterparts may be executed and delivered by facsimile/e-mail transmission, which shall constitute valid execution and delivery.

IN WITNESS WHEREOF, each of the Company and Executive has executed this Amendment as of the date first above written.

ORIGIN, INC.

By: /s/ Elizabeth Hanna
Name: Elizabeth Hanna
Title: President and Chief Operating Officer

/s/ Michael Preston
Michael Preston

Exhibit 10.6

AMENDMENT NO. 4 TO EMPLOYMENT AGREEMENT

THIS AMENDMENT NO. 4 TO EMPLOYMENT AGREEMENT (the "**Amendment**"), dated effective as of December 22, 2022 (the "**Effective Date**"), is by and between Origin, Inc., a Delaware corporation, with its principal place of business at 2 Research Way, Princeton, NJ 08540 (f/k/a Advanced Plasma Therapies, Inc., the "**Company**") and Michael Preston, having a principal residence at 8 Abbey Road Orangeburg NY 10962 (the "**Executive**").

WHEREAS, the Company and Executive are parties to that certain Employment Agreement, dated May 30, 2013, as amended by that certain Amendment No. 1 thereto, dated September 30, 2013, and that certain Amendment No. 2 thereto, dated December 20, 2013, and that certain Amendment No. 3 dated November 1, 2015 (collectively, the "**Employment Agreement**"); and

WHEREAS, the Company and the Executive desire to further amend the Employment Agreement on the terms and conditions set forth herein.

NOW THEREFORE, for good and valuable consideration, the receipt, and legal adequacy of which is hereby acknowledged, and pursuant to Section 11(e) of the Employment Agreement, the parties, intending to be legally bound, hereby agree to amend the Employment Agreement as of the Effective Date as follows:

1. Term of the Employment Agreement. Section 2(b) of the Employment Agreement is hereby deleted in its entirety and replaced with the following new Section 2(b):

> (b) Devotion of Executive's Time. Executive shall devote one hundred percent (100%) of his business time, labor, skill and energy to conducting the business and affairs of the Company and to performing his duties and responsibilities to the Company as set forth in Section 2(a) hereof, unless otherwise approved by the Board. Executive shall perform Executive's duties and responsibilities to the Company diligently, competently, faithfully and to the best of his ability.

2. No Further Amendment. Except as amended hereby, the Employment Agreement shall remain unmodified and in full force and effective.

3. Governing Law. This Amendment shall be governed by and construed in accordance with the laws of the State of New Jersey applicable to agreements made and to be performed in that state, without regard or reference to its principles of conflicts of laws.

4. Headings; Counterparts. The headings contained in this Amendment are inserted for reference purposes only and shall not in any way affect the meaning, construction or interpretation of this Amendment. This Amendment may be executed in two (2) counterparts, each of which, when executed, shall be deemed to be an original, but both of which, when taken together, shall constitute one and the same document. Such counterparts may be executed and delivered by facsimile/e-mail transmission, which shall constitute valid execution and delivery.

IN WITNESS WHEREOF, each of the Company and Executive has executed this Amendment as of the date first above written.

ORIGIN, INC.

By: /s/ John Fernandes
Name: John Fernandes
Title: Chief Financial Officer

/s/ Michael Preston
Michael Preston

Exhibit 10.7

EMPLOYMENT AGREEMENT

This **EMPLOYMENT AGREEMENT ("Agreement"),** made effective as of November 1, 2014, is between Advanced Plasma Therapies, Inc., a Delaware corporation (the **"Company"),** and John Fernandes **("Executive"),** an individual residing at 23 Maple Street, Chatham, New Jersey 07928.

WHEREAS, Company desires to retain the services of Executive to serve as Vice President, Finance; and

WHEREAS, Executive is willing to serve as Vice President, Finance, upon the terms, and subject to the conditions, of this Agreement; and

NOW, THEREFORE, in consideration of the premises stated above and the mutual covenants contained in this agreement, the parties hereby agree as follows:

1. Employment; Termination of Employment.

(a) Company shall employ Executive as Vice President, Finance, and he shall have such duties and responsibilities as are customarily associated with such position and assigned to him by the Chief Executive Officer of the Company **("CEO")** and such other executives as may be designated by the CEO. Executive shall at all times report to and be managed under the direction of the CEO. Company shall employ Executive on an at-will basis, and accordingly, this Agreement may be terminated at will. "At-will" means that either party to this Agreement may terminate the employment and this Agreement at any time for any reason or no reason. The term that Executive is employed by the Company is referred to herein as the **"Employment Term."**

(b) In the event Company employs Executive for more than six (6) months from the date Employee begins work for Company, Company shall change Executive's title to Chief Financial Officer. Thereafter, Executive shall continue to have such duties and responsibilities as are customarily associated with such new position and assigned to him by the CEO.

(c) After Executive's first six months of employment, Executive shall be entitled to six months' written notice to prior to termination of his employment without "Cause" as defined herein, *provided* that Executive signs and delivers a General Release with the terms set forth in the form annexed hereto as Exhibit "A." If Executive declines to sign and return the General Release, then the Company may terminate his employment without the six months' notice and Executive shall not be entitled to any further pay or benefits after his employment terminates. At its option, the Company may, after giving notice of termination without cause, relieve Executive of his duties and pay him his salary during the six-month notice period without requiring him to perform any additional work.

(d) The Company may terminate Executive's employment for Cause immediately without prior notice and without further obligation to Executive.

(e) If Executive resigns his employment for "Good Reason" as set forth herein he shall receive six months' salary in twelve equal bi-monthly payments, *provided* that Executive signs and delivers a General Release with the terms set forth in the form annexed hereto as Exhibit "A"

(f) Notwithstanding the foregoing, nothing herein shall be construed as a promise or agreement by or obligation of the Company to continue to employee Executive at any time during the period ending six (6) months from the date Employee begins work for Company.

(g) Executive shall devote his full business time, labor, skill and energy to the business and affairs of the Company and to performing his duties and responsibilities to the Company. Executive shall perform Executive's duties and responsibilities to the Company diligently, competently, faithfully, and to the best of his ability. Executive shall perform his duties and the Company's principal business office or such other location as may be approved by the CEO.

(h) Executive represents and warrants to the Company that Executive has the right to negotiate and enter into this Agreement, and Executive's execution, delivery and performance of this Agreement does not breach, interfere with or conflict with any other

contractual agreement, covenant not to compete, option, right of first refusal or other existing business relationship or any judgment or order, in each case, to which Executive is a party or otherwise subject. Executive acknowledges that this representation and warranty is a material inducement to the Company entering into this Agreement and in the event Executive breaches this representation and warranty, Executive agrees to indemnify and hold harmless the Company from any and all claims, actions, losses, and damages, including, but not limited to, reasonable attorney' s fees and expenses incurred by the Company as a result of such breach.

2. Compensation: Base Salary and Performance Bonus.

(a) As compensation for his services, Company will pay Executive a salary of $180,000 (one hundred eighty thousand dollars) per year in 26 equal bi-weekly installments. Executive will also receive a car allowance of $500.00 (five hundred dollars) per month.

(b) Executive shall be eligible to receive a bonus of up to 25% (twenty-five percent) of his salary, pro-rated for the months he is employed. The Company shall have sole discretion over whether to pay a bonus and the amount of any bonus paid. Bonuses will be paid on or before January 31 of each year based on the previous year.

(c) If Employee's employment lasts longer than six (6) months, Executive's compensation shall be changed as follows:

i. Executive's salary shall increase to the rate of $200,000 (two hundred thousand dollars) per year;

ii. Executive shall be granted options to purchase 300 shares of Company common stock with a strike price of $609 per share. Such stock options shall be governed by the terms of the Advanced Plasma Therapies, Inc. 2014 Equity Incentive Plan and any amendments thereto and shall vest equally over a four-year period. Subject to performance, the Company may grant additional options during the course of the Executive's employment.

(d) All payments made under this Agreement shall be made subject to applicable tax withholdings and other withholdings required by applicable law.

3. Benefits.

(a) Vacation Time. Executive shall be entitled to four (4) weeks paid vacation time per annum; *provided, however,* that all vacation time shall be pre-approved by the CEO, and Executive shall not be able to take vacation time at any time that would materially interfere with the business or operations of the Company. Executive shall not be permitted to carry over unused vacation time from year to year during the Employment Term, and unused vacation time shall not be paid out to Executive.

(b) Reimbursement for Expenses. The Company shall promptly reimburse Executive for all reasonable and necessary business expenses incurred by Executive in accordance with his duties and responsibilities hereunder, including, without limitation, telephone, facsimile, travel, lodging, entertainment and other customary charges incurred by Executive on behalf of the Company in the performance of his duties hereunder, upon the presentation by Executive of appropriate evidence and documentation of the incurrence thereof in accordance with the Company' s policies from time to time in effect.

(c) Health Benefits. Executive shall be entitled to receive health benefits in accordance with the Company's group health plan on the same terms as other executive employees. The Company retains discretion to amend, alter, or discontinue the health plan and to amend, alter, or discontinue any benefits offered under it.

(d) Other. In addition, Executive shall receive such additional compensation or other benefits as are provided to Company employees generally and similarly-situated Company executives specifically, in each case as established by the Board in its discretion.

4. Restrictions Respecting Confidential Information, Non-Competition, etc.

(a) Acknowledgment of Executive. Executive acknowledges and agrees that by virtue of Executive's position and involvement with the business and affairs of the Company, Executive will develop substantial expertise and knowledge with respect to all aspects of the business, affairs and operations of the Company and will have access to all significant aspects of the business and operations of the Company and to confidential and proprietary information of the Company. As such, Executive acknowledges and agrees that the

Company will be damaged if Executive were to breach or threaten to breach any of the provisions of this Section 4 or if Executive were to disclose or make unauthorized use of any confidential and proprietary information of the Company or otherwise engage in the activities prohibited by this Section 4. Accordingly, Executive expressly acknowledges and agrees that Executive is knowingly and voluntarily entering into this Agreement, and that the terms, provisions and conditions of this Section 4 are fair and reasonable and necessary to adequately protect the Company and its business.

(b) Confidentiality Agreement. Concurrently with the execution of this Agreement, Executive shall execute the Company's standard form of Confidentiality and Intellectual Property Assignment Agreement (the **"Confidentiality Agreement"),** the terms and provisions of which are incorporated herein by reference as binding and operative provisions of this Agreement.

(c) Non-Compete. During the Employment Term and for one (1) year after Executive ceases to be an employed by the Company for any reason, Executive shall not, directly or indirectly, manage, operate or control, or participate in the ownership, management, operation or control of, or otherwise become interested in (whether as an owner, stockholder, member, partner, lender, consultant, executive, officer, director, agent supplier, distributor or otherwise) any business which is directly competitive with the business of the Company or any of its subsidiaries or affiliates, or, directly or indirectly, induce or influence any person that has a business relationship with the Company or any of its subsidiaries or affiliates to discontinue or reduce the extent of such relationship. For purposes of this Agreement, Executive shall be deemed to be directly or indirectly interested in a business if he is engaged or interested in that business as a stockholder, director, officer, executive, agent, member, partner, individual proprietor, consultant, advisor or otherwise, but not if Executive's interest is limited solely to the ownership of not more than 4.99% of the securities of any class of equity securities of a corporation or other entity whose shares are listed or admitted to trade on a national securities exchange or are quoted on the Over the Counter Bulletin Board or similar public trading system.

(d) No Solicitation. During the Employment Term and for one (1) year after Executive ceases to be an employed by the Company for any reason, Executive shall not, directly or indirectly, solicit to employ, or employ for himself or others, any employee of the Company, or any subsidiary or affiliate of the Company, who was an officer, director or employee of, or consultant or advisor to, the Company, or any subsidiary or affiliate of the Company, as of the date of the termination of Executive's employment with the Company or during the preceding six (6) month period, or solicit any such person to leave such person's position or join the employ of, or act in a similar capacity with, another, then or at a later time.

(e) No Limitation. The parties agree that nothing in this Agreement shall be construed to limit or negate the common law of torts, confidentiality, trade secrets, fiduciary duty and obligations where such laws provide the Company with any broader, further or other remedy or protection than those provided herein.

(f) Specific Performance. Because the breach or any threatened breach of any of the provisions of this Section 4 may result in immediate and irreparable injury to the Company for which the Company may not have an adequate remedy at law, Executive expressly agrees that the Company shall be entitled, in addition to all other rights and remedies available to it at law, in equity or otherwise, to a decree of specific performance of the restrictive covenants contained in this Section 4 and further to a temporary and permanent injunction enjoining such breach or threatened breach, in each case without the necessity of proving damages and without the necessity of posting bond or other security.

(g) Challenge of Agreement by Executive. In the event Executive challenges this Agreement and an injunction or other relief is issued staying the implementation of any of the restrictions imposed by Section 4 hereof, the time remaining on the restrictions shall be tolled until the challenge is resolved by final adjudication, settlement or otherwise, except that the time remaining on the restrictions shall not be tolled during any period in which Executive is unemployed,

(h) Interpretation of Restrictions. Executive acknowledges that the type and periods of restriction imposed by this Section 4 are fair and reasonable and are reasonably required for the protection of the legitimate interests of the Company and the goodwill associated with the business of the Company; and that the time, scope, geographic area and other provisions of this Agreement have been

specifically negotiated by sophisticated commercial parties and are given as an integral part of the transactions contemplated hereby. If any of the covenants in this Section 9, or any part hereof, is hereafter construed to be invalid or unenforceable, the same shall not affect the remainder of the covenant or covenants herein, which shall be given full effect, without regard to the invalid portions. In the event that any covenant contained in this Agreement shall be determined by any court of competent jurisdiction to be unenforceable by reason of its extending for too great a period of time or over too great a geographical area or by reason of its being too extensive in any other respect, it shall be interpreted to extend only over the maximum period of time for which it may be enforceable and/or over the maximum geographical area as to which it may be enforceable and/or to the maximum extent in all other respects as to which it may be enforceable, all as detem1ined by such court in such action.

(i) Severability of Covenants. Executive acknowledges and agrees that the provisions of this Section 4 are reasonable and valid in all respects. If any tribunal having jurisdiction determines that any of the provisions of this Section 4, or any part thereof, is invalid or unenforceable because of the duration or scope of such provision, such tribunal shall modify any such unenforceable provision as it deems warranted to carry out the intent and agreement of the Parties as embodied herein to the maximum extent permitted by law; and/or if any particular provision herein shall be adjudicated to be prohibited, invalid or unenforceable, such that it cannot be amended to be enforceable, then such provision shall be deemed null and void, but shall not invalidate or render unenforceable any other provision contained within this Agreement, and the remainder of this Agreement shall be deemed and remain fully valid and enforceable.

5. Binding Effect. All of the terms and conditions of this Agreement shall be binding upon and inure to the benefit of Executive and Company and any successor-in-interest to any of them.

6. Arbitration.

(a) Any dispute involving Executive's employment with Company, any of the terms or conditions of Executive's employment with Company, or the interpretation or application of this Agreement, or the Confidentiality Agreement, shall be resolved by final and binding arbitration before one arbitrator designated by the American Arbitration Association, pursuant to the then prevailing rules of the AAA for the resolution of employment disputes, in Somerset County, New Jersey, or Mercer County, New Jersey, whose decision shall be final and binding and subject to confirmation in a court of competent jurisdiction with the prevailing party being awarded reimbursement of the arbitration filing fees and fees of the arbitrators. The arbitrator shall have authority to grant injunctive relief, including a temporary restraining order or preliminary injunction, to the extent permitted by AAA rules.

(b) Executive cannot participate in a representative capacity or as a member of any class of claims pertaining to any claim subject to the arbitration provision in this Agreement. There is no right or authority for any claims subject to tris arbitration policy to be arbitrated on a class or collective action basis or on any basis involving claims brought in a purported representative capacity on behalf of any other person or group of people similarly situated. Such claims are prohibited. Furthermore, claims brought by or against either the Executive or the Company may not be joined or consolidated in the arbitration with claims brought by or against any other person or entity unless otherwise agreed to in writing by all parties involved.

7. Definitions of "Cause" and "Good Reason."

(a) Definition of " Cause." For purposes of this Agreement, the term **"Cause"** shall mean any of the following: (i) the repeated and demonstrated failure of Executive to substantially carry out the reasonable instructions of the Board, provided such instructions reasonably relate to and are not inconsistent with Executive's management position and standing, which such conduct is not cured within fifteen (15) days after receipt of written notice thereof by Executive from the Company; (ii) the breach by Executive of any of the terms or provisions of this Agreement or any other agreement between Executive, on the one hand, and the Company, on the other hand, on the part of Executive to be observed or performed, which failure or breach is not cured within fifteen (15) days after receipt of written notice thereof by Executive from the Company, (iii) Executive' s knowing and willful neglect or refusal for any reason to attend to Executive's material duties and responsibilities under this Agreement which such conduct is not cured within fifteen (15) days after receipt of written notice thereof by Executive from the Company; (iv) any criminal liability of the Company which was substantially caused by the conduct of Executive; or (v) Executive's conviction by, or entry of a plea of guilty or *nolo contendere* in, a court of competent jurisdiction of an act of fraud, embezzlement or willful breach of fiduciary duty to the Company, or any crime constituting a felony.

(b) Definition of "Good Reason." For purposes of this Agreement, the term **"Good Reason"** for the Executive to terminate his employment hereunder shall mean the occurrence of any of the following events without the Executive's consent:

(i) a material and continuing diminution in the Executive' s authority, duties or responsibilities under this Agreement relative to his authority, duties or responsibilities in effect immediately prior to such reduction;

(ii) a material change in the geographic location at which the Executive must primarily perform his duties to a point that is located more than fifty (50) miles from the Company's principal executive offices;

(iii) a material diminution by the Company of the Executive's Base Salary as initially set forth herein or as the same may be increased from time to time; or

(iv) any other action or inaction that constitutes a material breach by the Company or any successor or Affiliate of its obligations to the Executive under this Agreement;

provided, however, that such termination by the Executive shall only be deemed for Good Reason only if: (x) the Executive gives the Company written notice of the intent to terminate for Good Reason within thirty (30) days following the first occurrence of the condition(s) that the Executive believes constitutes Good Reason, which notice shall describe such condition(s); (y) the Company fails to remedy such condition(s) within thirty (30) days following receipt of the written notice (the ***"Cure Period");*** and (z) the Executive terminates his employment within thirty (30) days following the end of the Cure Period.

8. Miscellaneous.

(a) This Agreement shall be governed by and construed in accordance with the laws of the State of New Jersey applicable to agreements made and to be performed in that state, without regard or reference to its principles of conflicts of laws. This Agreement shall be construed and interpreted without regard to any presumption against the party causing this Agreement to be drafted. Each of the parties unconditionally and irrevocably consent to the exclusive jurisdiction of the courts of the State of New Jersey, County of Mercer, or the United States District Court for the District of New Jersey, with respect to any non-arbitrable claim, suit, action or proceeding arising out of or relating to this agreement and with respect to any action to enforce the terms of the arbitration clause herein. Each of the parties unconditionally and irrevocably waives any right to contest the venue of said courts or to claim that said courts constitute an inconvenient forum. Each of the parties unconditionally and irrevocably waives the right to a trial by jury in any action, suit or proceeding arising out of or relating to this Agreement.

(b) This Agreement may be executed in any number of counterparts, each of which shall be deemed to be original hereof, but all of which together shall constitute one and the same instrument and facsimile signatures delivered by fax or e-mail transmission shall be treated as originals.

(c) This Agreement is intended for the sole and exclusive benefit of the parties hereto and their respective heirs, executors, administrators, personal representatives, successors, and permitted assigns, and no other person or entity shall have any right to rely on this Agreement or to claim or derive any benefit here from absent the express written consent of the party to be charged with such reliance or benefit.

(d) This Agreement may not be orally modified. This Agreement can be modified only by a written document, signed by Executive and the CEO.

(e) The parties acknowledge that they have not relied on any representation, promise, or agreement of any kind, oral or written, made to either of them in connection with their decisions to accept this Agreement, except for those set forth in this Agreement.

(f) This Agreement contains the entire agreement of the parties hereto concerning the subject matter contained herein and supersedes any other prior written, or oral, agreements between them. There are no representations, agreements, arrangements or understandings between the parties hereto concerning the subject matter of this Agreement, whether oral or written, which are not fully expressed or referenced in the Agreements, and no unexecuted drafts of this Agreement or any notes, memoranda or other writings pertaining hereto shall be used to interpret any of the provisions of this Agreement.

(g) Executive represents and wan-ants that Executive has read this Agreement and Executive understands that this is an important legal document Executive hereby represents and warrants that Executive has been advised of his right to seek independent legal counsel in connection with the negotiation and execution of this Agreement and that Executive has either retained and has been represented by such legal counselor has knowingly and voluntarily waived his right to such legal counsel and desires to enter into this Agreement without the benefit of independent legal representation

[Signature Page Follows]

IN WITNESS WHEREOF, the Parties have set their hands hereto on the dates set forth below:

ADVANCED PLASMA THERAPIES, INC.		JOHN FERNANDES	
/s/ Michael Preston	11/11/14	/s/ John Fernandes	Nov 12, 2014
(signature)	(date)	(signature)	(date)
Executive Chairman			
(title)			
Michael Preston			
(print name)			

Exhibit 10.8

EMPLOYMENT AGREEMENT

This **EMPLOYMENT AGREEMENT ("Agreement"),** made effective as of November 1, 2015, is between Origin, Inc., a Delaware corporation (f/k/a Advanced Plasma Therapies, Inc., the **"Company"),** and Dr. David Dantzker **("Executive"),** an individual residing at 64 East 86th Street, New York NY 10028.

WHEREAS, Company desires to retain the services of Executive to serve as Vice Chairman and Chief Medical Officer; and

WHEREAS, Executive is willing to serve as Vice Chairman and Chief Medical Officer of the Company, upon the terms, and subject to the conditions, of this Agreement.

NOW, THEREFORE, in consideration of the premises stated above and the mutual covenants contained in this agreement, the parties hereby agree as follows:

1. Employment; Termination of Employment.

(a) Company shall employ Executive as Vice Chairman and Chief Medical Officer, and he shall have such duties and responsibilities as are customarily associated with such position and assigned to him by the Chief Executive Officer of the Company **("CEO")** and such other executives as may be designated by the CEO. Executive shall at all times report to and be managed under the direction of the CEO. Company shall employ Executive on an at-will basis, and accordingly, this Agreement may be terminated at will. "At-will" means that either party to this Agreement may terminate the employment and this Agreement at any time for any reason or no reason. The term that Executive is employed by the Company is referred to herein as the **"Employment Term."**

(b) Executive shall be entitled to six months' written notice to prior to termination of his employment without "Cause" as defined herein, *provided* that Executive signs and delivers a General Release with the terms set forth in the form annexed hereto as Exhibit "A." If Executive declines to sign and return the General Release, then the Company may terminate his employment without the six months' notice and Executive shall not be entitled to any further pay or benefits after his employment terminates. At its option, the Company may, after giving notice of termination without cause, relieve Executive of his duties and pay him his salary during the six-month notice period without requiring him to perform any additional work.

(c) The Company may terminate Executive's employment for Cause immediately without prior notice and without further obligation to Executive.

(d) If Executive resigns his employment for "Good Reason" as set forth herein he shall receive six months' salary in twelve equal bi-monthly payments, *provided* that Executive signs and delivers a General Release with the terms set forth in the form annexed hereto as Exhibit "A."

(e) Notwithstanding the foregoing, nothing herein shall be construed as a promise or agreement by or obligation of the Company to continue to employee Executive at any time during the period ending six (6) months from the date Employee begins work for Company.

(f) Executive shall devote no less than ninety percent (90%) of his full business time, labor, skill and energy to the business and affairs of the Company and to performing his duties and responsibilities to the Company. Executive shall perform Executive's duties and responsibilities to the Company diligently, competently, faithfully, and to the best of his ability. Executive shall perform his duties and the Company's principal business office or such other location as may be approved by the CEO.

(g) Executive represents and warrants to the Company that Executive has the right to negotiate and enter into this Agreement, and Executive's execution, delivery and performance of this Agreement does not breach, interfere with or conflict with any other contractual agreement, covenant not to compete, option, right of first refusal or other existing business relationship or any judgment or order, in each case, to which Executive is a party or otherwise subject. Executive acknowledges that this representation and warranty is a material inducement to the Company entering into this Agreement and in the event Executive breaches this representation and warranty,

Executive agrees to indemnify and hold harmless the Company from any and all claims, actions, losses, and damages, including, but not limited to, reasonable attorney's fees and expenses incurred by the Company as a result of such breach.

2. Compensation: Base Salary and Performance Bonus.

(a) As compensation for his services, Company will pay Executive a salary of $225,000 (two hundred twenty-five thousand dollars) per year in 24 equal bi-monthly installments.

(b) Executive shall be eligible to receive a bonus of up to 25% (twenty-five percent) of his salary, pro-rated for the months he is employed. The Company shall have sole discretion over whether to pay a bonus and the amount of any bonus paid. Bonuses will be paid on or before January 31 of each year based on the previous year.

(c) All payments made under this Agreement shall be made subject to applicable tax withholdings and other withholdings required by applicable law.

3. Benefits.

(a) Vacation Time. Executive shall be entitled to four (4) weeks paid vacation time per annum; *provided, however,* that all vacation time shall be pre-approved by the CEO, and Executive shall not be able to take vacation time at any time that would materially interfere with the business or operations of the Company. Executive shall not be permitted to carry over unused vacation time from year to year during the Employment Term, and unused vacation time shall not be paid out to Executive.

(b) Reimbursement for Expenses. The Company shall promptly reimburse Executive for all reasonable and necessary business expenses incurred by Executive in accordance with his duties and responsibilities hereunder, including, without limitation, telephone, facsimile, travel, lodging, entertainment and other customary charges incurred by Executive on behalf of the Company in the performance of his duties hereunder, upon the presentation by Executive of appropriate evidence and documentation of the incurrence thereof in accordance with the Company's policies from time to time in effect.

(c) Health Benefits. Executive shall be entitled to receive health benefits in accordance with the Company's group health plan on the same terms as other executive employees. The Company retains discretion to amend, alter, or discontinue the health plan and to amend, alter, or discontinue any benefits offered under it.

(d) Other. In addition, Executive shall receive such additional compensation or other benefits as are provided to Company employees generally and similarly-situated Company executives specifically, in each case as established by the Board in its discretion.

4. Restrictions Respecting Confidential Information, Non-Competition, etc.

(a) Acknowledgment of Executive. Executive acknowledges and agrees that by virtue of Executive's position and involvement with the business and affairs of the Company, Executive will develop substantial expertise and knowledge with respect to all aspects of the business, affairs and operations of the Company and will have access to all significant aspects of the business and operations of the Company and to confidential and proprietary information of the Company. As such, Executive acknowledges and agrees that the Company will be damaged if Executive were to breach or threaten to breach any of the provisions of this Section 4 or if Executive were to disclose or make unauthorized use of any confidential and proprietary information of the Company or otherwise engage in the activities prohibited by this Section 4. Accordingly, Executive expressly acknowledges and agrees that Executive is knowingly and voluntarily entering into this Agreement, and that the terms, provisions and conditions of this Section 4 are fair and reasonable and necessary to adequately protect the Company and its business.

(b) Confidentiality Agreement. Concurrently with the execution of this Agreement, Executive shall execute the Company's standard form of Confidentiality and Intellectual Property Assignment Agreement (the **"Confidentiality Agreement"),** the terms and provisions of which are incorporated herein by reference as binding and operative provisions of this Agreement.

(c) Non-Compete. During the Employment Term and for one (1) year after Executive ceases to be an employed by the Company for any reason, Executive shall not, directly or indirectly, manage, operate or control, or participate in the ownership, management,

operation or control of, or otherwise become interested in (whether as an owner, stockholder, member, partner, lender, consultant, executive, officer, director, agent supplier, distributor or otherwise) any business which is directly competitive with the business of the Company or any of its subsidiaries or affiliates, or, directly or indirectly, induce or influence any person that has a business relationship with the Company or any of its subsidiaries or affiliates to discontinue or reduce the extent of such relationship. For purposes of this Agreement, Executive shall be deemed to be directly or indirectly interested in a business if he is engaged or interested in that business as a stockholder, director, officer, executive, agent, member, partner, individual proprietor, consultant, advisor or otherwise, but not if Executive's interest is limited solely to the ownership of not more than 4.99% of the securities of any class of equity securities of a corporation or other entity whose shares are listed or admitted to trade on a national securities exchange or are quoted on the Over the Counter Bulletin Board or similar public trading system.

(d) No Solicitation. During the Employment Term and for one (1) year after Executive ceases to be an employed by the Company for any reason, Executive shall not, directly or indirectly, solicit to employ, or employ for himself or others, any employee of the Company, or any subsidiary or affiliate of the Company, who was an officer, director or employee of, or consultant or advisor to, the Company, or any subsidiary or affiliate of the Company, as of the date of the termination of Executive's employment with the Company or during the preceding six (6) month period, or solicit any such person to leave such person's position or join the employ of, or act in a similar capacity with, another, then or at a later time.

(e) No Limitation. The parties agree that nothing in this Agreement shall be construed to limit or negate the common law of torts, confidentiality, trade secrets, fiduciary duty and obligations where such laws provide the Company with any broader, further or other remedy or protection than those provided herein.

(f) Specific Performance. Because the breach or any threatened breach of any of the provisions of this Section 4 may result in immediate and irreparable injury to the Company for which the Company may not have an adequate remedy at law, Executive expressly agrees that the Company shall be entitled, in addition to all other rights and remedies available to it at law, in equity or otherwise, to a decree of specific performance of the restrictive covenants contained in this Section 4 and further to a temporary and permanent injunction enjoining such breach or threatened breach, in each case without the necessity of proving damages and without the necessity of posting bond or other security.

(g) Challenge of Agreement by Executive. In the event Executive challenges this Agreement and an injunction or other relief is issued staying the implementation of any of the restrictions imposed by Section 4 hereof, the time remaining on the restrictions shall be tolled until the challenge is resolved by final adjudication, settlement or otherwise, except that the time remaining on the restrictions shall not be tolled during any period in which Executive is unemployed,

(h) Interpretation of Restrictions. Executive acknowledges that the type and periods of restriction imposed by this Section 4 are fair and reasonable and are reasonably required for the protection of the legitimate interests of the Company and the goodwill associated with the business of the Company; and that the time, scope, geographic area and other provisions of this Agreement have been specifically negotiated by sophisticated commercial parties and are given as an integral part of the transactions contemplated hereby. If any of the covenants in this Section 9, or any part hereof, is hereafter construed to be invalid or unenforceable, the same shall not affect the remainder of the covenant or covenants herein, which shall be given full effect, without regard to the invalid portions. In the event that any covenant contained in this Agreement shall be determined by any court of competent jurisdiction to be unenforceable by reason of its extending for too great a period of time or over too great a geographical area or by reason of its being too extensive in any other respect, it shall be interpreted to extend only over the maximum period of time for which it may be enforceable and/or over the maximum geographical area as to which it may be enforceable and/or to the maximum extent in all other respects as to which it may be enforceable, all as determined by such court in such action.

(i) Severability of Covenants. Executive acknowledges and agrees that the provisions of this Section 4 are reasonable and valid in all respects. If any tribunal having jurisdiction determines that any of the provisions of this Section 4, or any part thereof, is invalid or unenforceable because of the duration or scope of such provision, such tribunal shall modify any such unenforceable provision as it

deems warranted to carry out the intent and agreement of the Parties as embodied herein to the maximum extent permitted by law; and/or if any particular provision herein shall be adjudicated to be prohibited, invalid or unenforceable, such that it cannot be amended to be enforceable, then such provision shall be deemed null and void, but shall not invalidate or render unenforceable any other provision contained within this Agreement, and the remainder of this Agreement shall be deemed and remain fully valid and enforceable.

5. Binding Effect. All of the terms and conditions of this Agreement shall be binding upon and inure to the benefit of Executive and Company and any successor-in-interest to any of them.

6. Arbitration.

(a) Any dispute involving Executive's employment with Company, any of the terms or conditions of Executive's employment with Company, or the interpretation or application of this Agreement, or the Confidentiality Agreement, shall be resolved by final and binding arbitration before one arbitrator designated by the American Arbitration Association, pursuant to the then prevailing rules of the AAA for the resolution of employment disputes, in Somerset County, New Jersey, or Mercer County, New Jersey, whose decision shall be final and binding and subject to confirmation in a court of competent jurisdiction with the prevailing party being awarded reimbursement of the arbitration filing fees and fees of the arbitrators. The arbitrator shall have authority to grant injunctive relief, including a temporary restraining order or preliminary injunction, to the extent permitted by AAA rules.

(b) Executive cannot participate in a representative capacity or as a member of any class of claims pertaining to any claim subject to the arbitration provision in this Agreement. There is no right or authority for any claims subject to this arbitration policy to be arbitrated on a class or collective action basis or on any basis involving claims brought in a purported representative capacity on behalf of any other person or group of people similarly situated. Such claims are prohibited. Furthermore, claims brought by or against either the Executive or the Company may not be joined or consolidated in the arbitration with claims brought by or against any other person or entity unless otherwise agreed to in writing by all parties involved.

7. Definitions of "Cause" and "Good Reason."

(a) Definition of "Cause." For purposes of this Agreement, the term **"Cause"** shall mean any of the following: (i) the repeated and demonstrated failure of Executive to substantially carry out the reasonable instructions of the Board, provided such instructions reasonably relate to and are not inconsistent with Executive's management position and standing, which such conduct is not cured within fifteen (15) days after receipt of written notice thereof by Executive from the Company; (ii) the breach by Executive of any of the terms or provisions of this Agreement or any other agreement between Executive, on the one hand, and the Company, on the other hand, on the part of Executive to be observed or performed, which failure or breach is not cured within fifteen (15) days after receipt of written notice thereof by Executive from the Company, (iii) Executive's knowing and willful neglect or refusal for any reason to attend to Executive's material duties and responsibilities under this Agreement which such conduct is not cured within fifteen (15) days after receipt of written notice thereof by Executive from the Company; (iv) any criminal liability of the Company which was substantially caused by the conduct of Executive; or (v) Executive's conviction by, or entry of a plea of guilty or *nolo contendere* in, a court of competent jurisdiction of an act of fraud, embezzlement or willful breach of fiduciary duty to the Company, or any crime constituting a felony.

(b) Definition of "Good Reason." For purposes of this Agreement, the term **"Good Reason"** for the Executive to terminate his employment hereunder shall mean the occurrence of any of the following events without the Executive's consent:

(i) a material and continuing diminution in the Executive's authority, duties or responsibilities under this Agreement relative to his authority, duties or responsibilities in effect immediately prior to such reduction;

(ii) a material change in the geographic location at which the Executive must primarily perform his duties to a point that is located more than fifty (50) miles from the Company's principal executive offices;

(iii) a material diminution by the Company of the Executive's Base Salary as initially set forth herein or as the same may be increased from time to time; or

(iv) any other action or inaction that constitutes a material breach by the Company or any successor or Affiliate of its obligations to the Executive under this Agreement;

provided, however, that such termination by the Executive shall only be deemed for Good Reason only if: (x) the Executive gives the Company written notice of the intent to terminate for Good Reason within thirty (30) days following the first occurrence of the condition(s) that the Executive believes constitutes Good Reason, which notice shall describe such condition(s); (y) the Company fails to remedy such condition(s) within thirty (30) days following receipt of the written notice (the **"Cure Period");** and (z) the Executive terminates his employment within thirty (30) days following the end of the Cure Period.

8. Miscellaneous.

(a) This Agreement shall be governed by and construed in accordance with the laws of the State of New Jersey applicable to agreements made and to be performed in that state, without regard or reference to its principles of conflicts of laws. This Agreement shall be construed and interpreted without regard to any presumption against the party causing this Agreement to be drafted. Each of the parties unconditionally and irrevocably consent to the exclusive jurisdiction of the courts of the State of New Jersey, County of Mercer, or the United States District Court for the District of New Jersey, with respect to any non-arbitrable claim, suit, action or proceeding arising out of or relating to this agreement and with respect to any action to enforce the terms of the arbitration clause herein. Each of the parties unconditionally and irrevocably waives any right to contest the venue of said courts or to claim that said courts constitute an inconvenient forum. Each of the parties unconditionally and irrevocably waives the right to a trial by jury in any action, suit or proceeding arising out of or relating to this Agreement.

(b) This Agreement may be executed in any number of counterparts, each of which shall be deemed to be original hereof, but all of which together shall constitute one and the same instrument and facsimile signatures delivered by fax or e-mail transmission shall be treated as originals.

(c) This Agreement is intended for the sole and exclusive benefit of the parties hereto and their respective heirs, executors, administrators, personal representatives, successors, and permitted assigns, and no other person or entity shall have any right to rely on this Agreement or to claim or derive any benefit here from absent the express written consent of the party to be charged with such reliance or benefit.

(d) This Agreement may not be orally modified. This Agreement can be modified only by a written document, signed by Executive and the CEO.

(e) The parties acknowledge that they have not relied on any representation, promise, or agreement of any kind, oral or written, made to either of them in connection with their decisions to accept this Agreement, except for those set forth in this Agreement.

(f) This Agreement contains the entire agreement of the parties hereto concerning the subject matter contained herein and supersedes any other prior written, or oral, agreements between them. There are no representations, agreements, arrangements or understandings between the parties hereto concerning the subject matter of this Agreement, whether oral or written, which are not fully expressed or referenced in the Agreements, and no unexecuted drafts of this Agreement or any notes, memoranda or other writings pertaining hereto shall be used to interpret any of the provisions of this Agreement.

(g) Executive represents and warrants that Executive has read this Agreement and Executive understands that this is an important legal document Executive hereby represents and warrants that Executive has been advised of his right to seek independent legal counsel in connection with the negotiation and execution of this Agreement and that Executive has either retained and has been represented by such legal counselor has knowingly and voluntarily waived his right to such legal counsel and desires to enter into this Agreement without the benefit of independent legal representation

[Signature Page Follows]

IN WITNESS WHEREOF, the Parties have set their hands hereto on the dates set forth below:

ORIGIN, INC.

/s/ Michael Preston
(signature) (date)

Executive Chairman and Chief Executive Officer
(title)

Michael Preston
(print name)

DAVID DANTZKER

/s/ David R. Dantzker
(signature) (date)

Exhibit 10.10

EMPLOYMENT AGREEMENT

This **EMPLOYMENT AGREEMENT** ("**Agreement**"), dated as of November 15, 2022 and effective as of the Employment Effective Date (as defined below), is between Origin Inc., a Delaware corporation (the "**Company**"), and Dr. Terry Treadwell ("**Executive**"), an individual residing at 7736 Wynlakes Blvd., Montgomery, AL 36117.

WHEREAS, Company desires to retain the services of Executive to serve as Chief Clinical Officer; and

WHEREAS, Executive is willing to serve as Chief Clinical Officer, upon the terms, and subject to the conditions, of this Agreement.

NOW, THEREFORE, in consideration of the premises stated above and the mutual covenants contained in this Agreement, the parties hereby agree as follows:

1. Employment; Termination of Employment.

(a) Company shall employ Executive as Chief Clinical Officer, and he shall have such duties and responsibilities as are customarily associated with such position and assigned to him by the Chief Medical Officer of the Company ("**CMO"**) or the President or Chief Executive Officer (the "**CEO**"). Such duties will include, but will not be limited to:

(i) Participating in clinical strategy discussions, including but not limited to the selection of incremental indications to study both within wound-healing and outside;

(ii) Establishing and managing the Company's clinical advisory boards and leading in the recruitment of advisory board members;

(iii) Assisting in the recruitment of clinical investigators for the Company's proposed pivotal trial in diabetic foot ulcers (the "**DFU Pivotal Trial**") and in the recruitment of a Principal Investigator for the DFU Pivotal Trial;

(iv) Playing a leading role in overseeing all clinical and regulatory aspects of the DFU Pivotal Trial;

(v) Designing and leading the Company's proof-of-concept study program;

(vi) Establishing and refining the clinical and regulatory aspect of the Company's marketing and advertising efforts focused on the wound-healing industry;

(vii) Guiding the Company's in-house marketing team in the development of appropriate marketing materials;

(viii) Assisting in the development of a training program for clinicians using the Company's technology; and

(ix) Participating in the commercial development of the Company's therapeutic device and improvements thereto or similar devices.

(b) It is expressly agreed that the term of Executive's employment by the Company (the "**Employment Term**") shall only commence, and the respective rights and obligations of the Company and the Executive hereunder or at law or otherwise shall only become effective, as of the date on which the Company receives gross proceeds of at least fifteen million U.S. dollars (US$15,000,000) from any public or private financing, or series of related financings (such date, the "**Employment Effective Date**").

(c) Commencing only on the Employment Effective Date, the Company shall employ Executive on an at-will basis, and accordingly, this Agreement may be terminated at will. "At-will" means that either party to this Agreement may terminate the employment and this Agreement at any time for any reason or no reason on no less than thirty (30) days' prior written notice to the other party. Notwithstanding anything herein to the contrary, nothing herein shall be construed as a promise or agreement by or obligation of the Company to continue to employee Executive at any time during the period ending six (6) months from the date Employment Effective Date.

(d) Executive shall at all times report to and be managed under the direction of the CMO but will have continuous direct interaction with other members of the Company's management and staff, including without limitation the CEO. .

(e) If Executive is terminated by the Company other than for "Cause" (as defined below), Executive shall (following the notice period provided for in Section 1I above) be entitled to a cash severance amount equal to fifty percent (50%) of the Executive's then current Base Salary (as defined below), *provided* that Executive signs and delivers a General Release with the terms set forth in the form annexed hereto as Exhibit "A." If Executive declines to sign and return the General Release, then the Company may terminate his employment and Executive shall not be entitled to any further pay or benefits after his employment terminates. At its option, the Company may, after giving notice of termination without "Cause", relieve Executive of his duties and pay him his salary during the thirty (30) day notice period without requiring him to perform any additional work.

(f) The Company may terminate Executive's employment for Cause immediately without prior notice and without further obligation to Executive.

(g) If Executive resigns his employment for "Good Reason" (as defined below) he shall receive a cash severance amount equal to fifty percent (50%) of the Executive's then current Base Salary, payable in twelve equal bi-monthly payments, *provided* that Executive signs and delivers a General Release with the terms set forth in the form annexed hereto as Exhibit "A."

(h) Subject to his continuing outside responsibilities as described in Section 2(i) below, Executive shall devote no less than fifty percent (50%) of his business time, labor, skill and energy to the business and affairs of the Company and to performing his duties and responsibilities to the Company as provided for herein. Executive shall perform Executive's duties and responsibilities to the Company diligently, competently, faithfully, and to the best of his ability. Executive shall perform his duties at the Company's principal business office or such other location as may be approved by the CMO or the CEO.

(i) It is understood and agreed that during the Employment Term, Executive shall have the right to continue to conduct wound care educational courses and to fulfil his duties to (i) the Institute of Advanced Wound Care in Montgomery, Alabama, (ii) the Symposium on Advanced Wound Care, (iii) the World Health Organization and (iv) Wounds Journal (collectively, the "**Other Employment Arrangements**"). Executive shall also be permitted to (x) maintain and oversee passive investments in, or be retained as a guest speaker to, companies that do not compete with the business of the Company and (y) be engaged in community and charitable service.

(j) Executive represents and warrants to the Company that (i) Executive has the right to negotiate and enter into this Agreement without breaching, interfering or conflicting with any other agreement, understanding or employment policy to which Executive is a party or otherwise subject, including, without limitation, those related to the Other Employment Arrangements, and (ii) Executive's execution, delivery and performance of this Agreement does not breach, interfere with or conflict with any other contractual agreement, covenant not to compete, option, right of first refusal or other existing business relationship or employment policy or any judgment or order, in each case, to which Executive is a party or otherwise subject including, without limitation, those related to the Other Employment Arrangements. Executive acknowledges that this representation and warranty is a material inducement to the Company entering into this Agreement and in the event Executive breaches this representation and warranty, Executive agrees to indemnify and hold harmless the Company and its officers, directors, affiliates, successors and assigns from any and all claims, actions, losses, costs and damages, including, but not limited to, reasonable attorney's fees and expenses incurred by the Company and such individuals or entities, as a result of or related to such breach.

2. Compensation: Base Salary and Bonus.

(a) As compensation for his services, Company will pay Executive a cash salary of $250,000 (two hundred and fifty thousand dollars) per year in 24 equal bi-monthly installments (the "**Base Salary**").

(b) Executive shall be eligible to receive an annual cash bonus of up to 30% (thirty percent) of his salary, pro-rated for the months he is employed. The Board of Directors of the Company or a designated committee thereof (the "**Board**") shall have sole discretion over whether to pay a bonus and the amount of any bonus paid. Bonuses will be paid on or before March 31 of each year based on the previous year.

(c) All payments made under this Agreement shall be made subject to applicable tax withholdings and other withholdings required by applicable law.

3. Benefits.

(a) Vacation Time. Executive shall be entitled to four (4) weeks paid vacation time per annum; *provided, however,* that all vacation time shall be pre-approved by the CMO or CEO, and Executive shall not be able to take vacation time at any time that would materially interfere with the business or operations of the Company. Executive shall not be permitted to carry over unused vacation time from year to year during the Employment Term, and unused vacation time shall not be paid out to Executive.

(b) Reimbursement for Expenses. The Company shall promptly reimburse Executive for all reasonable and necessary business expenses incurred by Executive in accordance with his duties and responsibilities hereunder, including, without limitation, telephone, travel, lodging, entertainment and other customary charges incurred by Executive on behalf of the Company in the performance of his duties hereunder, upon the presentation by Executive of appropriate evidence and documentation of the incurrence thereof in accordance with the Company's policies from time to time in effect.

(c) Health Benefits. Executive shall be entitled to receive health benefits in accordance with the Company's group health plan on the same terms as other executive employees. The Company retains discretion to amend, alter, or discontinue the health plan and to amend, alter, or discontinue any benefits offered under it.

(d) Stock Options. Executive shall, at the discretion of the Board, be entitled to participate in the Company's Equity Incentive Plan, a copy of which will be provided.

(e) Other. In addition, Executive shall receive such additional compensation or other benefits as are provided to Company employees generally and similarly-situated Company executives specifically, in each case as established by the Board in its discretion.

(f) Indemnification. In the event that the Executive is made a party or threatened to be made a party to any action, suit, or proceeding, whether civil, criminal, administrative or investigative (a "**Proceeding**"), other than any Proceeding initiated by or on behalf of the Executive or the Company related to any contest or dispute between the Executive and the Company or any of its affiliates with respect to this Agreement or the Executive's employment hereunder, by reason of the fact that the Executive is or was a director or officer of the Company, or any affiliate of the Company, or is or was serving at the request of the Company as a director, officer, member, employee or agent of another corporation or a partnership, joint venture, trust or other enterprise, the Executive shall be indemnified and held harmless by the Company to the maximum extent permitted under applicable law and the Company's organizational documents from and against any liabilities, costs, claims and expenses, including all reasonable costs and expenses incurred in defense of any Proceeding (including reasonable attorneys' fees). Reasonable costs and expenses incurred by the Executive in defense of such Proceeding (including reasonable attorneys' fees) shall be paid or reimbursed by the Company in advance of the final disposition of such litigation upon receipt by the Company of: (i) a written request for payment; (ii) appropriate documentation evidencing the incurrence, amount and nature of the costs and expenses for which payment is being sought; and (iii) an undertaking adequate under applicable law made by or on behalf of the Executive to repay the amounts so paid if it shall ultimately be determined that the Executive is not entitled to be indemnified by the Company under this Agreement; *provided, however*, that the timing of any such payments or reimbursements shall be subject to the provisions of Section 7(c) of this Agreement. During the Executive's employment with the Company and for a period of six (6) years thereafter, the Company or any successor to the Company shall purchase and maintain, at its own expense, directors' and officers' liability insurance providing coverage to the Executive on terms that are no less favorable than the coverage provided to other directors and similarly situated executives of the Company.

4. Restrictions Respecting Confidential Information, Non-Competition, etc.

(a) Acknowledgment of Executive. Executive acknowledges and agrees that by virtue of Executive's position and involvement with the business and affairs of the Company, Executive will develop substantial expertise and knowledge with respect to all aspects of the business, affairs and operations of the Company and will have access to all significant aspects of the business and operations of the Company and to confidential and proprietary information of the Company. As such, Executive acknowledges and agrees that the Company will be damaged if Executive were to breach or threaten to breach any of the provisions of this Section 4 or if Executive were to disclose or make unauthorized use of any confidential and proprietary information of the Company or otherwise engage in the activities prohibited by this Section 4. Accordingly, Executive expressly acknowledges and agrees that Executive is knowingly and voluntarily entering into this Agreement, and that the terms, provisions and conditions of this Section 4 are fair and reasonable and necessary to adequately protect the Company and its business.

(b) Confidentiality Agreement. Concurrently with the execution of this Agreement, Executive shall execute the Company's standard form of Confidentiality and Intellectual Property Assignment Agreement (the "**Confidentiality Agreement**"), the terms and provisions of which are incorporated herein by reference as binding and operative provisions of this Agreement.

(c) Non-Compete. During the Employment Term and for one (1) year after Executive ceases to be an employed by the Company for any reason, Executive shall not, directly or indirectly, manage, operate or control, or participate in the ownership, management, operation or control of, or otherwise become interested in (whether as an owner, stockholder, member, partner, lender, consultant, executive, officer, director, agent supplier, distributor or otherwise) any business which is directly competitive with the business of the Company or any of its subsidiaries or affiliates, or, directly or indirectly, induce or influence any person that has a business relationship with the Company or any of its subsidiaries or affiliates to discontinue or reduce the extent of such relationship. For purposes of this Agreement, Executive shall be deemed to be directly or indirectly interested in a business if he is engaged or interested in that business as a stockholder, director, officer, executive, agent, member, partner, individual proprietor, consultant, advisor or otherwise, but not if Executive's interest is limited solely to the ownership of not more than 4.99% of the securities of any class of equity securities of a corporation or other entity whose shares are listed or admitted to trade on a national securities exchange or are quoted on the Over the Counter Bulletin Board or similar public trading system.

(d) No Solicitation. During the Employment Term and for one (1) year after Executive ceases to be an employed by the Company for any reason, Executive shall not, directly or indirectly, solicit to employ, or employ for himself or others, any employee of the Company, or any subsidiary or affiliate of the Company, who was an officer, director or employee of, or consultant or advisor to, the Company, or any subsidiary or affiliate of the Company, as of the date of the termination of Executive's employment with the Company or during the preceding six (6) month period, or solicit any such person to leave such person's position or join the employ of, or act in a similar capacity with, another, then or at a later time.

(e) No Limitation. The parties agree that nothing in this Agreement shall be construed to limit or negate the common law of torts, confidentiality, trade secrets, fiduciary duty and obligations where such laws provide the Company with any broader, further or other remedy or protection than those provided herein.

(f) Specific Performance. Because the breach or any threatened breach of any of the provisions of this Section 4 may result in immediate and irreparable injury to the Company for which the Company may not have an adequate remedy at law, Executive expressly agrees that the Company shall be entitled, in addition to all other rights and remedies available to it at law, in equity or otherwise, to a decree of specific performance of the restrictive covenants contained in this Section 4 and further to a temporary and permanent injunction enjoining such breach or threatened breach, in each case without the necessity of proving damages and without the necessity of posting bond or other security.

(g) Challenge of Agreement by Executive. In the event Executive challenges this Agreement and an injunction or other relief is issued staying the implementation of any of the restrictions imposed by Section 4 hereof, the time remaining on the restrictions shall be

tolled until the challenge is resolved by final adjudication, settlement or otherwise, except that the time remaining on the restrictions shall not be tolled during any period in which Executive is unemployed,

(h) Interpretation of Restrictions. Executive acknowledges that the type and periods of restriction imposed by this Section 4 are fair and reasonable and are reasonably required for the protection of the legitimate interests of the Company and the goodwill associated with the business of the Company; and that the time, scope, geographic area and other provisions of this Agreement have been specifically negotiated by sophisticated commercial parties and are given as an integral part of the transactions contemplated hereby. If any of the covenants in this Section 9, or any part hereof, is hereafter construed to be invalid or unenforceable, the same shall not affect the remainder of the covenant or covenants herein, which shall be given full effect, without regard to the invalid portions. In the event that any covenant contained in this Agreement shall be determined by any court of competent jurisdiction to be unenforceable by reason of its extending for too great a period of time or over too great a geographical area or by reason of its being too extensive in any other respect, it shall be interpreted to extend only over the maximum period of time for which it may be enforceable and/or over the maximum geographical area as to which it may be enforceable and/or to the maximum extent in all other respects as to which it may be enforceable, all as determined by such court in such action.

(i) Severability of Covenants. Executive acknowledges and agrees that the provisions of this Section 4 are reasonable and valid in all respects. If any tribunal having jurisdiction determines that any of the provisions of this Section 4, or any part thereof, is invalid or unenforceable because of the duration or scope of such provision, such tribunal shall modify any such unenforceable provision as it deems warranted to carry out the intent and agreement of the Parties as embodied herein to the maximum extent permitted by law; and/or if any particular provision herein shall be adjudicated to be prohibited, invalid or unenforceable, such that it cannot be amended to be enforceable, then such provision shall be deemed null and void, but shall not invalidate or render unenforceable any other provision contained within this Agreement, and the remainder of this Agreement shall be deemed and remain fully valid and enforceable.

5. **Binding Effect.** All of the terms and conditions of this Agreement shall be binding upon and inure to the benefit of Executive and Company and any successor-in-interest to any of them.

6. Arbitration.

(a) Any dispute involving Executive's employment with Company, any of the terms or conditions of Executive's employment with Company, or the interpretation or application of this Agreement, or the Confidentiality Agreement, shall be resolved by final and binding arbitration before one arbitrator designated by the American Arbitration Association, pursuant to the then prevailing rules of the AAA for the resolution of employment disputes, in Somerset County, New Jersey, or Mercer County, New Jersey, whose decision shall be final and binding and subject to confirmation in a court of competent jurisdiction with the prevailing party being awarded reimbursement of the arbitration filing fees and fees of the arbitrators. The arbitrator shall have authority to grant injunctive relief, including a temporary restraining order or preliminary injunction, to the extent permitted by AAA rules.

(b) Executive cannot participate in a representative capacity or as a member of any class of claims pertaining to any claim subject to the arbitration provision in this Agreement. There is no right or authority for any claims subject to this arbitration policy to be arbitrated on a class or collective action basis or on any basis involving claims brought in a purported representative capacity on behalf of any other person or group of people similarly situated. Such claims are prohibited. Furthermore, claims brought by or against either the Executive or the Company may not be joined or consolidated in the arbitration with claims brought by or against any other person or entity unless otherwise agreed to in writing by all parties involved.

7. Definitions of "Cause" and "Good Reason"; 409A Compliance

(a) Definition of "Cause." (i) For purposes of this Agreement, the term "**Cause**" shall mean any of the following: (i) the repeated and demonstrated failure of Executive to substantially carry out the reasonable instructions of the CMO, the CEO or the Board, provided such instructions reasonably relate to and are not inconsistent with Executive's management position and standing, which such conduct (if capable of being cured) is not cured within fifteen (15) days after receipt of written notice thereof by Executive from the Company; (ii) the breach by Executive of any of the terms or provisions of this Agreement or any other agreement between Executive, on the one hand, and the Company, on the other hand, on the part of Executive to be observed or performed, which failure or breach is not cured (if capable of being cured) within fifteen (15) days after receipt of written notice thereof by Executive from the Company, (iii) Executive's knowing and willful neglect or refusal for any reason to attend to Executive's material duties and responsibilities under this Agreement which

such conduct is not cured (if capable of being cured) within fifteen (15) days after receipt of written notice thereof by Executive from the Company; (iv) any criminal liability of the Company which was substantially caused by the conduct of Executive; or (v) Executive's conviction by, or entry of a plea of guilty or *nolo contendere* in, a court of competent jurisdiction of an act of fraud, embezzlement or willful breach of fiduciary duty to the Company, or any crime constituting a felony.

(ii) For purposes of this Section 7(a), no act or failure to act on the part of the Executive shall be considered "*willful*" unless it is done, or omitted to be done, by the Executive in bad faith or without reasonable belief that the Executive's action or omission was in the best interests of the Company. Any act, or failure to act, based upon authority given pursuant to a resolution duly adopted by the Board or upon the advice of counsel for the Company shall be conclusively presumed to be done, or omitted to be done, by the Executive in good faith and in the best interests of the Company.

(iii) Termination of the Executive's employment shall not be deemed to be for Cause unless and until the Company delivers to the Executive a copy of a resolution duly adopted by the affirmative vote of not less than a majority of the Board (after reasonable written notice is provided to the Executive and the Executive is given an opportunity, together with counsel, to be heard before the Board), finding that the Executive has engaged in the conduct constituting Cause. The Company may place the Executive on paid leave for up to 60 days while it is determining whether there is a basis to terminate the Executive's employment for Cause. Such paid leave will not constitute Good Reason.

(b) Definition of "Good Reason." For purposes of this Agreement, the term "**Good Reason**" for the Executive to terminate his employment hereunder shall mean the occurrence of any of the following events without the Executive's consent:

(i) a material and continuing diminution in the Executive's authority, duties or responsibilities under this Agreement relative to his authority, duties or responsibilities in effect immediately prior to such reduction;

(ii) a material change in the geographic location at which the Executive must primarily perform his duties to a point that is located more than fifty (50) miles from the Executive's home in Montgomery, Alabama;

(iii) a material diminution by the Company of the Executive's Base Salary as initially set forth herein or as the same may be increased from time to time (unless such diminution is in connection with an equal percentage diminution in salary for all similarly situated officers of the Company);

(iv) any other action or inaction that constitutes a material breach by the Company or any successor or Affiliate of its obligations to the Executive under this Agreement;

(v) the Company's failure to obtain an agreement from any successor to the Company to assume and agree to perform this Agreement in the same manner and to the same extent that the Company would be required to perform if no succession had taken place, except where such assumption occurs by operation of law; or

(vi) the assignment to the Executive of duties materially inconsistent with the duties associated with the positions described in Section 1 as such duties are constituted as of the effective date of termination.

provided, however, that such termination by the Executive shall only be deemed for Good Reason only if: (x) the Executive gives the Company written notice of the intent to terminate for Good Reason within thirty (30) days following the first occurrence of the condition(s) that the Executive believes constitutes Good Reason, which notice shall describe such condition(s); (y) the Company fails to remedy such condition(s) within thirty (30) days following receipt of the written notice (the "***Cure Period***"); and (z) the Executive terminates his employment within thirty (30) days following the end of the Cure Period.

(c) (i) The intent of the parties is that payments and benefits under this Agreement comply with or be exempt from Section 409A of the Internal Revenue Code of 1986, as amended and the regulations and guidance promulgated thereunder and the regulations and guidance promulgated thereunder (collectively, "**Code Section 409A**") and, accordingly, to the maximum extent permitted, this Agreement shall be interpreted to be in compliance therewith or exempt therefrom. In no event whatsoever shall the Company be liable for any additional tax, interest or penalty that may be imposed on Executive by Code Section 409A or damages for failing to comply with Code Section 409A.

(ii) A termination of employment shall not be deemed to have occurred for purposes of any provision of this Agreement providing for the payment of any amounts or benefits upon or following a termination of employment unless such termination is also a "separation from service" within the meaning of Code Section 409A and, for purposes of any such provision of this Agreement, references to a "termination," "termination of employment" or like terms shall mean "separation from service."

(iii) Unless this Agreement provides a specified and objectively determinable payment schedule to the contrary, to the extent that any payment of base salary or other compensation is to be paid for a specified continuing period of time beyond the date of the Executive's separation from service in accordance with the Company's payroll practices (or other similar term), the payments of such base salary or other compensation shall be made in no even less frequently than monthly. Notwithstanding the foregoing, with respect to any payments that are intended to fall under the short-term deferral exemption from Code Section 409A, unless this Agreement provides a specified and objectively determinable payment schedule to the contrary, all payments due thereunder shall be made as soon as practicable after the right to payment vests and in all events by March 15 of the calendar year following the calendar year in which the right to payment vests. For purposes of this section, a right to payment will be treated as having vested when it is no longer subject to a substantial risk of forfeiture as determined by the Company in its sole discretion.

(iv) To the extent that reimbursements or other in-kind benefits under this Agreement constitute "nonqualified deferred compensation" subject to Code Section 409A, (i) all such expenses or other reimbursements hereunder shall be paid on or prior to the last day of the taxable year following the taxable year in which such expenses were incurred by Executive, (ii) no such reimbursement, expenses eligible for reimbursement, or in-kind benefits provided in any taxable year shall in any way affect the expenses eligible for reimbursement, or in-kind benefits to provided, in any other taxable year, and (iii) Executive's right to such reimbursement or in-kind benefits shall not be subject to liquidation or exchange for any other benefit.

(v) For purposes of Code Section 409A, Executive's right to receive any installment payment pursuant to this Agreement shall be treated as a right to receive a series of separate and distinct payments.

(vi) Whenever a payment under this Agreement specifies a payment period with reference to a number of days, the actual date of payment within the specified period shall be within the sole discretion of the Company.

(vi) Notwithstanding any other provision of this Agreement to the contrary, in no event shall any payment under this Agreement that constitutes nonqualified deferred compensation subject to Code Section 409A be subject to offset, counterclaim or recoupment by any other amount payable to Executive unless otherwise permitted by Code Section 409A.

8. Miscellaneous.

(a) In no event shall the Executive be obligated to seek other employment or take any other action by way of mitigation of the amounts payable to the Executive under any of the provisions of this Agreement. Any amounts payable pursuant to this Agreement shall not be reduced by compensation the Executive earns on account of employment with another employer.

(b) This Agreement shall be governed by and construed in accordance with the laws of the State of New Jersey applicable to agreements made and to be performed in that state, without regard or reference to its principles of conflicts of laws. This Agreement shall be construed and interpreted without regard to any presumption against the party causing this Agreement to be drafted. Each of the parties unconditionally and irrevocably consent to the exclusive jurisdiction of the courts of the State of New Jersey, County of Mercer, or the United States District Court for the District of New Jersey, with respect to any non-arbitrable claim, suit, action or proceeding arising out of or relating to this agreement and with respect to any action to enforce the terms of the arbitration clause herein. Each of the parties unconditionally and irrevocably waives any right to contest the venue of said courts or to claim that said courts constitute an inconvenient

forum. Each of the parties unconditionally and irrevocably waives the right to a trial by jury in any action, suit or proceeding arising out of or relating to this Agreement.

(c) This Agreement may be executed in any number of counterparts, each of which shall be deemed to be original hereof, but all of which together shall constitute one and the same instrument and facsimile signatures delivered by fax or e-mail transmission shall be treated as originals.

(d) This Agreement is intended for the sole and exclusive benefit of the parties hereto and their respective heirs, executors, administrators, personal representatives, successors, and permitted assigns, and no other person or entity shall have any right to rely on this Agreement or to claim or derive any benefit here from absent the express written consent of the party to be charged with such reliance or benefit.

(e) This Agreement may not be orally modified. This Agreement can be modified only by a written document, signed by Executive and the CEO.

(f) The parties acknowledge that they have not relied on any representation, promise, or agreement of any kind, oral or written, made to either of them in connection with their decisions to accept this Agreement, except for those set forth in this Agreement.

(g) This Agreement contains the entire agreement of the parties hereto concerning the subject matter contained herein and supersedes any other prior written, or oral, agreements between them. There are no representations, agreements, arrangements or understandings between the parties hereto concerning the subject matter of this Agreement, whether oral or written, which are not fully expressed or referenced in the Agreements, and no unexecuted drafts of this Agreement or any notes, memoranda or other writings pertaining hereto shall be used to interpret any of the provisions of this Agreement.

(h) Executive represents and warrants that Executive has read this Agreement and Executive understands that this is an important legal document Executive hereby represents and warrants that Executive has been advised of his right to seek independent legal counsel in connection with the negotiation and execution of this Agreement and that Executive has either retained and has been represented by such legal counselor has knowingly and voluntarily waived his right to such legal counsel and desires to enter into this Agreement without the benefit of independent legal representation.

[Signature Page Follows]

IN WITNESS WHEREOF, the Parties have set their hands hereto on the dates set forth below:

ORIGIN, INC.		DR. TERRY TREADWELL	
/s/ Michael Preston	11/16/22	/s/ Terry Treadwell, M.D.	11/15/2022
(signature)	(date)	(signature)	(date)

Chairman and Chief Executive Officer
(title)

Michael Preston
(print name)

EXHIBIT A
RELEASE AND WAIVER OF CLAIMS

TO BE SIGNED FOLLOWING TERMINATION WITHOUT CAUSE OR RESIGNATION FOR GOOD REASON

In consideration of the payments and other benefits set forth in the Employment Agreement dated as of November 15, 2022 (the "***Employment Agreement***"), to which this form is attached, I, **Dr. Terry Treadwell**, hereby furnish **Origin, Inc.** (the "***Company***"), with the following release and waiver (this "***Release***"). Any capitalized term used but not defined in this Release will have the meaning ascribed to such term in the Employment Agreement.

In exchange for the consideration provided to me by the Employment Agreement upon my separation from the Company, I hereby generally and completely release the Company and its Affiliates and their respective directors, officers, employees, shareholders, partners, agents, attorneys, representatives, insurers, predecessors, successors and assigns from any and all claims, liabilities and obligations, both known and unknown, that arise out of or are in any way related to events, acts, conduct, or omissions occurring prior to my signing this Release, except claims that the law does not permit me to waive by signing this Release. This general release includes, but is not limited to: (1) all claims arising out of or in any way related to my employment with the Company or the termination of that employment; (2) all claims related to my compensation or benefits from the Company, including salary, bonuses, commissions, vacation pay, expense reimbursements, severance pay, fringe benefits, stock, stock options, or any other ownership interests in the Company; (3) all claims for breach of contract, wrongful termination, and breach of the implied covenant of good faith and fair dealing; (4) all tort claims, including claims for fraud, defamation, emotional distress, and discharge in violation of public policy; and (5) all foreign, federal, state, and local statutory claims, including claims for discrimination, harassment, retaliation, attorneys' fees, or other claims arising under the federal Civil Rights Act of 1964 (as amended), the federal Americans with Disabilities Act of 1990, the federal Age Discrimination in Employment Act of 1967 (as amended) ("***ADEA***"), the California Fair Employment and Housing Act or any comparable Canadian statute.

Notwithstanding the foregoing, nothing in this Release shall constitute a release by me of any claims or damages based on any right I may have to enforce the Company's executory obligations under the Employment Agreement, or my eligibility for indemnification under applicable law, Company governance documents or under any applicable insurance policy with respect to my liability as an employee or officer of the Company, or my rights pursuant to my stock awards (including any stock options, restricted stock or other awards granted to me by Parent) pursuant to their terms.

I acknowledge that, among other rights, I am waiving and releasing any rights I may have under ADEA, that this Release is knowing and voluntary, and that the consideration given for this Release is in addition to anything of value to which I was already entitled as an executive of the Company. If I am 40 years of age or older upon execution of this Release, I further acknowledge that I have been advised, as required by the Older Workers Benefit Protection Act, that: (a) the release and waiver granted herein does not relate to claims under the ADEA which may arise after this Release is executed; (b) I should consult with an attorney prior to executing this Release; (c) I have twenty-one (21) days from the date of termination of my employment with the Company in which to consider this Release (although I may choose voluntarily to execute this Release earlier); (d) I have seven (7) days following the execution of this Release to revoke my consent to this Release; and (e) this Release shall not be effective until the seven (7) day revocation period has expired.

I acknowledge my continuing obligations under my Non-Disclosure and Assignment Agreement, the Employment Agreement and the Non-Competition Agreement. Pursuant to the Non-Disclosure and Assignment Agreement I understand that among other things, I must not use or disclose any confidential or proprietary information of the Company or its Affiliates and I must promptly return all property and documents (including all embodiments of proprietary information) of the Company and its Affiliates and all copies thereof in my possession or control. I understand and agree that my right to the severance pay I am receiving in exchange for my agreement to the terms of this Release is contingent upon my continued compliance with my Non-Disclosure and Assignment Agreement, the Employment Agreement and the Non-Competition Agreement.

This Release covers both claims that I know about or suspect, as well as those I do not know about or suspect. I expressly waive all rights afforded by any statute that limits the effect of a release with respect to unknown and unsuspected claims, including, without limitation, § 1542 of the Civil Code of the State of California, and any other similar foreign, state, provincial or local laws, which states as follows:

> "A GENERAL RELEASE DOES NOT EXTEND TO CLAIMS WHICH THE CREDITOR DOES NOT KNOW OR SUSPECT TO EXISTING HIS OR HER FAVOR AT THE TIME OF EXECUTING THE RELEASE, WHICH IF KNOWN BY HIM OR HER MUST HAVE MATERIALLY AFFECTED HIS OR HER SETTLEMENT WITH THE DEBTOR."

This Release constitutes the complete, final and exclusive embodiment of the entire agreement between the Company and me with regard to the subject matter hereof. I am not relying on any promise or representation by or on behalf of the Company that is not expressly stated herein. This Release may only be modified by a writing signed by both me and a duly authorized officer of the Company.

Date: November 15,2022

/s/ Terry Treadwell, M.D.

Name: Dr. Terry Treadwell

Exhibit 21.1

Subsidiaries

Name of Subsidiary	**Jurisdiction**
Advanced Plasma Therapies, Inc.	Delaware
Origin Life Sciences Limited	England and Wales
Origin Agribusiness Limited	England and Wales

Exhibit 23.1

INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM'S CONSENT

We consent to the inclusion in this Registration Statement of Origin Life Sciences, Inc. and Subsidiaries on Form S-1 of our report dated February 28, 2022, which includes an explanatory paragraph as to the Company's ability to continue as a going concern, with respect to our audit of the financial statements of Origin, Inc. (now known as Origin Life Sciences, Inc.) and Subsidiaries as of December 31, 2022 and 2021, which report appears in the Prospectus, which is part of this Registration Statement. We also consent to the reference to our Firm under the heading "Experts" in such Prospectus.

/s/ Liebman Goldberg & Hymowitz LLP

Liebman Goldberg & Hymowitz LLP
Garden City, NY
March 13, 2023

Exhibit 107

Calculation of Filing Fee Tables

FORM S-1
(Form Type)

ORIGIN LIFE SCIENCES, INC.
(Exact Name of Registrant as Specified in its Charter)

Table 1: Newly Registered and Carry Forward Securities

	Security Type	Security Class Title	Fee Calculation Rule	Amount Registered	Proposed Maximum Offering Price Per Unit	Maximum Aggregate Offering Price (1)(2)	Fee Rate	Amount of Registration Fee
Newly Registered Securities								
Fees to Be Paid	Equity	Common Stock, par value $0.01 per share, pursuant to Public Offering Prospectus (1)(2)	457(o)	$17,250,000	—	$17,250,000	$0.0001102	$ 1,900.95
Fees to Be Paid	Equity	Representative's Warrants (3)	457(g)	—	—	—	—	—
Fees to Be Paid	Equity	Shares of Common Stock, issuable upon exercise of the Representative's Warrant(4)	457(g)	$ 1,328,250	—	$ 1,328,250	$0.0001102	$ 146.38
Fees to Be Paid	Equity	Common Stock, par value $0.01 per share, pursuant to Resale Prospectus(5)	457(a)	775,900 shares	$ 5.00	$ 3,879,500	$0.0001102	$ 427.52
		Total Offering Amounts				$18,578,250		$ 2,474.85
		Total Fees Previously Paid						
		Total Fee Offsets						—
		Net Fee Due						$ 2,474.85

(1) Includes additional shares of common stock that may be issued upon exercise of a 45-day option granted to the underwriters to cover over-allotments, if any. Also includes an indeterminate number of securities that may become offered, issuable or sold to prevent dilution resulting from stock splits, stock dividends and similar transactions, which are included pursuant to Rule 416 under the Securities Act of 1933, as amended (the "Securities Act").

(2) Estimated solely for the purpose of calculating the registration fee pursuant to Rule 457(o) promulgated under the Securities Act.

(3) No separate registration fee required pursuant to Rule 457(g) of the Securities Act.

(4) Estimated solely for the purpose of calculating the registration fee pursuant to Rule 457(g) under the Securities Act. We have agreed to issue to the representative of the underwriters warrants to purchase the number of shares of our common stock (the "Representative's Warrants") in the aggregate equal to seven percent (7%) of the shares of our common stock to be issued and sold in this offering (including shares issuable upon exercise of the over-allotment option described herein). The Representative's Warrants are exercisable for a price per share equal to 110% of the public offering price. As estimated solely for the purpose of calculating

the registration fee pursuant to Rule 457(g), the proposed maximum aggregate offering price of the Representative's Warrants is $1,328,250, which is equal to 110% of $1,207,500 (7% of $17,250,000).

(5) Pursuant to a resale offering at a presumed offering price of $5.00 per share.