Filed Pursuant to Rule 424(b)(5)
Registration No. 333-269225

(To Prospectus dated January 25, 2023)

Up to $10,000,000
Common Stock

Oragenics, Inc.

We have entered into an At-The-Market Issuance Sales Agreement (the "Sales Agreement") with Dawson James Securities, Inc. (the "Sales Agent" or "Dawson James Securities, Inc.") relating to the sale of shares of our common stock, par value $0.001 per share, offered by this prospectus supplement and the accompanying prospectus. In accordance with the terms of the Sales Agreement, we may offer and sell shares of our common stock bearing an aggregate offering price of up to $10,000,000 from time to time through or to Dawson James Securities, Inc., acting as an agent or principal.

Our common stock is listed on the NYSE American under the symbol "OGEN". The last reported sale price of our common stock on the NYSE American on October 7, 2024, was $0.40 per share.

As of October 9, 2024, the aggregate market value of our outstanding common stock held by non-affiliates, or the public float, was approximately $21,215,963.55, which was calculated based on 9,513,885 shares of our outstanding common stock held by non-affiliates and on a price of $2.23 per share, which is the highest closing price of our common stock on the NYSE American within the prior 60 days. Pursuant to General Instruction I.B.6 of Form S-3, in no event will we sell our securities in a public primary offering with a value exceeding one-third of our public float in any 12-month period unless our public float subsequently rises to $75.0 million or more. During the 12-calendar month period that ends on, and includes, the date of this prospectus supplement (but excluding this offering), we have offered and sold $3,200,000 of our securities pursuant to General Instruction I.B.6 of Form S-3.

Sales of our common stock, if any, under this prospectus supplement will be made in sales deemed to be an "at the market offering" as defined in Rule 415(a)(4) promulgated under the Securities Act of 1933, as amended (the "Securities Act"). Dawson James Securities, Inc. is not required to sell any specific amount of securities but will be acting as our sales agent using commercially reasonable efforts consistent with its normal trading and sales practices, on mutually agreed terms between Dawson James Securities, Inc. and us. There is no arrangement for funds to be received in an escrow, trust or similar arrangement.

The compensation to Dawson James Securities, Inc. for sales of common stock sold pursuant to the Sales Agreement will be up to 3% of the gross proceeds of any shares of common stock sold under the Sales Agreement. In connection with the sale of the common stock on our behalf, Dawson James Securities, Inc. will be deemed to be an "underwriter" within the meaning of the Securities Act and the compensation of Dawson James Securities, Inc. will be deemed to be underwriting commissions or discounts. We have also agreed to provide indemnification and contribution to Dawson James Securities, Inc. with respect to certain liabilities, including liabilities under the Securities Act or the Securities Exchange Act of 1934, as amended (the "Exchange Act"). For additional information regarding compensation to be received by the Sales Agent, see "Plan of Distribution."

Investing in our securities involves significant risks. Please read the information contained in or incorporated by reference under the heading "Risk Factors" beginning on page S-12 of this prospectus supplement, and under similar headings in other documents filed after the date hereof and incorporated by reference into this prospectus supplement and the accompanying prospectus.

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

Dawson James Securities, Inc.

The date of this prospectus supplement is October 11, 2024

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Prospectus Supplement

Prospectus

ABOUT THIS PROSPECTUS SUPPLEMENT

This document is part of the registration statement on Form S-3 that we filed with the Securities and Exchange Commission, or the SEC, using a "shelf" registration process (Registration File No. 333-269225) and consists of two parts. The first part is this prospectus supplement describes the specific terms of this offering. The second part, the accompanying prospectus, gives more general information, some of which may not apply to this offering. Generally, when we refer only to the "prospectus," we are referring to both parts combined. This prospectus supplement may add to, update or change information in the accompanying prospectus and the documents incorporated by reference into this prospectus supplement or the accompanying prospectus.

If information in this prospectus supplement is inconsistent with the accompanying prospectus or with any document incorporated by reference that was filed with the SEC before the date of this prospectus supplement, you should rely on this prospectus supplement. This prospectus supplement, the accompanying prospectus and the documents incorporated into each by reference include important information about us, the securities being offered and other information you should know before investing in our securities. You should also read and consider information in the documents we have referred you to in the sections of this prospectus supplement entitled "Where You Can Find Additional Information" and "Incorporation of Certain Information by Reference".

You should rely only on this prospectus supplement, the accompanying prospectus, the documents incorporated or deemed to be incorporated by reference herein or therein and any free writing prospectus prepared by us or on our behalf. We have not authorized anyone to provide you with information that is in addition to or different from that contained or incorporated by reference in this prospectus supplement and the accompanying prospectus. If anyone provides you with different or inconsistent information, you should not rely on it. We are not offering to sell these securities in any jurisdiction where the offer or sale is not permitted. You should not assume that the information contained in this prospectus supplement, the accompanying prospectus or any free writing prospectus, or incorporated by reference herein, is accurate as of any date other than as of the date of this prospectus supplement or the accompanying prospectus or any free writing prospectus, as the case may be, or in the case of the documents incorporated by reference, the date of such documents regardless of the time of delivery of this prospectus supplement and the accompanying prospectus or any sale of our securities. Our business, financial condition, liquidity, results of operations and prospects may have changed since those dates.

References to, "we," "us," "our company," "Oragenics," the "Company," and similar terms refer to Oragenics, Inc., a Florida corporation, unless the context otherwise requires.

No action is being taken in any jurisdiction outside the United States to permit a public offering of the securities or possession or distribution of this prospectus supplement or the accompanying prospectus in that jurisdiction. Persons who come into possession of this prospectus supplement or the accompanying prospectus in jurisdictions outside the United States are required to inform themselves about, and to observe, any restrictions as to this offering and the distribution of this prospectus supplement or the accompanying prospectus applicable to that jurisdiction.

The industry and market data and other statistical information contained in this prospectus supplement, the accompanying prospectus and the documents we incorporate by reference are based on management's estimates, independent publications, government publications, reports by market research firms or other published independent sources, and, in each case, are believed by management to be reasonable estimates. Although we believe these sources are reliable, we have not independently verified the information. None of the independent industry publications used in this prospectus supplement, the accompanying prospectus or the documents we incorporate by reference were prepared on our or our affiliates' behalf and none of the sources cited by us consented to the inclusion of any data from its reports, nor have we sought their consent.

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

CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus and the documents incorporated by reference herein contain forward-looking statements. These are based on our management's current beliefs, expectations and assumptions about future events, conditions and results and on information currently available to us. Discussions containing these forward-looking statements may be found, among other places, in the sections entitled "Business," "Risk Factors" and "Management's Discussion and Analysis of Financial Condition and Results of Operations" contained in the documents incorporated by reference herein.

Any statements in this prospectus, or incorporated herein, about our expectations, beliefs, plans, objectives, assumptions or future events or performance are not historical facts and are forward-looking statements. Within the meaning of Section 27A of the Securities Act and Section 21E of the Exchange Act, these forward-looking statements include statements regarding:

- Our need to raise additional capital to continue to implement our business strategy;
- Our financial capacity and performance, including our ability to obtain funding, non-dilutive or otherwise, necessary to do the research, development, manufacture, and commercialization of any one or all of our product candidates;
- Our ability to maintain our listing on the NYSE American and the trading market of our common stock;

- The timing, progress and results of clinical trials of our product candidates;
- Uncertainties regarding submission, approval and scope of filings for regulatory approval of our product candidates and our ability to obtain and maintain regulatory approvals for our product candidates for any indication;
- Uncertainties regarding the potential benefits, activity, effectiveness and safety of our product candidates including as to administration, distribution and storage;
- Uncertainties regarding the size of the patient populations, market acceptance and opportunity for and clinical utility of our product candidates, if approved for commercial use;
- Our manufacturing capabilities and strategy, including the scalability and commercial viability of our manufacturing methods and processes, and those of our contractual partners;
- Our ability to successfully commercialize our product candidates;
- The potential benefits of, and our ability to maintain, our relationships and collaborations with the NIAID, the NIH, the NRC and other potential collaboration or strategic relationships;
- Uncertainties regarding our expenses, ongoing losses, future revenue, capital requirements;
- Our ability to identify, recruit and retain key personnel and consultants, and have them available to dedicate the time necessary to advance our product candidates;
- Our ability to obtain, retain, protect, and enforce our intellectual property position for our product candidates, and the scope of such protection;
- Our ability to advance the development of our new and existing product candidate under the timelines and in accord with the milestones projected;

- Our need to comply with extensive and costly regulation by worldwide health authorities, who must approve our product candidates prior to substantial research and development and could restrict or delay the future commercialization of certain of our product candidates;
- Our ability to successfully complete pre-clinical and clinical development of, and obtain regulatory approval of our product candidates and commercialize any approved products on our expected timeframes or at all;
- The safety, efficacy, and benefits of our product candidates;
- The effects of government regulation and regulatory developments, and our ability and the ability of the third parties with whom we engage to comply with applicable regulatory requirements;
- The capacities and performance of our suppliers and manufacturers and other third parties over whom we have limited control; and
- Our competitive position and the development of and projections relating to our competitors or our industry.

In some cases, you can identify forward-looking statements by the words "may," "might," "can," "will," "to be," "could," "would," "should," "expect," "intend," "plan," "objective," "anticipate," "believe," "estimate," "predict," "project," "potential," "likely," "continue" and "ongoing," or the negative of these terms, or other comparable terminology intended to identify statements about the future, although not all forward-looking statements contain these words. These statements involve known and unknown risks, uncertainties and other factors that may cause our actual results, levels of activity, performance or achievements to be materially different from the information expressed or implied by these forward-looking statements.

You should refer to the "Risk Factors" section contained in this prospectus and any related free writing prospectus, and under similar headings in the other documents that are incorporated by reference into this prospectus, for a discussion of important factors that may cause our actual results to differ materially from those expressed or implied by our forward-looking statements. Given these risks, uncertainties and other factors, many of which are beyond our control, we cannot assure you that the forward-looking statements in this prospectus will prove to be accurate, and you should not place undue reliance on these forward-looking statements. Furthermore, if our forward-looking statements prove to be inaccurate, the inaccuracy may be material. In light of the significant uncertainties in these forward-looking statements, you should not regard these statements as a representation or warranty by us or any other person that we will achieve our objectives and plans in any specified time frame, or at all.

Except as required by law, we assume no obligation to update these forward-looking statements publicly, or to revise any forward-looking statements to reflect events or developments occurring after the date of this prospectus, even if new information becomes available in the future.

PROSPECTUS SUPPLEMENT SUMMARY

This summary highlights certain information appearing elsewhere in this prospectus. Because it is only a summary, it does not contain all of the information that you should consider before investing in our common stock and it is qualified in its entirety by, and should be read in conjunction with, the more detailed information appearing elsewhere in this prospectus. Before you decide to invest in our common stock, you should read the entire prospectus carefully, including "Risk Factors" beginning on page S-12 and the financial statements and related notes included in this prospectus.

Our Company

We are a development-stage company dedicated to the research and development of nasal delivery pharmaceutical medications in neurology and fighting infectious diseases. Our lead product, the ONP-002 drug, is a fully synthetic, non-naturally occurring neurosteroid, is lipophilic, and it has been shown in animal models that it can cross the blood-brain barrier rapidly to reduce swelling, oxidative stress and inflammation while restoring proper blood flow through gene amplification.

On December 28, 2023, we successfully consummated our previously announced Asset Purchase Agreement with Odyssey Health, Inc. ("Odyssey"), pursuant to which we purchased all of Odyssey's assets related to the segment of Odyssey's business focused on developing medical products that treat brain related illnesses and diseases (the "Neurology Assets"). The Neurology Assets include drug candidates for treating mild traumatic brain injury (mTBI), also known as concussion, and for treating Niemann Pick Disease Type C (NPC), as well as Odyssey's novel proprietary nasal formulation and its novel breath-powered intranasal delivery device.

As a result of the acquisition of the Neurology Assets, we expect that, in the near- and mid-terms, we will focus our resources and efforts on the continued development of the Neurology Assets and primarily ONP-002, which, as discussed further below, has successfully completed Phase 1 clinical trials. The acquisition is expected to build on our expertise in intranasal platforms and expand our portfolio into more areas of unmet medical needs. Nasal delivery offers many advantages over standard systemic delivery systems, such as its non-invasive character, a fast onset of action and in many cases reduced side effects due to a more targeted delivery.

Accordingly, given our limited resources, we anticipate, for the time being, placing the development of our nasal COVID-19 product candidate and our lantibiotics program on hold.

In conjunction with the Neurology Asset acquisition, we paid Odyssey a total of $1,000,000 in cash, $500,000 of which was paid in October, 2023 and $500,000 of which was paid on December 11, 2023. In addition, at the closing, we issued Odyssey 8,000,000 shares of our newly created Series F Non-Voting Convertible Preferred Stock, which are convertible into our common stock on a one-to-one basis (subject to certain adjustments). Odyssey converted 511,308 of those shares into our common stock on December 28, 2023. Pursuant to the Certificate of Designation creating the Series F Preferred Stock, the remainder of the shares are not convertible until the occurrence of all of the following: (i) Oragenics' shall have applied for and been approved for initial listing on the NYSE American or another national securities exchange or shall have been delisted from the NYSE American, which Oragenics' does not anticipate undertaking until it meets the NYSE American's initial listing standards, and (ii) if required by the rules of the NYSE American, Oragenics' shareholders shall have approved any change of control that could be deemed to occur upon the conversion of the Series F Preferred Stock into common stock, based on the fact and circumstances existing at such time.

About Mild Traumatic Brain Injury (mTBI)

Concussions are a serious unmet medical need that affects millions worldwide. Repetitive concussions are thought to increase the risk of developing Chronic Traumatic Encephalopathy ("CTE") and other neuropsychiatric disorders. It is estimated that 5 million concussions occur in the U.S. annually and that as many as 50% go unreported. The worldwide incidence of concussion is estimated at 69 million. The global market for concussion treatment was valued at $6.9 billion in 2020 and is forecast to reach $8.9 billion by 2027, according to Grandview Research. Common settings for concussion include contact sports, military training and operations, motor vehicle accidents, children at play and elderly falls.

Our ONP-002 Neurology Asset for Brain Related Illness and Injury

Our lead product and focus is on the development and commercialization of ONP-002 for the treatment of mild traumatic brain injury ("mTBI" or "concussion"). ONP-002 to date has been shown to be stable up to 104 degrees for 18-months. The ONP-002 drug candidate is used in conjunction with Oragenic's novel breath-powered intranasal device. In use, breath power drives the ONP-002 drug candidate from the novel intranasal device through the nasal passage and directly into the brain for mTBI or concussion treatment. The novel intranasal device is lightweight and uniquely designed for easy and simple use in the field.

We believe the proprietary nasal formulation and intranasal administration allows for rapid and direct accessibility to the brain. The novel intranasal device is breath propelled and is designed to drive and concentrate the ONP-002 drug into the brain, which then easily crosses the blood brain barrier. In operation, when patients blow into the intranasal device, the soft palate closes in the back of the nasopharynx. This mechanism is designed to prevent the flow of the ONP-002 drug into the lungs or esophagus, minimize systemic ONP-002 drug exposure and side effects, and concentrate the ONP-002 drug flow into the brain. In other words, this mechanism is designed to trap the ONP-002 drug in the nasal cavity allowing for more abundant and faster drug availability in the traumatized brain.

Expected ONP-002 Product Development Timeline:

Pre-clinical Animal Studies	*Phase 1*	*Phase 2a*	*Phase 2b*	*Phase 3*
Complete	*Complete*	*Estimated Q3/Q4 2024 start*	*Estimated Q1 2025 start*	*Estimated Q4 2026 start*

This product development plan is an estimate and is subject to change based on funding, technical risks and regulatory approvals.

Validation and Stability of ONP-002

A Certificate of Analysis ("COA") was issued by the manufacturer of the drug, indicating that testing methods were standard and include appearance, identification by 1H NMR, identification by Mass Spectroscopy (MS), optical purity by HPLC, residual solvent analysis, elemental impurities, percent water, and residue on ignition. The manufacturer has shown both the specifications and the results, indicating that the material supplied passes all criteria. The ONP-002 drug is supplied in essentially pure form. As such, no excipients are believed to be present. Stability studies were performed by storing the ONP-002 drug samples under carefully controlled conditions with respect to temperature and humidity. The stability testing protocol included storage at about 25 °C± 2 °C at about 60% relative humidity ± 5% relative humidity for about 24 months and at about 40 °C± 2 °C at about 75% relative humidity ± 5% for about 18 months. The ONP-002 drug samples were pulled at essentially the scheduled time and analyzed for appearance, purity, assay, optical purity, and water content. No changes in ONP-002 were observed.

Intellectual Property

Domestic and foreign patents applications on the ONP-002 compound have been filed and to date, several have been issued. Domestic and foreign patent applications have also been filed on the novel breath-powered intranasal delivery device as follows:

- New chemical entity IP filings – USPTO pending, granted in Europe and Canada
  - C-20 steroid compounds, compositions and uses thereof to treat traumatic brain injury (TBI), including concussion.
  - The invention relates to ONP-002 drug compound, compositions and methods of use thereof to treat, minimize and/or prevent traumatic brain injury (TBI), including severe TBI, moderate TBI, and mild TBI, including concussions.

  - Patent expiration with max patent term extension – 9/17/2040
  - Patent expiration with no patent term extension – 9/17/2035
- Method of intranasal delivery and device components – Domestic and Foreign patent applications pending

- Breath-powered intranasal device and use thereof – Domestic and Foreign patent applications pending

ONP-002 Pre-Clinical Trials

The ONP-002 drug has completed toxicology studies in rats and dogs. Those studies show that the ONP-002 drug has a large safety margin of its predicted efficacious dose. In preclinical animal studies, the ONP-002 drug demonstrated rapid and broad biodistribution throughout the brain while simultaneously reducing swelling, inflammation, and oxidative stress, along with an excellent safety profile.

Results from the preclinical studies suggest that the ONP-002 drug has an equivalent, and potentially superior, neuroprotective effect compared to related neurosteroids. The animals treated with the ONP-002 drug post-concussion showed positive behavioral outcomes using various testing platforms including improved memory and sensory-motor performance, and reduced depression/anxiety like behavior.

ONP-002 Drug Induction of PXR

The induction of the human CYP450 enzymes, CYP2B6, and CYP3A4 by ONP-002, as measured by mRNA expression, was tested in human hepatocytes from 3 donors at 3 concentrations: about 1 μM, about 10 μM and about 100 μM. Results reflected that the ONP-002 drug through the known PXR-mechanism produced a modest induction of CYP3A4, up to about 17% of the positive control, and a greater induction of CYP2B6, of up to about 59% of the positive control, both at a concentration of about 100 μM. Past data reflected that the ONP-001 drug candidate (*ent*-Progesterone) and Progesterone induce the PXR receptor. Receptor binding studies have been performed showing neither the ONP-001 drug candidate or the ONP-002 drug activate the classical Progesterone Receptor.

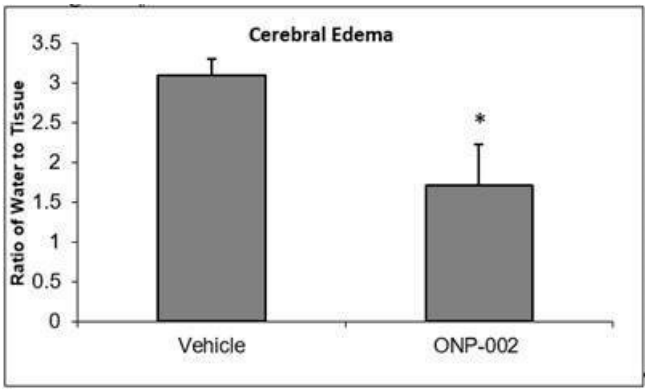
ONP-002 Drug Animal Studies

All surgical animals (male Sprague-Dawley rats approx. 250 grams) were anesthetized with an initial isoflurane induction for about 4 min-the minimum time necessary to sedate the animal. The scalp was shaved and cleaned with isopropanol and betadine. During the stereotaxic surgery, anesthesia was maintained with isoflurane. A medial incision was made, and the scalp was pulled back over the medial frontal cortex. An approximate 6-mm diameter craniotomy was performed exposing the brain tissue. An electrically controlled injury device using a 5 mm metal impactor was positioned over the exposed brain. An impact speed of about 1.6 m/s at about a 90-degree angle from vertical was used to produce an open head injury at a depth of 1mm to create a milder TBI. All treatments were given intranasal (IN) as a liquid solution with a micro atomizer. Vehicle for all administrations was about 22.5% Hydroxy-Propyl-β-cyclodextrin (HPβCD).

Molecular Studies - Brain tissue was taken from the penumbral region of injury.

Cerebral Edema

In Figure 2, we show that the ONP-002 drug reduces swelling in rats compared to vehicle-treated at 24-hrs after brain injury by measure of brain water content through speed-vacuum dehydration and tissue weight comparisons. The ONP-002 drug-treated (about 4mg/kg) and vehicle-treated were compared to sham which was set at zero. Local edema can occur after mTBI. Severe cerebral edema is associated with poor outcomes including increased mortality after mTBI with Second Impact Syndrome (2). ***Denotes significance at p<0.05, n=6**



Inflammation

mTBI causes vascular and neuronal stress. Microglia and reactive astrocytes infiltrate the areas of injury and release inflammatory mediators, like TNF-alpha. We show that the ONP-002 drug (about 4mg/kg) reduces TNF-alpha-mediated neuroinflammation in brain tissue of rats compared to vehicle at approximately 24-hrs after mTBI (ELISA).

Pharmacokinetics and Safety of IN ONP-002 Drug in Dog

This pivotal GLP 14-day study used repeat dosing of the ONP-002 drug, 3X a day, approximately about 4 hours apart, for approximately 14 consecutive days at concentrations of about 0, 3, 10 or 23 mg/mL at a volume of about 1 mL/nostril to beagle dogs (both nostrils had drug administered). The intranasal treatment was given as a liquid solution using a micro atomizer using about 22.5% HPβCD as the vehicle. Intranasal ONP-002 drug dosing revealed that the ONP-002 drug was well tolerated up to the highest dose of about 23 mg/ml or about 46mg in total per dosing. Clinical observations were limited to increased salivation in dogs which occurred in a dose-dependent manner. There were no effects on body weight, food consumption, ophthalmic parameters, clinical chemistry, haematology, or organ weights at any of the doses tested. Microscopic analysis revealed purulent exudates in the nasal turbinate and evidence of inflammatory infiltrates and fibrin deposition in the lungs. All of these events were classified as mild, reversed during the recovery period, and did not appear to show any dose dependency. Similar findings were evident in vehicle control treated dogs indicating the findings were vehicle related. The highest dose of about 23 mg/ml was thus determined to be the NOAEL which is equivalent to a ONP-002 dose of about 1.5mg/kg and about 2.3mg/kg in male and female dogs, respectively. Testing shows the dose-dependent increase in plasma exposure of the ONP-002 drug in male and female dogs following IN administration. Plasma exposure levels were similar in males and females and there did not appear to be any evidence of drug accumulation following multiple doses.

Cardiopulmonary Safety Pharmacology

The effect of the ONP-002 drug on the human ether-a-go-go related gene (hERG) tail currents was assessed in a non-Good Laboratory Practice (GLP) study using manual whole-cell patch clamp. The ONP-002 drug tested at a single concentration of about 10 μM inhibited hERG tail currents by about 42.6% (n=3). In order to achieve a

safety factor of about 30-fold between in vitro hERG IC50 and free plasma levels of the ONP-002 drug in clinical studies, the Cmax (maximum concentration) should not exceed a free drug concentration of about 0.33 μM (about 99 ng/ml). The ONP-002 drug is about 97.2% human plasma protein bound and is estimated to reach a plasma Cmax of about 12.5 nM, the highest dose of about 0.533 mg/kg to be administered in the planned first in human (FIH) study, which provides a safety factor of about 800-fold. A GLP study has been conducted at Charles River, Inc. and will be incorporated into the IND submission.

ONP-002 Drug Clinical Trials

The ONP-002 drug has completed a Phase 1 clinical trial in healthy human subjects showing it is safe and well tolerated.

Safety studies have established a dosing regimen of 2X/day for fourteen days. The Phase 1 clinical trial was performed in Melbourne, Australia with a Contract Research Organization (CRO), Avance Clinical Pty Ltd and Nucleus Network Pty Ltd. The country of Australia provides a currency exchange advantage and a tax rebate at the end of our fiscal year from the Australian government on all Research and Development performed in Australia.

The Phase 1 study was double-blinded, randomized and placebo controlled (3:1, drug:placebo). Phase 1 used a Single Ascending/Multiple Ascending (SAD/MAD) drug administration design. The SAD component was a 1X treatment (low, medium, or high dose) and the MAD component was a 1X/day treatment for five consecutive days (low and medium dose). Blood and urine samples were collected at multiple time points for safety pharmacokinetics. Standard safety monitoring was provided for each body system.

Forty human subjects (31 males, 9 females) were successfully enrolled in Phase 1. The Safety Review Board, made up of medical doctors, has reviewed the trial data and has determined the drug is safe and well tolerated at all dosing levels.

We anticipate preparing for Phase 2 clinical trials to further evaluate the ONP-002 drug's safety and efficacy. Based on the Phase 1 data, we plan to apply for an Investigational New Drug application with the FDA and conduct a Phase 2 trial in the United States.

We anticipate a Phase 2 clinical trial will be performed administering the ONP-002 drug intranasally in concussed patients 2x a day for up to fourteen days. The Phase 2a feasibility study is expected to be performed in Australia with a target initiation date in the third quarter of 2024 to be followed closely by a Phase 2b proof of concept study in the US.

We have entered an agreement with one of the leading Contract Research Organization (CRO) in Australia, to conduct a Phase 2 clinical trial in Australia. This trial aims to evaluate the ONP-002 drug for TBI. This Australian CRO, renowned for its clinical trial management capabilities and quality of service in Australia, New Zealand, and North America, brings over two decades of expertise in navigating the Therapeutic Goods Administration, Food and Drug Administration, and European Medicines Agency regulatory landscapes. Other key third party well-respected vendors also have been engaged to advance and monitor our progress.

On July 10, 2024, we announced that we had developed a new proprietary formulation for the novel ONP-002 neurosteroid. We believe the nasal cavity provides access for our novel neurosteroid formulation to enter the brain in minutes. Given the difficulty of getting neurosteroids into solution, unique formulations must be developed to achieve therapeutic levels. We believe that our recent work has increased the final dose levels significantly while also providing for improved intranasal drug delivery and adhesion and, thus, longer absorption times. We further believe we have successfully completed an improved proprietary formulation of the ONP-002 drug that should significantly increase the bioavailability of the intranasal drug formulation. The enhanced drug percentages in this novel proprietary formulation have been developed as part of our platform for acute-field delivery of the drug. Our newly developed proprietary intranasal drug formulation is intended to reduce the duration of initial concussion symptoms and prevent long-lasting symptoms that can be debilitating after a concussion.

On August 8, 2024, we announced our candidate for treating concussion successfully completed a study that indicates the ONP-002 drug does not cause cardiotoxicity. Prior to conducting a clinical trial, the U.S. Food and Drug Administration (FDA) requires pharmaceuticals to be tested on cardiac receptors to ensure that they do not show any causes of electrical malformations. Further, on August 30, 2024, we announced we successfully completed a study that indicates the ONP-002 drug does not cause DNA damage and genotoxicity in an animal model. Prior to conducting a clinical trial, the U.S. Food and Drug Administration (FDA) requires that pharmaceuticals be tested on cells and animals to ensure they do not cause damage affecting cell division.

Our Medical Advisors

Dr. James "Jim" Kelly, Neurologist, serves as our Chief Medical Officer, and oversees our upcoming Phase 2 clinical trial for treating concussion. In the recent past, Dr. Kelly served as the Executive Director of the Marcus Institute for Brain Health (MIBH) and Professor of Neurology at the University of Colorado Anschutz Medical Campus in Aurora, Colorado. The MIBH specialized treatment program is funded by the Marcus Foundation to care for US military veterans with persistent symptoms of TBI. Dr. Kelly was also National Director of the Avalon Action Alliance TBI Programs for which the MIBH serves as the clinical coordinating center. Prior to these recent positions, Dr. Kelly was the Director of the National Intrepid Center of Excellence (NICoE) at Walter Reed National Military Medical Center in Bethesda, MD. As its founding Director, he led the creation of an innovative interdisciplinary team of healthcare professionals who blended high-tech diagnosis and treatment with complementary and alternative medical interventions in a holistic, integrative approach to the care of US military personnel with the complex combination of TBI and psychological conditions, such as post-traumatic stress, depression, and anxiety. In this role, Dr. Kelly was frequently called upon by leaders of the Military Health System at the Pentagon, the US Congress, the Department of Veterans Affairs, and numerous military facilities in the continental US and abroad. Dr. Kelly has interacted with the FDA and clinical trials for brain injury throughout his esteemed career. He is a strong advocate for treatments in the acute phase of brain injury and understands the value of protecting the brain early on from inflammation, swelling and oxidative stress to gain better clinical outcomes.

Dr. William "Frank" Peacock serves as our Chief Clinical Officer, and will conduct our anticipated Phase 2 clinical trial for treating concussion in emergency departments. Dr. Peacock is currently the Vice Chair for Emergency Medicine Research at Baylor College of Medicine and a past Professor at the Cleveland Clinic Lerner College of Medicine. He is also the Principal Investigator of a trial for a company developing blood biomarkers for the identification of concussion in the emergency department, which is analyzing acute blood markers that are elevated after concussion to not only ensure concussion is identified but also as a predictor of potential severity and longer-term complications. Dr. Peacock is a world-renowned speaker and researcher. He has been instrumental in the approval and use of high sensitivity blood troponins for acute coronary syndrome failure in emergency settings, which can be seen in the *JAMA* Cardiology publication, *Efficacy of High-Sensitivity Troponin T in Identifying Very-Low-Risk Patients with Possible Acute Coronary Syndrome*, and he is the editor of the first book of "Biomarkers of Traumatic Brain Injury".

Our SARS-CoV-2 Vaccine Product Candidate – NT-CoV2-1

Prior to the purchase of the Neurology Assets, starting in May 2020 with the acquisition of one hundred percent (100%) of the total issued and outstanding common stock of Noachis Terra, Inc. ("Noachis Terra") and through December 31, 2023, we were focused on the development and commercialization of a vaccine produce candidate

to provide long-lasting immunity from SARS-CoV-2, which causes COVID-19. During that time, we conducted testing in animal models, including SARS-CoV-2 challenge studies in hamsters, using specific formulations for intramuscular administration and intranasal administration, both based on the NIAID pre-fusion stabilized spike protein antigens.

In June of 2021, we initiated an immunogenicity study in mice and on August 30, 2021, we announced the successful completion of the mouse studies that supported further development using either intramuscular or intranasal routes of administration. In September of 2021, we initiated a hamster challenge to assess inhibition of viral replication using adjuvants specific for intramuscular and intranasal administration. In December of 2021, we announced that both formulations generated robust immune responses and reduced the SARS-CoV-2 viral loads to undetectable levels in the nasal passages and lungs five days following a viral challenge. On June 14, 2022, we announced that the results of these studies were published in Nature Scientific Reports.

In March of 2022, following a positive assessment of a rabbit-based pilot study, we initiated a Good Laboratory Practice toxicology study to evaluate the safety profile and immunogenicity of NT-CoV2-1 in rabbits. This preclinical study was designed to provide data required to advance our intranasal vaccine candidate into human clinical studies.

Following the successful results of the animal studies previously referenced and a Type B Pre-IND Meeting with the FDA we determined to focus our development efforts and financial resources on the intranasal delivery vaccine produce candidate, NT-CoV2-1. As part of this intranasal development focus, during 2023 we entered into strategic license agreements and announced an award of a grant from CQDM.

However, due to lack of financial resources our research and development activities for our NT-CoV2-1 vaccine product were suspended as of December 31, 2023, and are not currently active. We will continue to evaluate opportunities and funding resources for our SARS-CoV-2 and NT-CoV2-1 candidate products in the future of which there can be no assurances. These opportunities and funding resources could include, without limitation, sublicensing agreements, joint ventures or partnerships, sales or licensing of technology, government grants and public or private financings, through the sale of debt or equity securities or by securing a line of credit or other loan. There can be no assurances that we will be able to secure any such opportunity or funding.

Our Lantibiotic Product Candidate

Members of our scientific team discovered that a certain bacterial strain of Streptococcus mutans, produces Mutacin 1140 (MU1140), a molecule belonging to the novel class of antibiotics known as lantibiotics. Lantibiotics, such as MU1140, are highly modified peptide antibiotics made by a small group of Gram-positive bacterial species. Over 60 lantibiotics have been discovered, to date. We believe lantibiotics are generally recognized by the scientific community to be potent antibiotic agents. In nonclinical testing, MU1140 has shown activity against all Gram-positive bacteria against which it has been tested, including those responsible for a number of healthcare associated infections, or HAIs. A high percentage of hospital-acquired infections are caused by highly antibiotic-resistant bacteria such as methicillin-resistant Staphylococcus aureus (MRSA) or multidrug-resistant Gram-negative bacteria. We believe the need for novel antibiotics is increasing because of the growing resistance of target pathogens to existing FDA approved antibiotics on the market.

While lantibiotics are promising, in 2023 we concluded we needed to make several changes to reduce the cash used in operations. In September of 2023, we terminated our lease for the building where some of the research and development activities for the lantibiotic program were undertaken. The closing of the laboratory was part of the continued focus on preserving cash resources while seeking additional funding through various mechanisms. As of December 31, 2023, research and development activities related to the lantibiotic program are inactive. We will evaluate opportunities for the lantibiotic program; however, moving forward our focus is to strengthen our focus and expertise on developing our intranasal drug delivery platform and drug candidates that treat brain related illnesses and diseases.

Our Business Development Strategy

Success in the biopharmaceutical and product development industry relies on the continuous development of novel product candidates. Most product candidates do not make it past the clinical development stage, which forces companies to look externally for innovation. Accordingly, we expect, from time to time, to seek strategic opportunities through various forms of business development, which can include strategic alliances, licensing deals, joint ventures, collaborations, equity or debt-based investments, dispositions, mergers, and acquisitions. We view these business development activities as a necessary component of our strategies, and we seek to enhance shareholder value by evaluating business development opportunities both within and complementary to our current business, as well as opportunities that may be new and separate from the development of our existing product candidates.

As discuss elsewhere, our current focus is on advancing our ONP-002 product candidate to treat concussion. Work on our other project candidates currently is not active. As part of the focus on ONP-002, and to conserve resources, we have made several changes to reduce cash used in operations until additional capital can be obtained. As previously announced, we exercised our option under our lease with Hawley-Wiggins, LLC (the "Landlord"), for the building located in Progress Park and known as 13700 Progress Boulevard, Alachua, Florida 32615 (the "Lease") to terminate the Lease by paying nine (9) months of advance rent, plus prorated rent for the month of September, 2023, plus applicable sales tax. In addition to the termination of the Lease, the Company eliminated two staff positions and Dr. Martin Handfield transitioned from an employee of the Company to a consultant. Dr. Handfield continues to be available to provide support services on an hourly basis through a consulting agreement. Dr. Handfield's employment agreement was terminated in accordance with its terms. The Alachua lease contained the laboratory where some of the research and development for the lantibiotic program was undertaken.

Corporate and Other Information

We were incorporated in November 1996 and commenced operations in 1999. We consummated our initial public offering in June 2003. Our executive office is located at, 1990 Main Street, Suite 750, Sarasota, Florida 34236. Our telephone number is (813) 286-7900 and our website is http://www.oragenics.com. We make available free of charge on our website our annual report on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K and amendments to those reports as soon as reasonably practicable after we electronically file or furnish such materials to the Securities and Exchange Commission (the "SEC"). The reports are also available at www.sec.gov.

Implications of Being a Smaller Reporting Company

We are a "smaller reporting company" as defined in Rule 10(f)(1) of Regulation S-K. We will remain a smaller reporting company until the last day of the fiscal year in which (1) the market value of our shares of Common Stock held by non-affiliates exceeds $250 million or (2) our annual revenues exceeded $100 million during such completed fiscal year and the market value of our shares of Common Stock held by non-affiliates exceeds $700 million, each as determined on an annual basis. A smaller reporting company may take advantage of relief from some of the reporting requirements and other burdens that are otherwise applicable generally to public companies. These provisions include:

- being permitted to provide only two years of audited financial statements, in addition to any required unaudited interim financial statements, with correspondingly reduced "Management's Discussion and Analysis of Financial Condition and Results of Operations" disclosure;
- not being required to comply with the auditor attestation requirements in the assessment of our internal control over financial reporting; and
- reduced disclosure obligations regarding executive compensation in our periodic reports, proxy statements and registration statements.

SUMMARY OF RISK FACTORS

Our business is subject to a number of risks of which you should be aware of before making an investment decision. These risks are discussed more fully in the "*Risk Factors*" section of this prospectus immediately following this prospectus summary. Some of these risks include the following:

- We have incurred significant losses since our inception, have limited financial resources, do not generate any revenues and will need to raise additional capital in the future.
- We may not be able to secure additional funding.
- Our auditor has expressed substantial doubt about our ability to continue as a going concern.
- We may not be able to satisfy the continued listing standards of the NYSE American and may be delisted from the NYSE American.
- We have limited neurology-specific research, development, manufacturing, testing, regulatory, commercialization, sales, distribution, and marketing experience, and we may need to invest significant financial and management resources to establish these capabilities.
- None of our product candidates have been approved for sale and if we are unable to successfully develop our product candidates, we may not be able to continue as a going concern.
- Our product candidates, if approved, will face significant competition; many of our competitors have significantly greater resources and experience.
- Our ONP-002 concussion candidate may face competition from biosimilars approved through an abbreviated regulatory pathway.
- The market opportunities for our neurology product candidates may be smaller than we believe them to be and we cannot assure you that the market and consumers will accept our products or product candidates.
- If our manufacturers and suppliers fail to meet our requirements and the requirements of regulatory authorities, our research and development may be materially adversely affected.
- We rely on the significant experience and specialized expertise of our senior management and scientific team and the loss of any of our key personnel or our inability to successfully hire their successors could harm our business.
- If any of our product candidates are shown to be ineffective or harmful in humans, we will be unable to generate revenues from these product candidates.
- We might not be successful at acquiring, investing in or integrating businesses, entering into joint ventures or divesting businesses.
- Our concussion and neurology related research and development efforts are to a large extent dependent upon our intellectual property and biologicals materials licenses.
- We may not be able to protect our intellectual property and if we are unable to protect our trademarks or other intellectual property from infringement, our business prospects may be harmed.
- We may be subject to claims challenging the inventorship of our patents and other intellectual property rights.
- If we are sued for infringing intellectual property rights of third parties, it will be costly and time-consuming and an unfavorable outcome in that litigation could have a material adverse effect on our business.
- Our success will depend on our ability to partner or sub-license our product candidates.

- Security breaches and other disruptions to our information technology systems or those of the vendors on whom we rely on could compromise our information and expose us to liability, reputational damage, or other costs.
- Our product candidates are subject to substantial government regulation and will be subject to ongoing and continued regulatory review and we may also be subject to healthcare laws, regulation and enforcement.
- We may be unable to obtain regulatory approval for our product candidates under applicable regulatory requirements.
- Delays or difficulties in the enrollment of patients in clinical trials may result in additional costs and delays.
- Our product candidates may cause serious or undesirable side effects.
- Our employees, independent contractors, principal investigators, consultants, vendors and CROs may engage in misconduct or other improper activities, including noncompliance with regulatory standards and requirements.

- Even if our current product candidates or any future product candidates obtain regulatory approval, they may fail to achieve the broad degree of health care payers, physician and patient adoption and use necessary for commercial success.
- The issuance of additional equity securities by us in the future will result in dilution and the conversion of our outstanding preferred stock will result in significant dilution.
- Our Series A and Series B preferred stock, if not converted into common stock, has a distribution and liquidation preference senior to our common stock in liquidation which could negatively affect the value of our common stock and impair our ability to raise additional capital.
- Certain provisions of our articles of incorporation, bylaws, executive employment agreements and stock option plan may prevent a change of control of our company that a shareholder may consider favorable.
- The price and volume of our common stock has been volatile and fluctuates substantially.
- The requirements of being a public company may strain our resources, divert management's attention and affect our ability to attract and retain qualified members for our Board of Directors.
- If we fail to maintain an effective system of internal controls, we may not be able to accurately report our financial results or prevent fraud.

THE OFFERING

Common Stock we are offering	Shares of common stock having an aggregate price of up to $10,000,000.
Common stock outstanding prior to this offering	10,535,873 shares of common stock.
Common stock to be outstanding immediately after this offering	Up to 35,535,873 shares, assuming sales of 25,000,000 shares of our common stock in this offering at an offering price of $0.40 per share, which was the last reported sale price of our common stock on the NYSE American on October 7, 2024. The actual number of shares issued will vary depending on the sales price under this offering.
Plan of Distribution	"At-The-Market offering" that may be made from time to time through or to Dawson James Securities, Inc., as our sales agent or principal. See "Plan of Distribution" in this prospectus supplement.
Use of Proceeds	We intend to use the net proceeds from this offering to fund the continued development of ONP-002, which is a unique neurosteroid drug compound intended to treat mild traumatic brain injuries also known as concussions, and for general corporate purposes and working capital. See "Use of Proceeds".
Risk Factors	Investing in our securities involves significant risks. Please read the information contained in or incorporated by reference under the heading "Risk Factors" of this prospectus supplement, and under similar headings in other documents filed after the date hereof and incorporated by reference into this prospectus supplement and the accompanying prospectus.
NYSE American Symbol and Listing	Our common stock is listed on the NYSE American under the symbol "OGEN".

The number of shares of common stock shown above to be outstanding after this offering is based on 10,535,873 shares outstanding as of October 9, 2024 and excludes:

- 1,022,53 shares of our common stock issuable upon the exercise of outstanding options under our equity incentive plans as of October 7, 2024 at a weighted average exercise price of $4.67 per share;
- 747,462 shares of common stock reserved for issuance under outstanding warrants as of October 7, 2024 with a weighted average exercise price of $22.98 per share;
- 2,901,404 shares of common stock reserved for issuance under outstanding pre-funded warrants as of October 7, 2024 with a weighted average exercise price of $0.001 per share;
- 143,664 additional shares of common stock reserved for future issuance under our 2021 equity incentive plan as of October 7, 2024;
- approximately 9,028 shares of common stock reserved for issuance under conversion of our outstanding shares of Series A Non-Voting, Convertible Preferred Stock;
- approximately 13,500 shares of common stock reserved for issuance under conversion of our outstanding shares of Series B Non-Voting, Convertible Preferred Stock; and
- approximately 7,488,692 shares of common stock reserved for issuance under conversion of 7,488,692 outstanding shares of Series F Non-Voting, Convertible Preferred Stock.

RISK FACTORS

Before purchasing our securities you should carefully consider the risk factors set forth below and under the heading "Risk Factors" included in our most recent Annual Report on Form 10-K as revised or supplemented by our subsequent Quarterly Reports on Form 10-Q, each of which are on file with the SEC and are incorporated herein by reference, as well as all other information contained in this prospectus supplement and the accompanying prospectus and incorporated by reference and any free writing prospectus that we have authorized for use in connection with this offering. The risks and uncertainties described below and in our most recent Annual Report on Form 10-K, as revised or supplemented by our subsequent Quarterly Reports on Form 10-Q, are not the only risks and uncertainties we face. Additional risks and uncertainties not presently known to us or that we currently deem immaterial may also impair our business operations. Our business, financial condition and results of operations could suffer as a result of these risks. As a result, the trading price of our stock could decline, and you could lose all or part of your investment. The risks discussed below and in most recent Annual Report on Form 10-K, as revised or supplemented by our subsequent Quarterly Reports on Form 10-Q, also include forward-looking statements and our actual results may differ substantially from those discussed in these forward-looking statements. See the section entitled "Forward-Looking Information".

Risks Relating to this Offering

The market price of our common stock has been, and may continue to be volatile and fluctuate significantly, which could result in substantial losses for investors.

The trading price for our common stock has been, and we expect it to continue to be, volatile. The price at which our common stock trades depends upon a number of factors, including our historical and anticipated operating results, our financial situation, announcements by us or our competitors, our ability or inability to raise the additional capital we may need and the terms on which we raise it, and general market and economic conditions. Some of these factors are beyond our control. Broad market fluctuations may lower the market price of our common stock and affect the volume of trading in our stock, regardless of our financial condition, results of operations, business or prospects. The closing price of our common stock as reported on the NYSE American had a high price of $9.00 and a low price of $2.62 in the 52-week period ended December 31, 2023, and a high price of $6.84 and a low price of $0.38 from January 1, 2024, through September 30, 2024. Among the factors that may cause the market price of our common stock to fluctuate are the risks described in this "Risk Factors" section and other factors, including:

- results of preclinical and clinical studies of our product candidates or those of our competitors;
- regulatory or legal developments in the U.S. and other countries, especially changes in laws and regulations applicable to our product candidates;
- actions taken by regulatory agencies with respect to our product candidates, clinical studies, manufacturing process or sales and marketing terms;
- introductions and announcements of new products by us or our competitors, and the timing of these introductions or announcements;
- announcements by us or our competitors of significant acquisitions or other strategic transactions or capital commitments;
- fluctuations in our quarterly operating results or the operating results of our competitors;
- variance in our financial performance from the expectations of investors;
- changes in the estimation of the future size and growth rate of our markets;

- changes in accounting principles or changes in interpretations of existing principles, which could affect our financial results;
- failure of our products to achieve or maintain market acceptance or commercial success;
- conditions and trends in the markets we serve;
- changes in general economic, industry and market conditions;
- changes in legislation or regulatory policies, practices or actions;
- the commencement or outcome of litigation involving our company, our general industry or both;
- recruitment or departure of key personnel;
- changes in our capital structure, such as future issuances of securities, redemption or conversion of preferred stock or the incurrence of additional debt;
- actual or expected sales of our common stock by our stockholders;
- acquisitions and financings; and
- the trading volume of our common stock.

In addition, the stock markets, in general, NYSE American and the market for biotech companies in particular, may experience a loss of investor confidence. Such loss of investor confidence may result in extreme price and volume fluctuations in our common stock that are unrelated or disproportionate to the operating performance of our business, financial condition or results of operations. These broad market and industry factors may materially harm the market price of our common stock and expose us to securities class action litigation. Such litigation, even if unsuccessful, could be costly to defend and divert management's attention and resources, which could further materially harm our financial condition and results of operations.

You will experience immediate and substantial dilution as a result of this offering and may experience additional dilution in the future.

Since the price per share of our common stock being offered may be higher than the net tangible book value per share of our common stock prior to this offering, you will suffer immediate dilution in the net tangible book value of the shares of common stock you purchase in this offering. As of September 30, 2024, our historical net tangible book value was approximately $1,326,396 million, or $0.24 per share. Assuming that an aggregate of 25,000,000 shares are sold at a price of $0.40 per share, the last reported sale price of our common stock on the NYSE American Exchange on October 7, 2024, for aggregate gross proceeds of approximately $10,000,000 in this offering, and after deducting commissions and estimated aggregate offering expenses payable by us, you will suffer immediate dilution of $0.18 per share, representing the difference between our pro forma as adjusted net tangible book value per share as of September 30, 2024 and the assumed offering price. The exercise of outstanding stock options and warrants and the conversion of our outstanding preferred stock may result in further dilution of your investment and, with regard to our Series F Convertible Preferred Stock, will result in a material further dilution of your investment. See "Dilution" below for a more detailed discussion of the dilution you will incur if you purchase our securities in the offering.

Our management team may invest or spend the proceeds of this offering in ways with which you may not agree or in ways which may not yield a significant return.

Our management will have broad discretion over the use of proceeds from this offering. We intend to use the net proceeds from this offering to fund a portion of our ONP-002 research and clinical trials, and for working capital and general corporate purposes. Our management will have considerable discretion in the application of the net proceeds, and you will not have the opportunity, as part of your investment decision, to assess whether the proceeds are being used appropriately. The net proceeds may be used for corporate purposes that do not increase our operating results or enhance the value of our common stock. The precise amount and timing of the application of these proceeds will depend upon a number of factors, such as the timing and progress of our research and development efforts, our funding requirements and the availability and costs of other funds. As of the date of this prospectus supplement, we cannot specify with certainty all of the particular uses for the net proceeds to us from this offering. Depending on the outcome of our efforts and other unforeseen events, our plans and priorities may change and we may apply the net proceeds of this offering in different manners than we currently anticipated. The failure by our management to apply these funds effectively could harm our business, financial condition and results of operations. Pending their use, we may invest the net proceeds from this offering in short-term, interest-bearing instruments. These investments may not yield a favorable return to our stockholders.

Future sales of our common stock in the public market could cause our stock price to fall.

Sales of a substantial number of shares of our common stock, or the perception by the market that those sales could occur, could cause the market price of our common stock to decline or could make it more difficult for us to raise funds through the sale of equity in the future.

Future issuances of common stock could further depress the market for our common stock. We expect to continue to incur drug development and selling, general and administrative costs, and to satisfy our funding requirements, we will need to sell additional equity securities, which may include sales of significant amounts of common stock to strategic investors, and which common stock may be subject to registration rights and warrants with anti-dilutive protective provisions. The sale or the proposed sale of substantial amounts of our common stock or other equity securities in the public markets or in private transactions may adversely affect the market price of our common stock and our stock price may decline substantially. Our stockholders may experience substantial dilution and a reduction in the price that they are able to obtain upon sale of their shares. Also, new equity securities issued may have greater rights, preferences or privileges than our existing common stock. In addition, we have a significant number of shares of restricted stock, stock options and warrants outstanding. To the extent that outstanding stock options or warrants have been or may be exercised or other shares issued, investors purchasing our common stock in this offering may experience further dilution.

If we make one or more significant acquisitions in which the consideration includes stock or other securities, our stockholders' holdings may be significantly diluted. In addition, stockholders' holdings may also be diluted if we enter into arrangements with third parties permitting us to issue shares of common stock in lieu of certain cash payments upon the achievement of milestones.

The issuance of shares of our common stock under our 2021 Equity Incentive Plan is covered by Form S-8 registration statements we filed with the Securities and Exchange Commission, or SEC, and upon exercise of the options, such shares may be resold into the market. We have also issued shares of common stock and warrants in connection with previous private placements. Such shares are available for resale as well as certain of the shares of common stock issuable upon exercise of the warrants. We have also issued shares of our common stock in the private placement and financing transaction, which are deemed to be "restricted securities," as that term is defined in Rule 144 promulgated under the Securities Act of 1933, as amended, or Securities Act, and such shares may be resold pursuant to the provisions of Rule 144. The resale of shares acquired from us in private transactions could cause our stock price to decline significantly. In addition, the conversion of outstanding shares preferred stock into common stock and the subsequent sale of shares of common stock could also cause our stock price to decline significantly.

In addition, from time to time, certain of our shareholders may be eligible to sell all or some of their restricted shares of common stock by means of ordinary brokerage transactions in the open market pursuant to Rule 144, subject to certain limitations. In general, pursuant to Rule 144, after satisfying a six-month holding period: (i) affiliated shareholders, or shareholders whose shares are aggregated, may, under certain circumstances, sell within any three-month period a number of securities which does not exceed the greater of 1% of the then-outstanding shares of common stock or the average weekly trading volume of the class during the four calendar weeks prior to such sale and (ii) non-affiliated shareholders may sell without such limitations, in each case provided we are current in our public reporting obligations. Rule 144 also permits the sale of securities by non-affiliates that have satisfied a one-year holding period without any limitation or restriction.

We are unable to estimate the number of shares that may be sold because this will depend on the market price for our common stock, the personal or business circumstances of sellers and other factors.

We do not intend to pay cash dividends.

We have not declared or paid any cash dividends on our common stock, and we do not anticipate declaring or paying cash dividends for the foreseeable future. Any future determination as to the payment of cash dividends on our common stock will be at our Board of Directors' discretion and will depend on our financial condition, operating results, capital requirements and other factors that our Board of Directors considers to be relevant.

You may experience future dilution as a result of future equity offerings.

To raise additional capital, we may in the future offer additional shares of our common stock or other securities convertible into or exchangeable for our common stock at prices that may not be the same as the prices per share in this offering. We may sell shares or other securities in any other offering at a price per share that is less than the prices per share paid by investors in this offering, and investors purchasing shares of our common stock or other securities in the future could have rights superior to existing stockholders. The price per share at which we sell additional shares of our common stock, or securities convertible or exchangeable into common stock, in future transactions may be higher or lower than the prices per share paid by investors in this offering.

We cannot assure you that we will continue to be listed on the NYSE American.

Our common stock commenced trading on the NYSE American (formerly the NYSE MKT) on April 10, 2013, and we are subject to certain NYSE American continued listing requirements and standards. On April 18, 2024, we received notification (the "Notice") from the NYSE American that we were no longer in compliance with NYSE American's continued listing standards. Specifically, the letter stated that the Company was not in compliance with the continued listing standards set forth in Sections 1003(a)(ii) and 1003(a)(iii) of the NYSE American Company Guide (the "Company Guide"). Section 1003(a)(ii) requires a listed company to have stockholders' equity of $4 million or more if the listed company has reported losses from continuing operations and/or net losses in three of its four most recent fiscal years. Section 1003(a)(iii) requires a listed company to have stockholders' equity of $6 million or more if the listed company has reported losses from continuing operations and/or net losses in its five most recent fiscal years. On August 13, 2024, we received a second notice from the NYSE American LLC informing us that us that we also are not in compliance with subsection (i) of Section 1003(a), which requires stockholders' equity of no less than $2,000,000 if the Company has sustained losses from continuing operations and/or net losses in two of its three most recent fiscal years. We reported shareholders' equity of $3.2 million as of December 31, 2023, and losses from continuing operations and/or net losses in its five most recent fiscal years ended December 31, 2023, and we reported shareholders' equity of $1.6 million as of June 30, 2024. On May 17, 2024, we submitted a plan of compliance (the "Plan") to the NYSE American. On June 18, 2024, the NYSE American accepted our Plan; the Company will be able to continue its listing during the Plan period and will be subject to continued periodic review by the NYSE American staff. If we are not in compliance with the continued listing standards by October 18, 2025, or if the Company does not make progress consistent with the Plan during the Plan period, the Company will be subject to delisting procedures as set forth in the NYSE American Company Guide. The Company is committed to undertaking a transaction or transactions in the future to achieve compliance with the NYSE American's requirements. However, there can be no assurance that the Company will be able to achieve compliance with the NYSE American's continued listing standards within the required timeframe. Further, the Company may fall out of compliance with other provision of the NYSE American continued listing requirements and standards, including with regard to the Company's stock price. If the Common Stock ultimately were to be delisted for any reason, it could negatively impact the Company by (i) reducing the liquidity and market price of the Company's Common Stock; (ii) reducing the number of investors willing to hold or acquire the Common Stock, which could negatively impact the Company's ability to raise equity financing; (iii) limiting the Company's ability to use a registration statement to offer and sell freely tradable securities, thereby preventing the Company from accessing the public capital markets; and (iv) impairing the Company's ability to provide equity incentives to its employees.

An active trading market for our common stock may not be sustained following this offering.

Although our common stock is listed on the NYSE American, an active trading market for our shares may not be sustained. If an active market for our common stock does not continue, it may be difficult for you to sell your shares, including shares you may purchase in this offering, without depressing the market price for the shares or sell your shares at all. Any inactive trading market for our common stock may also impair our ability to raise capital to continue to fund our operations by selling shares and may impair our ability to acquire other companies or technologies by using our shares as consideration.

The common stock offered hereby will be sold in "at the market offerings," and investors who buy shares at different times will likely pay different prices.

Investors who purchase shares in this offering at different times will likely pay different prices, and so may experience different outcomes in their investment results. We will have discretion, subject to market demand, to vary the timing, prices, and numbers of shares sold, and there is no minimum or maximum sales price. Investors may experience a decline in the value of their shares as a result of share sales made at prices lower than the prices they paid.

The issuance of additional equity securities by us in the future would result in dilution to our existing common shareholders.

Our Board of Directors has authority, without action or vote of our shareholders, to issue all or a part of our authorized but unissued shares, except where shareholder approval is required by law or the rules of any exchange on which our shares are listed. Any issuance of additional equity securities by us in the future could result in dilution to our existing common shareholders. Such issuances could be made at a price that reflects a discount or a premium to the then-current trading price of our common stock. In addition, our business strategy may include expansion through internal growth by acquiring complementary businesses, acquiring or licensing additional products or brands, or establishing strategic relationships with targeted customers and suppliers. In order to do so, or to finance the cost of our other activities, we may issue additional equity securities that could result in further dilution to our existing common shareholders. These issuances would dilute the percentage ownership interest of our existing common shareholders, which would have the effect of reducing their influence on matters on which our shareholders vote and might dilute the book value of our common stock. For example, our outstanding shares of common stock at December 31, 2023 was 3,080,693, due to additional common stock issuances related to capital raises, at October 9, 2024 our outstanding shares of common stock was 10,535,873. Furthermore, if Odyssey or the holders of Preferred Shares Series A and B convert their preferred shares into common stock an additional 7,511,220 shares of common stock could be issued resulting in dilution to our existing common shareholders.

The actual number of shares we will issue under the Sales Agreement, at any one time or in total, is uncertain.

Subject to certain limitations in the Sales Agreement and compliance with applicable law, we have the discretion to deliver instructions to Dawson James Securities, Inc. to sell shares of our common stock at any time throughout the term of the Sales Agreement. The number of shares that are sold through Dawson James Securities, Inc. after our instruction will fluctuate based on a number of factors, including the market price of our common stock during the sales period, the limits we set with Dawson James Securities, Inc. in any instruction to sell shares, and the demand for our common stock during the sales period. Because the price per share of each share sold will fluctuate during this offering, it is not currently possible to predict the number of shares that will be sold or the gross proceeds to be raised in connection with those sales.

The common stock offered hereby will be sold in "at the market offerings," and investors who buy shares at different times will likely pay different prices.

Investors who purchase shares in this offering at different times will likely pay different prices, and so may experience different levels of dilution and different outcomes in their investment results. We will have discretion, subject to market demand, to vary the timing, prices, and numbers of shares sold in this offering. Investors may experience a decline in the value of the shares they purchase in this offering as a result of sales made at prices lower than the prices they paid.

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

Sales of a substantial number of shares of our common stock in the public market following this offering could cause the market price of our common stock to decline. A substantial majority of the outstanding shares of our common stock are, and all of the shares sold in this offering upon issuance will be, freely tradable without restriction or further registration under the Securities Act, unless these shares are owned or purchased by "affiliates" as that term is defined in Rule 144 under the Securities Act. In addition, we have also registered the shares of common stock that we may issue under our equity incentive plans. As a result, these shares can be freely sold in the public market upon issuance, subject to restrictions under securities laws.

This offering may cause the trading price of our Common Stock to decrease.

The shares of Common Stock we propose to issue and ultimately will issue if this offering is completed may result in an immediate decrease in the market price of our Common Stock. This decrease may continue after the completion of this offering.

Certain provisions in our existing warrants could discourage an acquisition of us by a third party.

Certain provisions of our existing warrants could make it more difficult or expensive for a third party to acquire us. Our warrants prohibit us from engaging in certain transactions constituting "fundamental transactions" unless, among other things, the surviving entity assumes our obligations under the warrants and pre-funded warrants. Further, the warrants provide that, in the event of certain transactions constituting "fundamental transactions," with some exception, holders of such warrants will have the right, at their option, to require us to repurchase such warrants at a price described in such warrants. These and other provisions of the warrants offered by this prospectus could prevent or deter a third party from acquiring us even where the acquisition could be beneficial to you.

USE OF PROCEEDS

We may issue and sell shares of our common stock having aggregate sales proceeds of up to $10,000,000 million from time to time. Because there is no minimum offering amount required as a condition to close this offering, the actual total public offering amount, commissions and proceeds to us, if any, are not determinable at this time. There can be no assurance that we will sell any shares under or fully utilize the Sales Agreement as a source of financing.

We intend to use the net proceeds from this offering to fund the continued development ofONP-002, which is a unique neurosteroid drug compound intended to treat mild traumatic brain injuries also known as concussions, and for general corporate purposes and working capital.

The net proceeds from this offering, together with our cash, will not be sufficient for us to fund our ONP-002 product candidate through regulatory approval, and we will need to raise additional capital to complete the development and commercialization of our ONP-002 product candidate. We may satisfy our future cash needs through the sale of equity securities, debt financings, working capital lines of credit, corporate collaborations or license agreements, grant funding, interest income earned on invested cash balances or a combination of one or more of these sources, but there can be no assurances that such future sources will be available to us. This expected use of the net proceeds from this offering represents our intentions based upon our current plans and business conditions. As of the date of this prospectus, we cannot predict with certainty all of the particular uses for the net proceeds to be received upon the closing of this offering or the amounts that we will actually spend. The amounts and timing of our actual expenditures and the extent of clinical development may vary significantly depending on numerous factors, including the progress of our development efforts, the clinical trials we may commence in the future, as well as any collaborations that we may enter with third parties for our product candidates and any unforeseen cash needs. As a result, our management will have significant discretion in the use of any net proceeds and Investors will be relying on the judgment of our management regarding the application of the proceeds. See, "Risk Factors."

DIVIDEND POLICY

To date, we have neither declared nor paid any dividends on our common stock nor do we anticipate that such dividends will be paid in the foreseeable future. Rather, we intend to retain any earnings to finance the growth and development of our business. Any payment of cash dividends on our common stock in the future will be dependent, among other things, upon our earnings, financial condition, capital requirements and other factors which the board of directors deems relevant. In addition, restrictive covenants

contained in any financing agreements entered into in the future may preclude us from paying any dividends.

DESCRIPTION OF CAPITAL STOCK

The following descriptions are summaries of the material terms that are included in our amended and restated articles of incorporation (as amended) and our bylaws (as amended) as well as the specific agreements such descriptions relate to. This summary is qualified in its entirety by the specific terms and provisions contained in our restated articles of incorporation, bylaws and the specific agreements described herein, copies of which we have filed as exhibits to the registration statement of which this prospectus is a part, and by the provisions of applicable law.

Overview

Authorized Capital Stock

Our authorized capital stock consists of 350,000,000 shares of common stock, par value $0.001, and 50,000,000 shares of preferred stock, without par value.

Common Stock

Voting

Holders of our common stock are entitled to one vote for each share on all matters submitted to a stockholder vote. Holders of our common stock do not have cumulative voting rights. Therefore, holders of a majority of the shares of our common stock voting for the election of directors collectively hold the voting power to elect all of our directors. Holders of our common stock representing one third of the voting power of our capital stock issued, outstanding and entitled to vote, represented in person or by proxy, are necessary to constitute a quorum at any meeting of stockholders.

Dividends

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

Rights upon Liquidation

Upon our liquidation, dissolution or winding-up, after payment in full of our liabilities and the amounts required to be paid to holders of any outstanding shares of preferred stock, if any, all holders of our common stock, along with the holders of our Series A Convertible Preferred Stock and Series B Convertible Preferred Stock on an “as if” converted basis, will be entitled to receive a pro rata distribution of all of our assets and funds legally available for distribution.

Redemption and Pre-Emptive Rights

No shares of our common stock are subject to redemption or have preemptive rights to purchase additional shares of our common stock or any of our other securities.

Fully Paid and Nonassessable

All of our outstanding shares of common stock are, and the shares of common stock to be issued in this offering will be fully paid and nonassessable.

Listing of Common Stock

Our common stock is currently listed on the NYSE American under the trading symbol “OGEN”.

Preferred Stock

Our Board of Directors has the authority, without action by our shareholders, to designate and issue up to 50,000,000 shares of preferred stock in one or more series or classes and to designate the rights, preferences and privileges of each series or class, which may be greater than the rights of our common stock. These rights, preferences and privileges could include dividend rights, conversion rights, voting rights, redemption rights, liquidation preferences, the number of shares constituting any class or series and the designation of the class or series. Terms selected by our Board of Directors in the future could decrease the amount of earnings and assets available for distribution to holders of shares of common stock or adversely affect the rights and powers, including voting rights, of the holders of shares of common stock without any further vote or action by the stockholders. As a result, the rights of holders of our common stock will be subject to, and may be adversely affected by, the rights of the holders of the Series A Convertible Preferred Stock, Series B Convertible Preferred Stock and Series F Convertible Preferred Stock or any other preferred stock that may be issued by us in the future, which could have the effect of decreasing the market price of our common stock. The Company’s previously issued shares of Series C, D and E Preferred Stock have all either been cancelled or converted and are no longer outstanding.

Series A Convertible Preferred Stock

On May 10, 2017 and on July 25, 2017, we issued an aggregate of 12,000,000 shares of convertible preferred stock, designated as the Series A Convertible Preferred Stock pursuant to the certificate of designation and rights filed by us with the Secretary of State of the State of Florida, with an aggregate original purchase price and initial liquidation preference of $3.0 million. Each share of Series A Convertible Preferred Stock was issued for an amount equal to $0.25 per share, which we refer to as the original purchase price. On March 9, 2018 and August 26, 2022, certain holders of Series A Convertible Preferred Stock elected to convert to common stock and, as a result of such conversions, 5,417,000 shares of Series A Preferred remain outstanding.

The following description is a summary of the material provisions of the Series A Convertible Preferred Stock and the certificate of designation and rights and does not purport to be complete. This summary is subject to and is qualified by reference to all the provisions of the Series A Convertible Preferred Stock and certificate of designation and rights of Series A Convertible Preferred Stock, including the definitions of certain terms used in the certificate of designation and rights. We urge you to read this document because it, and not this description, defines the rights of a holder of the Series A Convertible Preferred Stock. A copy of the form of certificate of designation and rights that we filed with the Secretary of State of the State of Florida effective May 10, 2017 as amended and restated effective November 8, 2017 has been incorporated by reference as part of our Articles of Incorporation included as an exhibit to our Form 10-K.

No Mandatory Redemption Date or Sinking Fund

The shares of Series A Convertible Preferred Stock do not have a mandatory redemption date and are not subject to any sinking fund. The shares of Series A

Convertible Preferred Stock will remain outstanding indefinitely unless we elect to redeem them under the circumstances described below in "Redemption" or we otherwise repurchase them or they are converted into shares of our common stock as described below under "Conversion Rights."

Dividends

The shares of Series A Convertible Preferred Stock are entitled to participate in all dividends declared and paid on shares of company common stock on an "as if" converted basis.

Liquidation Preference

Upon any liquidation, dissolution or winding-up of the Company, whether voluntary or involuntary that is not a Fundamental Transaction (as defined in the certificate of designation), the holders of Series A Convertible Preferred Stock shall be entitled to receive out of the assets, the greater of (i) the product of the number of shares of Series A Preferred Stock then held by such holder, multiplied by the original issue price of $0.25 per share; and (ii) the amount that would be payable to such holder in the liquidation in respect of Common Stock issuable upon conversion of such shares of Series A Preferred Stock if all outstanding shares of Series A Preferred Stock were converted into Common Stock immediately prior to the Liquidation.

Ranking

The Series A Convertible Preferred Stock ranks (i) on par with the Common Stock and Series B Convertible Preferred Stock as to dividend rights and (ii) on par with Series B Convertible Preferred Stock and senior to Common Stock as to rights upon liquidation, dissolution or winding up of the Company, whether voluntarily or involuntarily.

See "Voting Rights—Matters Requiring Approval of Holders of Series A Convertible Preferred Stock" for a description of the types of issuances of equity securities and other securities of our company requiring approval of holders of a majority of shares of Series A Convertible Preferred Stock then outstanding, voting together as a class.

Redemption

To the extent we have funds legally available therefor, at any time after the fifth anniversary of the original issue date of the Series A Convertible Preferred Stock, we have the right to redeem all or any portion of the outstanding shares of Series A Convertible Preferred Stock at the original issue price of $0.25 by providing at least seventy five (75) days written notice of such redemption to all holders of the then outstanding shares of Series A Convertible Preferred Stock. The initial conversion price was $0.25 but was adjusted to $2.50 as a result of the Company's reverse split of 1 for 10 on January 19, 2018, and further adjusted to $150.00 following our 1 for 60 reverse stock split effective on January 20, 2023.

Conversion Rights

The holders of shares of Series A Convertible Preferred Stock will, at any time, be entitled to convert some or all of their Series A Convertible Preferred Stock into the number of shares of our common stock obtained by dividing the original purchase price of the shares to be converted by the aggregate Series A conversion price (which originally equaled the original purchase price, but is subject to adjustment), which amount we refer to as the conversion price.

The conversion price will be adjustable upon the occurrence of certain events and transactions as described under "Adjustments to Conversion Price" below. Any shares of our common stock issued upon conversion of the shares of Series A Convertible Preferred Stock shall be validly issued, fully paid and non-assessable. The Company shall in lieu of fractional shares rounded up to the next whole share. The initial conversion price was $0.25 but was adjusted to $2.50 as a result of the Company's reverse split of 1 for 10 on January 19, 2018 and further adjusted to $150.00 following our 1 for 60 reverse stock split effective on January 20, 2023.

Adjustments to Conversion Price

The Series A Convertible Preferred Stock is subject to provisions that provide for the adjustment of the conversion price and/or number of shares of common stock issuable upon conversion in certain events such as a subdivision, combination or reclassification of our outstanding common stock.

Voting Rights—Matters Requiring Approval of Holders of Series A Convertible Preferred Stock

Except as otherwise required by law, the Series A Convertible Preferred Stock shall have no voting rights. However, as long as any shares of Series A Convertible Preferred Stock are outstanding, we shall not, without the affirmative vote of the holders of a majority of the then outstanding shares of the Series A Convertible Preferred Stock, (a) alter or change adversely the powers, preferences or rights given to the Series A Convertible Preferred Stock or alter or amend the certificate of designation, (b) amend its articles of incorporation or other charter documents in any manner that adversely affects any rights of the holders of Series A Convertible Preferred Stock, (c) increase the number of authorized shares of Series A Convertible Preferred Stock, or (d) enter into any agreement with respect to any of the foregoing.

Registration Rights

The holders of the Series A Convertible Preferred Stock were granted certain demand registration rights and piggyback registration rights with respect to the shares of our Common Stock issuable upon conversion of the Series A Preferred Stock and exercise of their associated warrants, subject to customary cutbacks, blackout periods and other exceptions.

Series B Convertible Preferred Stock

On November 8, 2017, we issued 6,600,000 shares of convertible preferred stock, designated as the Series B Convertible Preferred Stock pursuant to the certificate of designation and rights filed by us with the Secretary of State of the State of Florida, with an aggregate original purchase price and initial liquidation preference of $3.3 million. Each share of Series B Convertible Preferred Stock was issued for an amount equal to $0.50 per share, which we refer to as the original purchase price. On August 26, 2022 a certain holder of Series B Convertible Preferred Stock elected to convert to common stock and, as a result of such conversion, 4,050,000 shares of Series B Convertible Preferred Stock remain outstanding.

The following description is a summary of the material provisions of the Series B Convertible Preferred Stock and the certificate of designation and rights and does not purport to be complete. This summary is subject to and is qualified by reference to all the provisions of the Series B Convertible Preferred Stock and certificate of designation and rights of Series B Convertible Preferred Stock, including the definitions of certain terms used in the certificate of designation and rights. We urge you to read this document because it, and not this description, defines the rights of a holder of the Series B Convertible Preferred Stock. A copy of the form of certificate of designation and rights that we filed with the Secretary of State of the State of Florida effective November 8, 2017 has been incorporated by reference as part of our Articles of Incorporation included as an exhibit to our Form 10-K.

No Mandatory Redemption Date or Sinking Fund

The shares of Series B Convertible Preferred Stock do not have a mandatory redemption date and are not subject to any sinking fund. The shares of Series B Convertible Preferred Stock will remain outstanding indefinitely unless we elect to redeem them under the circumstances described below in "Redemption" or we otherwise repurchase them or they are converted into shares of our common stock as described below under "Conversion Rights."

Dividends

The shares of Series B Convertible Preferred Stock are entitled to participate in all dividends declared and paid on shares of company common stock on an "as if" converted basis.

Liquidation Preference

Upon any liquidation, dissolution or winding-up of the Company (any such event, a "Liquidation"), whether voluntary or involuntary, each holder of shares of Series B Convertible Preferred Stock shall be entitled to receive, on par with Series A Convertible Preferred Stock and in preference to the holders of Common Stock, an amount of cash equal to the greater of (i) the product of the number of shares of Series B Convertible Preferred Stock then held by such holder, multiplied by the original issue price of $0.50 per share; and (ii) the amount that would be payable to such holder in the Liquidation in respect of Common Stock issuable upon conversion of such shares of Series B Convertible Preferred Stock if all outstanding shares of Series B Convertible Preferred Stock were converted into Common Stock immediately prior to the Liquidation (disregarding for this purpose any and all limitations of any kind on such conversion).

Ranking

The Series B Convertible Preferred Stock ranks (i) on par with the Common Stock and Series A Convertible Preferred Stock as to dividend rights and (ii) on par with Series A Convertible Preferred Stock and senior to the Common Stock as to distributions of assets upon liquidation, dissolution or winding up of the Corporation, whether voluntarily or involuntarily.

See "Voting Rights—Matters Requiring Approval of Holders of Series B Convertible Preferred Stock" for a description of the types of issuances of equity securities and other securities of our company requiring approval of holders of a majority of shares of Series B Convertible Preferred Stock then outstanding, voting together as a class.

Redemption

To the extent we have funds legally available therefor, at any time after the fifth anniversary of the original issue date of the Series B Convertible Preferred Stock, we have the right to redeem all or any portion of the outstanding shares of Series B Convertible Preferred Stock at the original issue price of $0.50 by providing at least seventy five (75) days written notice of such redemption to all holders of the then outstanding shares of Series B Convertible Preferred Stock.

Conversion Rights

The holders of shares of Series B Convertible Preferred Stock will, at any time, be entitled to convert some or all of their Series B Convertible Preferred Stock into the number of shares of our common stock obtained by dividing the original purchase price of the shares to be converted by the aggregate Series B conversion price (which originally equaled the original purchase price, but is subject to adjustment), which amount we refer to as the conversion price and then multiplying such product by two (2).

The conversion price will be adjustable upon the occurrence of certain events and transactions as described under "Adjustments to Conversion Price" below. Any shares of our common stock issued upon conversion of the shares of Series B Convertible Preferred Stock shall be validly issued, fully paid and non-assessable. The Company shall either pay cash in lieu of fractional shares or round up to the next whole share. The initial conversion price was $0.50 but was adjusted to $5.00 as a result of the Company's reverse split of 1 for 10 on January 19, 2018 and further adjusted to $300.00 following our 1 for 60 reverse stock split effective on January 20, 2023.

Adjustments to Conversion Price

The Series B Convertible Preferred Stock is subject to provisions that provide for the adjustment of the conversion price and/or number of shares of common stock issuable upon conversion in certain events such as a subdivision, combination or reclassification of our outstanding common stock.

Voting Rights—Matters Requiring Approval of Holders of Series B Convertible Preferred Stock

Except as otherwise required by law, the Series B Convertible Preferred Stock shall have no voting rights. However, as long as any shares of Series B Convertible Preferred Stock are outstanding, we shall not, without the affirmative vote of the holders of a majority of the then outstanding shares of the Series B Convertible Preferred Stock, (a) amend, alter, repeal, restate or supplement (in each case, whether by reclassification, merger, consolidation, reorganization or otherwise) the certificate of designation in any manner that would adversely affect the holders of the Series B Convertible Preferred Stock, (b) authorize or agree to authorize any increase in the number of shares of Series B Convertible Preferred Stock or issue any additional shares of Series B Convertible Preferred Stock, (c) amend, alter or repeal any provision of the Certificate of Incorporation or Bylaws of the Company which would adversely affect any right, preference, privilege or voting power of the Series B Convertible Preferred Stock or the holders thereof or (d) agree to take any of the foregoing actions.

Registration Rights

The holders of the Series B Convertible Preferred Stock were granted certain demand registration rights and piggyback registration rights with respect to the shares of our Common Stock issuable upon conversion of the Series B Preferred Stock and exercise of their associated warrants, subject to customary cutbacks, blackout periods and other exceptions.

Series F Convertible Preferred Stock

On December 28, 2023, we issued 8,000,000 shares of convertible preferred stock, designated as the Series F Convertible Preferred Stock ("Series F Preferred Stock") pursuant to the certificate of designation and rights filed by the Company with the Secretary of State of the State of Florida ("Series F Certificate of Designation"), as partial consideration for the purchase of certain assets of Odyssey Health, Inc. On December 28, 2023 and pursuant to the Series F Certificate of Designation, 511,308 shares of Series F Preferred were converted to common stock and, as a result of such conversion, 7,488,692 shares of Series F Convertible Preferred Stock remain outstanding.

The following description is a summary of the material provisions of the Series F Convertible Preferred Stock.

Liquidation Preference

The Series F Preferred Stock is economically equivalent to the Company's common stock. Upon liquidation, it is at parity with the common stock and junior to Company's outstanding Class A and B Preferred Stock and any other class or series of capital stock of the Corporation created specifically ranking by its terms senior to the Series F Preferred Stock.

Dividends

No dividends shall be paid on shares of the Series F Preferred Stock.

Voting

The Series F Preferred Stock has no voting rights, except as required by applicable law and except for limited protective voting rights specifically set forth in Certificate of Designation.

Conversion

The Series F Preferred Stock is convertible commencing with the date of its issuance into Common Stock on a 1 for 1 basis (subject to customary adjustments). However, pursuant to the Series F Certificate of Designation, the holder of the Series F Preferred Stock cannot convert shares of Series F Preferred Stock into more than 19.9% of the Company's Common Stock outstanding as of October 4, 2023 until (i) the Company shall have applied for and been approved for initial listing on the NYSE American or another national securities exchange or shall have been delisted from the NYSE American, and (ii) if required by the rules of the NYSE American, the Company's shareholders shall have approved any change of control that could be deemed to occur upon the conversion of the Series F Preferred Stock into Common Stock, based on the facts and circumstances existing at such time.

Preemptive Rights

No holders of Series F Preferred Stock will, as holders of Series F Preferred Stock, have any preemptive rights to purchase or subscribe for our Common Stock or any of our other securities.

Redemption

The Series F Preferred Stock is not redeemable by the Company.

Trading Market

There is no established trading market for any of the Series F Preferred Stock, and the Company does not expect a market to develop. The Company does not intend to apply for a listing for any of the Series F Preferred Stock on any securities exchange or other nationally recognized trading system.

The following descriptions are summaries of the material terms that are included in our amended and restated articles of incorporation (as amended) and our bylaws (as amended) as well as the specific agreements such descriptions relate to. This summary is qualified in its entirety by the specific terms and provisions contained in our restated articles of incorporation, bylaws and the specific agreements described herein, copies of which we have filed as exhibits to our Form 10-K.

Series C, D and E Preferred Stock

The Company's previously had issued shares of Series C, D and E Preferred Stock. All of the shares of Series C Non-Voting, Non-Convertible Preferred Stock were redeemed by the Company in accordance with their terms and no shares of Series C Non-Voting, Non-Convertible Preferred Stock remain outstanding. All of the shares of Series D Preferred Stock-Converted to Common Stock were converted to common stock and as such, the Company no longer has any Series D Preferred Stock outstanding. Pursuant to the terms of the Series E Certificate of Designation, upon effectiveness of an amendment to the Amended and Restated Articles of Incorporation of the Company to effect an increase in the shares of Common Stock the Company was authorized to issue from 4,166,666 shares of Common Stock to 350,000,000 shares of Common Stock (the "Amendment"), each share of Series E Preferred Stock would be automatically transferred to the Company and cancelled for no consideration with no action on behalf of the holders of Series E Preferred Stock. The Company's shareholders approved the Amendment on December 14, 2023, and accordingly, all of the shares of Series E Preferred Stock resumed the status of authorized but unissued preferred stock and are no longer designated as Series E Preferred Stock.

Certain Anti-Takeover Provisions

Florida Law

We are not subject to the statutory anti-takeover provisions under Florida law because in our articles of incorporation we have specifically elected to opt out of both the "control-share acquisitions" (F.S. 607.0902) and the "affiliated transactions" (F.S. 607.0901) statutes. Since these anti-takeover statutes do not apply to a corporation that has specifically elected to opt out of such provisions, we would not be able to invoke the protection of such statutes in the event of a hostile takeover attempt.

Articles of Incorporation and Bylaw Provisions

Our articles of incorporation and bylaws contain provisions that could have an anti-takeover effect. These provisions include

- authorization of the issuance of "blank check" preferred stock that could be issued by our Board of Directors without shareholder approval and that may be substantially dilutive or contain preferences or rights objectionable to an acquiror;
- the ability of the Board of Directors to amend the bylaws without shareholder approval;
- vacancies on our board may only be filled by the remaining Directors and not our shareholders; and
- requirements that only our Board, our President or holders of more than 10% of our shares can call a special meeting of shareholders.

These provisions in our articles of incorporation and bylaws could delay or discourage transactions involving an actual or potential change in control of us, including transactions in which shareholders might otherwise receive a premium for their shares over their current prices. Such provisions could also limit the ability of shareholders to approve transactions that shareholders may deem to be in their best interests and could adversely affect the price of our common stock.

Transfer Agent and Registrar

The transfer agent and registrar of our common stock is Continental Stock Transfer & Trust Company, 1 State Street 30th Floor, New York, New York 10004,

telephone: (212) 509-4000.

DESCRIPTION OF SECURITIES WE ARE OFFERING

Common Stock

We are offering shares of common stock having an aggregate price of up to $10,000,000.

We are authorized to issue 350,000,000 shares of our Common Stock at $0.001 par value per share and 50,000,000 shares of our preferred stock, with no par value.

The material terms and provisions of our common stock are described under the caption “Description of Capital Stock” in this prospectus and are incorporated herein by reference.

Listing of Common Stock

Our common stock is currently listed on the NYSE American under the trading symbol “OGEN”.

Transfer Agent and Registrar

The transfer agent and registrar of our common stock is Continental Stock Transfer & Trust Company, 1 State Street 30th Floor, New York, New York 10004, telephone: (212) 509-4000.

PLAN OF DISTRIBUTION

We have entered into the Sales Agreement with Dawson James Securities, Inc., under which we may issue and sell over a period of time, and from time to time, shares of our common stock having an aggregate offering price of up to $10,000,000 through the Sales Agent acting as sales agent or directly to the Sales Agent acting as principal. This prospectus supplement relates to our ability to issue and sell over a period of time, and from time to time, shares of our common stock to or through the Sales Agent pursuant to the Sales Agreement. Sales of the shares to which this prospectus supplement and the accompanying prospectus relate, if any, may be made in transactions that are deemed to be “At-The-Market” offerings as defined in Rule 415 under the Securities Act, including sales made directly on or through the NYSE American (“NYSE American”), the trading market for our common stock, or any other trading market in the Unites States for our common stock, sales made to or through a market maker other than on an exchange, directly to the Sales Agent as principal for its account in negotiated transactions at market prices prevailing at the time of sale or at prices related to such prevailing market prices, in privately negotiated transactions, in block trades, or through a combination of any such methods of sale. To the extent required by Regulation M, the Sales Agent acting as our sales agent will not engage in any transactions that stabilize our common stock while the offering is ongoing under this prospectus supplement.

Upon written instructions from us, the Sales Agent will offer the shares of our common stock, subject to the terms and conditions of the Sales Agreement, on a daily basis or as otherwise agreed upon by us and the Sales Agent. We will designate the maximum amount of shares of our common stock to be sold through the Sales Agent on a daily basis or otherwise determine such maximum amount together with the Sales Agent, subject to certain limitations set forth by the SEC. Subject to the terms and conditions of the Sales Agreement, the Sales Agent will use commercially reasonable efforts to sell on our behalf all of the shares of our common stock so designated or determined. We may instruct the Sales Agent not to sell shares of our common stock if the sales cannot be effected at or above the price designated by us in any such instruction. The Sales Agent may also sell our common stock in negotiated transactions with our prior approval. We or the Sales Agent may suspend the offering of shares of our common stock being made under the Sales Agreement upon proper notice to the other party.

For their services as sales agent in connection with the sale of shares of our common stock that may be offered hereby, we will pay the Sales Agent an aggregate fee of 3.0% of the gross sales price per share for any shares sold through it acting as our sales agent. The remaining sales proceeds, after deducting any expenses payable by us and any transaction fees imposed by any governmental, regulatory or self-regulatory organization in connection with the sales, will equal our net proceeds for the sale of such shares. We have agreed to reimburse the Sales Agent for certain of its expenses in an amount not to exceed $30,000, and, thereafter, reasonable fees and expenses of the Sales Agent’s incurred in conjunction of performing legal services related to the Sales Agreement for the Company.

The Sales Agent will provide written confirmation to us no later than the opening of the trading day immediately following the day in which shares of common stock are sold by it on our behalf under the Sales Agreement. Each confirmation will include the number of shares sold on that day, the compensation payable by us to the Sales Agent and the proceeds to us net of such compensation.

Settlement for sales of our common stock will occur, unless the parties agree otherwise, on the first business day following the date on which any sales were made in return for payment of the proceeds to us net of compensation paid by us to the Sales Agent. There is no arrangement for funds to be received in an escrow, trust or similar arrangement.

Unless otherwise required, we will report at least quarterly the number of shares of common stock sold through the Sales Agent under the Sales Agreement, the net proceeds to us and the compensation paid by us to the Sales Agent in connection with the sales of common stock.

In connection with the sale of common stock on our behalf, the Sales Agent will be deemed to be an “underwriter” within the meaning of the Securities Act, and the compensation paid to it will be deemed to be underwriting commissions or discounts. We have agreed, under the Sales Agreement, to provide indemnification and contribution to the Sales Agent against certain civil liabilities, including liabilities under the Securities Act.

In the ordinary course of its business, the Sales Agent and/or its affiliates may perform investment banking, broker-dealer, financial advisory or other services for us for which it may receive separate fees.

We estimate that the total expenses from this offering payable by us, excluding compensation payable to the Sales Agent under the Sales Agreement, will be approximately $100,000. Additionally, pursuant to the terms of the Sales Agreement, we agreed to reimburse the Sales Agent for the reasonable fees and expenses of its legal counsel incurred in connection with quarterly and annual bring-downs required under the Sales Agreement in an amount not to exceed $2,500 in the aggregate for each such bring-down.

The offering of common stock pursuant to the Sales Agreement will terminate upon the earlier of (1) the sale of shares of our common stock with an aggregate offering price of $10,000,000 subject to the Sales Agreement and (2) the termination of the Sales Agreement, pursuant to its terms, by either the Sales Agent or us.

The Company and the Sales Agent may in the future agree to add one or more additional sales agents to the offering, in which case the Company will file a further prospectus supplement providing the name of such additional sales agents and any other required information.

This summary of the material provisions of the sales agreement does not purport to be a complete statement of its terms and conditions.

This prospectus and the accompanying base prospectus in electronic format may be made available on a website maintained by the Sales Agent and the Sales Agent may distribute this prospectus and the accompanying base prospectus electronically.

DILUTION

If you purchase shares of common stock in this offering, you will experience dilution to the extent of the difference between the public offering price of the shares of common stock in this offering and the net tangible book value per share of our common stock immediately after this offering.

As of June 30, 2024, our net tangible book value was $1,326,396 or $0.13 per share of our common stock, based upon 10,535,873 shares of common stock outstanding as of October 9, 2024. Historical net tangible book value per share is equal to our total tangible assets minus total liabilities as of June 30, 2024, all divided by the number of shares of common stock outstanding as of October 9, 2024. Dilution in net tangible book value per share represents the difference between the amount per share paid by purchasers of shares of common stock in this offering and the net tangible book value per share of common stock immediately after this offering.

After giving effect to the assumed sale of shares of our common stock in the aggregate amount of $10,000,000 in this offering at an assumed offering price of $0.40 per share, the last reported sale price of our common stock on the NYSE American on October 7, 2024, and after deducting commissions and estimated offering expenses payable by us, our as adjusted net tangible book value as of September 30, 2024, would have been $10,926,396 million, or $0.31 per share of common stock. This amount represents an immediate increase in as adjusted net tangible book value of $0.18 per share to our existing stockholders and an immediate dilution of $0.09 per share to investors participating in this offering. We determine dilution per share to investors participating in this offering by subtracting as adjusted net tangible book value per share after this offering from the assumed public offering price per share paid by investors participating in this offering.

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

Public Offering Price	$	0.40
Historical net tangible book value per share as of September 30, 2024	$	0.13
As adjusted, pro forma net tangible book value per share after giving effect to this offering	$	0.31
Increase in adjusted, pro forma net tangible book value per share attributable to new investors	$	.018
As adjusted, pro forma dilution per share to investors in this offering	$	.09

The adjusted calculation above is based on 10,535,873 shares of common stock outstanding as of October 9, 2024, and excludes as of that date:

- 1,022,53 shares of our common stock issuable upon the exercise of outstanding options under our equity incentive plans as of October 7, 2024 at a weighted average exercise price of $4.67 per share;
- 747,462 shares of common stock reserved for issuance under outstanding warrants as of October 7, 2024 with a weighted average exercise price of $22.98 per share;
- 2,901,404 shares of common stock reserved for issuance under outstanding pre-funded warrants as of October 7, 2024 with a weighted average exercise price of $0.001 per share;
- 143,664 additional shares of common stock reserved for future issuance under our 2021 equity incentive plan as of October 7, 2024;
- approximately 9,028 shares of common stock reserved for issuance under conversion of our outstanding shares of Series A Non-Voting, Convertible Preferred Stock;
- approximately 13,500 shares of common stock reserved for issuance under conversion of our outstanding shares of Series B Non-Voting, Convertible Preferred Stock; and
- approximately 7,488,692 shares of common stock reserved for issuance under conversion of 7,488,692 outstanding shares of Series F Non-Voting, Convertible Preferred Stock.

The conversion of our Series F Convertible Preferred Stock will impact the foregoing dilution calculation. After giving effect to the sale of our common stock in this offering at the public offering price of $0.40 per share, and after deducting the Sales Agent fees and estimated offering expenses payable by us and assuming the conversion of all 7,488,692 outstanding shares of Series F Convertible Preferred Stock, which shares are entitled to convert into shares of our common stock on a one-to-one basis, subject to certain restrictions and adjustments, our as adjusted, pro forma net tangible book value per share of common stock would be approximately $0.25, as of September 30, 2024. This represents an immediate dilution of approximately $.015 per share to new investors. See “Risk Factors”.

Furthermore, to the extent that any outstanding stock options or warrants are exercised, new stock options or warrants are issued, or we otherwise issue additional shares of common stock in the future at a price less than the offering price, there will be further dilution to new investors. See “Risk Factors”.

In addition, we may choose to raise additional capital due to market conditions or strategic considerations, even if we believe we have sufficient funds for our current or future operating plans. To the extent that additional capital is raised through the sale of equity or convertible debt securities, the issuance of these securities could result in further dilution to our stockholders.

LEGAL MATTERS

The validity of the issuance of the securities offered hereby has been passed upon for us by Shumaker, Loop & Kendrick, LLP, Tampa, Florida. ArentFox Schiff LLP, Washington, D.C. has acted as counsel for the Sales Agent.

EXPERTS

The financial statements incorporated in this prospectus by reference from the Company’s Annual Report on Form 10-K for our fiscal year ended December 31, 2023, filed with the SEC on March 29, 2024, have been audited by Cherry Bekaert LLP., an independent registered public accounting firm, as stated in their report which is incorporated herein by reference, which report includes an explanatory paragraph about the existence of substantial doubt concerning the Company’s ability to continue as a going concern. Such financial statements have been so incorporated in reliance upon the report of such firm given upon their authority as experts in accounting and auditing.

The consolidated financial statements for the year ended December 31, 2022, appearing in the Company’s Annual Report on Form 10-K for the year ended December 31, 2023, filed with the SEC on March 29, 2024, have been audited by CBIZ CPAs P.C., formerly known as Mayer Hoffman McCann P.C., independent registered public accounting firm, as set forth in their report, which report includes an explanatory paragraph about the existence of substantial doubt concerning the Company’s ability to continue as a going concern, and have been incorporated herein by reference in reliance upon such report given on the authority of such firm as experts in accounting and auditing, in giving said reports.

WHERE YOU CAN FIND MORE INFORMATION

We have filed with the SEC a registration statement on Form S-3 (File No. 333-269255) under the Securities Act of 1933, as amended, or the Securities Act, with respect to the securities offered by this prospectus supplement and the accompanying prospectus. This prospectus supplement and the accompanying prospectus filed as part of the registration statement do not contain all the information set forth in the registration statement and its exhibits. For further information about us, we refer you to the registration statement and to its exhibits.

We are a public company and file annual, quarterly and current reports, proxy statements and other information with the Securities and Exchange Commission ("SEC"). You can request copies of these documents by writing to the SEC and paying a fee for the copying cost. Our SEC filings are also available to the public at the SEC's web site at http://www.sec.gov.

In addition, we maintain a web site that contains information regarding our company, including copies of reports, proxy statements and other information we file with the SEC. The address of our web site is www.oragenics.com. Except for the documents specifically incorporated by reference into this prospectus, information contained on our website or that can be accessed through our website does not constitute a part of this prospectus. We have included our website address only as an inactive textual reference and do not intend it to be an active link to our website.

INFORMATION INCORPORATED BY REFERENCE

In this document, we "incorporate by reference" certain information we file with the SEC, which means that we can disclose important information to you by referring to that information. The information incorporated by reference is considered to be a part of this prospectus supplement. Any statement contained in a document incorporated by reference herein shall be deemed to be modified or superseded for all purposes to the extent that a statement contained in this prospectus supplement or in any other subsequently filed document that is also incorporated or deemed to be incorporated by reference, modifies or supersedes such statement. Any statement so modified or superseded shall not be deemed, except as so modified or superseded, to constitute a part of this prospectus supplement. We incorporate by reference the documents listed below (other than, in each case, documents or information deemed to be furnished and not filed in accordance with SEC rules):

- Our Annual Report on Form 10-K for the year ended December 31, 2023, filed with the SEC on March 29, 2024;
- Our Quarterly Reports on Form 10-Q for the quarter ended March 31, 2024, filed with the SEC on May 15, 2024 and for the quarter ended June 30, 2024, filed with the SEC on August 9, 2024;
- Our Definitive Proxy Statement on Schedule 14A, filed with the SEC on October 30, 2023;
- Our Current Reports on Form 8-K filed January 2, 2024, January 16, 2024, January 23, 2024, February 5, 2024, February 7, 2024, February 12, 2024, February 28, 2024, February 28, 2024, March 1, 2024, March 18, 2024, April 16, 2024, April 22, 2024, May 7, 2024, May 16, 2024, May 17, 2024, May 22, 2024, May 23, 2024, June 20, 2024; June 26, 2024, July 10, 2024, July 22, 2024, August 8, 2024, August 12, 2024, August 14, 2024, August 16, 2024, August 21, 2024, September 5, 2024, September 20, 2024, and October 9, 2024;
- The description of our common stock set forth in Exhibit 4.2 of our Current Report on Form 8-K filed March 1, 2024.

We also incorporate by reference into this prospectus supplement and the accompanying prospectus all documents (other than current reports furnished under Item 2.02 or Item 7.01 of Form 8-K and exhibits filed on such form that are related to such items) that are filed by us with the SEC pursuant to Sections 13(a), 13(c), 14 or 15(d) of the Securities Exchange Act of 1934, as amended, or the Exchange Act, after the date of this prospectus supplement until we sell all of the securities covered by this prospectus supplement and the accompanying prospectus or the sale of securities by us pursuant to this prospectus supplement and the accompanying prospectus is terminated.

A statement contained in a document incorporated by reference into this prospectus supplement and the accompanying prospectus shall be deemed to be modified or superseded for purposes of this prospectus supplement and the accompanying prospectus to the extent that a statement contained in this prospectus supplement and the accompanying prospectus or in any other subsequently filed document which is also incorporated by reference in this prospectus supplement and the accompanying prospectus modifies or replaces such statement. Any statements so modified or superseded shall not be deemed, except as so modified or superseded, to constitute a part of this prospectus supplement and the accompanying prospectus.

We hereby undertake to provide without charge to each person, including any beneficial owner, to whom a copy of this prospectus supplement is delivered, upon written or oral request of any such person, a copy of any and all of the information that has been or may be incorporated by reference in this prospectus supplement, including any exhibits that are specifically incorporated by reference in such documents. Requests for such copies should be directed as follows: Oragenics, Inc., 1990 Main St Suite 750 Sarasota, Florida 34236, Attention: Investor Relations, Phone: (813) 276-7900.

PROSPECTUS

ORAGENICS

$40,000,000

Common Stock
Warrants
Units

From time to time, we may offer, issue and sell up to $40,000,000 of any combination of the securities described in this prospectus. We may also offer securities as may be issuable upon conversion, redemption, repurchase, exchange or exercise of any securities registered hereunder, including any applicable antidilution provisions.

This prospectus provides you with a general description of the securities we may offer. Each time we offer securities, we will provide the specific terms of these offerings and securities in one or more supplements to this prospectus. We may also authorize one or more free writing prospectuses to be provided to you in connection with these offerings. The prospectus supplement and any related free writing prospectus may also add, update or change information contained in this prospectus. You should carefully read this

prospectus, the applicable prospectus supplement and any related free writing prospectus, as well as any documents incorporated by reference, before buying any of the securities being offered.

This prospectus may not be used to consummate a sale of any securities unless accompanied by a prospectus supplement.

The securities may be sold directly by us to investors, through agents designated from time to time or to or through underwriters or dealers, on a continuous or delayed basis. For additional information on the methods of sale, you should refer to the section entitled "Plan of Distribution" in this prospectus and in the applicable prospectus supplement. If any agents or underwriters are involved in the sale of any securities with respect to which this prospectus is being delivered, the names of such agents or underwriters and any applicable fees, commissions, discounts and over-allotment options will be set forth in a prospectus supplement. The price to the public of such securities and the net proceeds that we expect to receive from such sale will also be set forth in a prospectus supplement.

Our common stock is listed on the NYSE American under the symbol "OGEN". The last reported sale price of our common stock on January 12, 2023 was $7.63 per share. The applicable prospectus supplement will contain information, where applicable, as to any other listing, if any, on the NYSE American or any securities market or other exchange of the securities covered by the applicable prospectus supplement.

As of January 12, 2023, the aggregate market value of our outstanding common stock held by non-affiliates, or the public float, was approximately $14,662,868, which was calculated based on 1,921,739 shares of our outstanding common stock held by non-affiliates and on a price of $7.63 per share, the last reported sale price for our common stock on January 12, 2023. Pursuant to General Instruction I.B.6 of Form S-3, in no event will we sell our securities in a public primary offering with a value exceeding one-third of our public float in any 12-month period unless our public float subsequently rises to $75.0 million or more.

Investing in our securities involves a high degree of risk. You should review carefully the risks and uncertainties described under the heading "Risk Factors" beginning on page 8 of this prospectus, or contained in the applicable prospectus supplement and any related free writing prospectus we have authorized for use in connection with a specific offering, and under similar headings in the other documents that are incorporated by reference into this prospectus.

NEITHER THE SECURITIES AND EXCHANGE COMMISSION NOR ANY STATE SECURITIES COMMISSION HAS APPROVED OR DISAPPROVED OF THESE SECURITIES OR DETERMINED IF THIS PROSPECTUS IS TRUTHFUL OR COMPLETE. ANY REPRESENTATION TO THE CONTRARY IS A CRIMINAL OFFENSE.

The date of this prospectus is January 25, 2023.

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ABOUT THIS PROSPECTUS

This prospectus is part of a registration statement on Form S-3 that we filed with the Securities and Exchange Commission, or SEC, utilizing a "shelf" registration process. Under this shelf registration statement, we may, from time to time, sell any combination of the securities referred to herein in one or more offerings for total gross proceeds of up to $40,000,000. This prospectus provides you with a general description of the securities we may offer.

Until such time, if ever, as we are eligible to use General Instruction I.B.1. of Form S-3, pursuant to General Instruction I.B.6. of Form S-3, we are permitted to use the registration statement of which this prospectus forms a part to sell, via a primary offering, a maximum amount of securities equal to one-third of the aggregate market value of our outstanding voting and non-voting common equity held by non-affiliates of our company in any twelve month period.

Each time we offer a type or series of securities under this prospectus, we will provide a prospectus supplement that will contain more specific information about the terms of the offered securities. We also may authorize one or more free writing prospectuses to be provided to you that may contain material information relating to these offerings. This prospectus, together with applicable prospectus supplements and any related free writing prospectuses, includes all material information relating to these offerings. We also may add, update or change, in the prospectus supplement and in any related free writing prospectus that we may authorize to be provided to you, any of the information contained in this prospectus or in the documents that we have incorporated by reference into this prospectus. We urge you to read carefully this prospectus, any applicable prospectus supplement and any related free writing prospectus, together with the information incorporated herein by reference as described under the section entitled "Where You Can Find Additional Information" and "Incorporation of Certain Information by Reference" in this prospectus, before investing in any of the securities offered.

THIS PROSPECTUS MAY NOT BE USED TO CONSUMMATE A SALE OF SECURITIES UNLESS IT IS ACCOMPANIED BY A PROSPECTUS SUPPLEMENT.

You should rely only on the information that we have provided or incorporated by reference in this prospectus, any applicable prospectus supplement and any related free writing prospectus that we may authorize to be provided to you. We have not authorized any other person to provide you with different or additional information. No dealer, salesperson or other person is authorized to give any information or to represent anything not contained in this prospectus, any applicable prospectus supplement or any related free writing prospectus that we may authorize to be provided to you. You must not rely on any unauthorized information or representation. This prospectus, any applicable supplement to this prospectus or any related free writing prospectus do not constitute an offer to sell or the solicitation of an offer to buy any securities other than the registered securities to which they relate, nor do this prospectus, any applicable supplement to this prospectus or any related free writing prospectus constitute an offer to sell or the solicitation of an offer to buy securities in any jurisdiction to any person to whom it is unlawful to make such offer or solicitation in such jurisdiction.

You should not assume that the information appearing in this prospectus, any applicable prospectus supplement or any related free writing prospectus is accurate on any date subsequent to the date on the front of the document and that any information we have incorporated by reference is accurate as of the date of the document incorporated by reference, but not on any date subsequent to the date of the document incorporated by reference, regardless of the time of delivery of this prospectus, any applicable prospectus supplement or any related free writing prospectus or any sale of a security. Our business, financial condition, results of operations and prospectus may have changed since those dates.

This prospectus contains and incorporates by reference market data, industry statistics and other data that have been obtained from, or compiled from, information made available by third parties. We have not independently verified their data. This prospectus and the information incorporated herein by reference include trademarks, service marks and trade names owned by us or other companies. All trademarks, service marks and trade names included or incorporated by reference into this prospectus, any applicable prospectus supplement or any related free writing prospectus are the property of their respective owners.

This prospectus and the information incorporated herein by reference contains summaries of certain provisions contained in some of the documents described herein, but reference is made to the actual documents for complete information. All of the summaries are qualified in their entirety by the actual documents. Copies of some of the documents referred to herein have been filed, will be filed, or will be incorporated by reference as exhibits to the registration statement of which this prospectus is a part, and you may obtain copies of those documents as described below under the section entitled "Where You Can Find Additional Information" and "Incorporation of Certain Information by Reference".

PROSPECTUS SUMMARY

The items in the following summary are described in more detail elsewhere in this prospectus and in the documents incorporated by reference herein. This summary provides an overview of selected information and does not contain all the information you should consider before investing in our common stock. Therefore, you should read the entire prospectus and any free writing prospectus that we have authorized for use in connection with this offering carefully, including the "Risk Factors," and information under similar headings in the other documents that are incorporated by reference into this prospectus. You should also carefully read the information incorporated by reference into this prospectus, including our financial statements and related notes, and the exhibits to the registration statement of which this prospectus is a part, before making any investment decision.

Unless otherwise mentioned or unless the context requires otherwise, all references in this prospectus to "Oragenics" the "Company," "we," "our" and "us" or similar references mean Oragenics, Inc. When we refer to "you," we mean the holders of the applicable securities. We own various U.S. federal trademark applications and unregistered trademarks, including our company name. All other trademarks or trade names referred to in this prospectus are the property of their respective owners. Solely for convenience, the trademarks and trade names in this prospectus are referred to without the symbols ® and ™, but such references should not be construed as any indication that their respective owners will not assert, to the fullest extent under applicable law, their rights thereto.

Overview

We are a development-stage company dedicated to fighting infectious diseases including coronaviruses and multidrug-resistant organisms. Our lead product (NT-CoV2-1) is an intranasal vaccine candidate to prevent coronavirus disease ("COVID-19") from the SARS-CoV-2 virus and variants thereof. The NT-CoV2-1 program leverages coronavirus spike protein research licensed from the National Institutes of Health and the National Research Council of Canada with a focus on reducing viral transmission and offering a more patient-friendly intranasal administration. Our lantibiotics program features a novel class of antibiotics against bacteria that have developed resistance to commercial antibiotics.

Our SARS-CoV-2 Vaccine Product Candidate - NT-CoV2-1

Following our May 2020 acquisition of one hundred percent (100%) of the total issued and outstanding common stock of Noachis Terra, Inc. ("Noachis Terra") we are focused on the development and commercialization of a vaccine product candidate to provide long-lasting immunity from SARS-CoV-2, which causes COVID-19. Noachis Terra is a party to a worldwide, nonexclusive intellectual property and biological materials license agreement with the National Institute of Allergy and Infectious Diseases ("NIAID"), an institute within the National Institutes of Health ("NIH"), relating to certain research, patent applications and biological materials involving pre-fusion stabilized coronavirus spike proteins and their use in the development and commercialization of a vaccine to provide specific, long lasting immunity from SARS-CoV-2. Since the acquisition we have conducted testing in animal models, including SARS-CoV-2 challenge studies in hamsters, using specific formulations for intramuscular administration (our Terra CoV-2 vaccine candidate) and intranasal administration (our NT-CoV2-1 vaccine candidate), both based on the NIAID pre-fusion stabilized spike protein antigens. Following consideration of a number of factors, including but not limited to the competitive landscape, we determined to bring the intranasal vaccine candidate NT-CoV2-1, into further development due to the greater differentiation versus current COVID-19 vaccines and the potential benefits of intranasal over intramuscular administration. We believe these benefits could include a higher reduction of transmission of SARS-CoV-2 and would offer a needle-free delivery option. We therefore are currently focusing our development efforts on our more highly differentiated NT-CoV2-1 vaccine candidate.

On July 26, 2021, we entered into a licensing agreement with the National Research Council ("NRC") that enables us to pursue the development of next-generation vaccines against the SARS-CoV-2 virus and its variants. The license was subsequently amended to: include the Omicron variant, broaden the non-exclusive field of use to include all diseases caused by coronaviruses, and any genetic variants thereof, to add a research protocol developed by the NRC, and to add reagents as part of the NRC Technology licensed by us. The NRC technologies, in combination with the licensed technologies from the U.S. NIH used in our NT-CoV2-1 vaccine candidate, provide us with a platform that can generate cell lines for high-yield production of spike protein antigens for existing and emerging variants of concern. This platform should allow production of cell lines within six to eight weeks of spike gene sequence availability, compared with six to nine months for traditional production of such cell lines. The NRC technologies, developed with support from the NRC's Pandemic Response Challenge Program, are expected to enable expedited evaluation of SARS-CoV-2 antigen candidates in pre-clinical and clinical studies.

Coronaviruses are a family of viruses that can lead to upper-respiratory infections in humans. Recent clinical reports also suggest that the SARS-CoV-2 virus can affect other body-systems, including the nervous, cardiovascular, gastrointestinal and renal systems. Among the recent iterations of coronaviruses to move from animal to human carriers is SARS-CoV-2, which, beginning in Wuhan, China, in late 2019, caused a global pandemic due to its rapid spread and the relatively high mortality rate (as compared to the seasonal influenza). Pfizer/BioNTech received FDA approval for their COVID-19 vaccines in August of 2021 and the Moderna vaccine in January 2022. The Janssen vaccine is currently available in the United States under Emergency Use Authorizations ("EUA") by the FDA. In July 2022, the FDA granted EUA for the Novavax COVID-19 vaccine as well. Current vaccines have reduced the rates of hospitalization and death due to COVID-19 in vaccinated individuals, but the transmission levels even in vaccinated individuals has allowed SARS-CoV-2 variants to continue to circulate. We believe given the size of the worldwide spread of COVID-19 that even with additional vaccines available, there will be demand for the highly differentiated NT-CoV2-1 vaccine, once development is successfully completed. We intend to combine the research, patent applications and biological materials covered by our NIAID license and with our NRC license and our existing clinical research and manufacturing capabilities to respond to this ongoing, global, public health issue. We believe our NT-CoV2-1 vaccine holds the possibility of playing an important role in addressing this issue.

Coronaviruses, such as SARS-CoV-2, possess signature protein spikes on their outer capsule. Our NIAID license covers patents and data on a vaccine candidate that were

created based on a stabilized pre-fusion spike trimeric protein. By stabilizing the spike protein in the pre-fusion state, the number of immunogenic centers is increased thereby allowing for a greater likelihood of successful antibody binding, resulting in an improved immunogenic response. Spike protein antigens stabilized in the pre-fusion state have been used successfully in the leading COVID-19 vaccines from Pfizer/BioNTech and Moderna, which we believe reduces the risk of using the same approach in our NT-CoV2-1 vaccine candidate. The genetic code, acquired from the NIH, for the stabilized pre-fusion spike protein was provided to Aragen Bioscience, Inc. ("Aragen") for the purpose of insertion of the spike protein gene sequence into a Chinese Hamster Ovary ("CHO") cell line. Aragen is a leading contract research organization focused on accelerating pre-clinical biologics product development, has extensive experience building CHO cell lines for recombinant proteins, such as monoclonal antibodies. Aragen successfully inserted the NIH pre-fusion spike protein gene sequence into a CHO cell line and Oragenics is currently producing Phase 1 clinical material based upon this cell line.

We entered into both a material transfer agreement and a non-exclusive research license agreement with Inspirevax for the use of intranasal mucosal adjuvants in our NT-CoV2-1 vaccine candidates. Regarding the intranasal mucosal adjuvants of interest, BDX300 and BDX301 are proteosome-based adjuvants comprised of proteins and lipopolysaccharides with improved attributes including enhanced immune response, manufacturing efficiency and the benefits of intranasal vaccine administration. The non-exclusive license agreement allows for the collaboration and research regarding the intranasal delivery of vaccine during clinical development with the opportunity to enter into a commercial agreement upon regulatory approval of the intranasal vaccine. The NT-CoV2-1 vaccine containing Inspirevax's intranasal mucosal adjuvant BDX301 has been studied in pre-clinical animal studies, including hamster viral challenge studies and mouse immunogenicity studies. A rabbit toxicology study has been initiated and is required for regulatory approval prior to the Phase 1 clinical study.

A Non-Exclusive Research License Agreement with Inspirevax was executed in February 2022. This agreement granted the Company non-exclusive rights to conduct non-clinical and clinical research and trials in relation to vaccines comprising the BDX300 or BDX301 adjuvants to prevent or treat diseases caused by coronaviruses and genetic variants thereof.

We began pre-clinical studies in June of 2021 through our collaboration and material transfer agreement with the NRC. We initiated an immunogenicity study in mice to evaluate several adjuvant candidates. On August 30, 2021, we announced the successful completion of these mouse immunogenicity studies that supported further development using either the intramuscular or intranasal routes of administration. A hamster challenge study was initiated in September of 2021 to assess inhibition of viral replication using adjuvants specific for intramuscular and intranasal administration. In December of 2021, we announced that both formulations generated robust immune responses and reduced the SARS-CoV-2 viral loads to undetectable levels in the nasal passages and lungs five days following a viral challenge. By contrast, hamsters in the control groups that had received saline or adjuvants alone had no detectable immune response and substantial viral loads. The vaccines delivered by intranasal and intramuscular routes generated immune responses as measured by multiple assays. On June 14, 2022, we announced that the results of these studies were published in Nature Scientific Reports.

In March of 2022, following a positive assessment of a rabbit-based pilot study, we initiated a Good Laboratory Practice toxicology study to evaluate the safety profile and immunogenicity of NT-CoV2-1 in rabbits. This important preclinical study is designed to provide data required to advance our intranasal vaccine candidate into human clinical studies. The study has concluded and we completed the full set of toxicology data, which is needed to support the filing of an IND application for NT-CoV2-1. Based on the findings of the final toxicology report, including a full histopathology evaluation, we were able to confirm a safety and immunogenicity profile that further support our plan to submit regulatory filings required to progress to a Phase 1 clinical study.

While we previously had a Type B Pre-IND Meeting with the FDA on our intramuscular vaccine product candidate, we again met with the FDA in a Type B Pre-IND Meeting request to discuss our intranasal vaccine product candidate. As a result of this meeting, the FDA indicated that the Company could file an IND application for NT-CoV2-1 following the availability of the final GLP toxicology report for inclusion in the IND.

We believe the benefits of our NT-CoV2-1 vaccine product candidate through its intranasal delivery mechanism to be:

- **Targeted Mucosal Immunity** – Conventional injectable vaccines are poor inducers of mucosal immunity, whereas intranasal immunization can induce strong mucosal immunity by enhancing the immune response at the entry sites of mucosal pathogens. When the SARS-CoV-2 virus enters the nasal cavity, the respiratory epithelial layer is the first barrier against viral infection. The intranasal route of vaccination provides two additional layers of protection over intramuscular shots because (i) it produces immunoglobulin A and resident memory B and T cells in the respiratory mucosa that are an effective barrier to infection at those sites, and (ii) cross-reactive resident memory B and T cells can respond earlier than other immune cells should a viral variant start an infection.

- **Needle-Free Administration** – As an obvious benefit, intranasal administration means needle-free delivery, resulting in meaningful differentiation for children and needle-phobic populations, improved compliance and the potential for self-administration.

- **Storage & Transport** – The currently available mRNA-based vaccines have been delivered globally via stringent storage and transport requirements that strain distribution logistics under the best of circumstances. A key benefit of our NT-CoV2-1 vaccine candidate is a significantly reduced handling burden, allowing transport at a more manageable refrigeration temperature (5°C) that improves access globally including remote and under-vaccinated geographies.

- **Durability** – Broad initial success with mRNA vaccines has significantly diminished COVID-19's impact and death, but the trade-off has been fleeting efficacy. By benefitting from the immunological properties of the hybrid NIH/NRC construct, NT-CoV2-1 is potentially much more durable and long-lasting than currently available mRNA-based therapies.

Through assessment of a variety of factors including our pre-clinical testing to date, the expected benefits noted above, evolving variants and available vaccines in use, we determined to focus our development efforts on the intranasal delivery of our vaccine product candidate, NT-CoV2-1, which we believe is more highly differentiated than the currently available and late-stage COVID-19 vaccines. We expect to seek to file an IND application with the FDA and to thereafter commence a Phase 1 clinical study with NT-CoV2-1, the protocol for which is currently under development.

We expect to use our currently available cash resources to continue to advance the development of NT-CoV2-1 through IND-enabling studies and commencement of a Phase 1 clinical trial with further clinical development being contingent upon the receipt of additional funding, including non-dilutive government grant funding which we continue to pursue, or partnering or out-licensing opportunities.

Our Antibiotic Product Candidate - Oragenics Derived Compound (ODC-x)

Members of our scientific team discovered that a certain bacterial strain of*Streptococcus mutans,* produces Mutacin 1140 (MU1140), a molecule belonging to the novel class of antibiotics known as lantibiotics. Lantibiotics, such as MU1140, are highly modified peptide antibiotics made by a small group of Gram-positive bacterial species. Over 60 lantibiotics have been discovered, to date. We believe lantibiotics are generally recognized by the scientific community to be potent antibiotic agents.

In nonclinical testing, MU1140 has shown activity against all Gram-positive bacteria against which it has been tested, including those responsible for a number of healthcare associated infections, or HAIs. A high percentage of hospital-acquired infections are caused by highly antibiotic-resistant bacteria such as methicillin-resistant Staphylococcus aureus (MRSA) or multidrug-resistant Gram-negative bacteria. We believe the need for novel antibiotics is increasing as a result of the growing resistance of target pathogens to existing FDA approved antibiotics on the market.

Lantibiotics have been difficult to investigate for their clinical usefulness as therapeutic agents in the treatment of infectious diseases due to a general inability to produce or synthesize sufficient quantities of pure amounts of these molecules. Traditional fermentation methods can only produce minute amounts of the lantibiotic.

The timing of the filing of an IND regarding any future lantibiotic candidate is subject to our having sufficient available human, material and financing capital, which includes research subjects, both animal and human, given all of our anticipated needs and expected requirements in connection with our ongoing research and development initiatives. We expect to continue to advance our lantibiotics program to an IND filing based on the availability of both human and financial capital. Based upon the current funding we expect to continue to focus on the identification of new potential product lantibiotic candidates, efficient and cost-effective improvements in the manufacturing processes and pre-clinical studies required to support a first in human Phase 1 clinical study.

In October 2021, we were awarded a small business innovation research grant in the amount of $250,000 ("Computer-aided Design for Improved Lantibiotics", R41GM136034) for the Company's continued research and development of lantibiotics, including its collaborative program with the Biomolecular Sciences Institute at Florida International University (FIU). The grant provides the Company with funding to develop novel lantibiotics for the treatment of ESKAPE pathogens (defined as *Enterococcus faecium, Staphylococcus aureus, Klebsiella pneumoniae, Acinetobacter baumannii, Pseudomonas aeruginosa, and Enterobacter spp.*).

Product Candidates.

Through our wholly-owned subsidiary, Noachis Terra, we began the research and development stage for our new Terra CoV-2 and NT-CoV2-1 vaccine product candidates. We hold a nonexclusive, worldwide intellectual property license agreement for certain research, patent applications and biological materials relating to the use of pre-fusion coronavirus spike proteins for the development and commercialization of a vaccine against SARS-CoV-2. We also hold a non-exclusive license with the NRC that enables us to pursue the rapid development of next-generation vaccines against the SARS-CoV-2 (the "NIH License") virus and its variants (the "NRC License" and together with the NIH License the "License Agreements").

Additionally, we are developing semi-synthetic lantibiotic analogs that may be effective against systemic Gram-positive multidrug infections, and analogs that may be effective in treating Gram-negative infections. We seek to protect our product candidates through patents and patent applications pursuant to the terms of our License Agreements.

Product/Candidate	Description	Application	Status
NT-CoV2-1	Intranasal vaccine candidate (recombinant protein + adjuvant) to provide long lasting immunity against SARS-CoV-2	Broad, community-based vaccine immunity against SARS-CoV-2	Pre-clinical
Antibiotics	Semi-synthetic analogs of MU1140: Member of lantibiotic class of antibiotics	Healthcare-associated infections	Pre-clinical

Recent Developments

On December 22, 2022 our board of directors approved a 1 for 60 reverse stock split of our authorized, issued and outstanding of common stock to be effective on January 20, 2023. The par value per common shares will remain unchanged. Except where the context otherwise requires, share numbers in this prospectus reflect the 1 for 60 reverse stock split of our common stock.

Our Business Development Strategy

Success in the biopharmaceutical and product development industry relies on the continuous development of novel product candidates. Most product candidates do not make it past the clinical development stage, which forces companies to look externally for innovation. Accordingly, we expect from time to time, to seek strategic opportunities through various forms of business development, which can include strategic alliances, licensing deals, joint ventures, collaborations, equity-or debt-based investments, dispositions, mergers and acquisitions. We view these business development activities as a necessary component of our strategies, and we seek to enhance shareholder value by evaluating business development opportunities both within and complementary to our current business as well as opportunities that may be new and separate from the development of our existing product candidates.

Corporate and Other Information

We were incorporated in November 1996 and commenced operations in 1999. We consummated our initial public offering in June 2003. Our executive office is located at, 1990 Main St. Suite 750 Sarasota, Florida 34236. Our telephone number is (813) 286-7900 and our website is http://www.oragenics.com. We make available free of charge on our website our annual report on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K and amendments to those reports as soon as reasonably practicable after we electronically file or furnish such materials to the Securities and Exchange Commission (the "SEC"). The reports are also available at www.sec.gov. We do not incorporate by reference into this prospectus the information on, or accessible through, our website, and you should not consider it as part of this prospectus and it should not be relied on in connection with this offering. We have included our website address as an inactive textual reference only.

Implications of Being a Smaller Reporting Company

We are a "smaller reporting company" as defined in Rule 12b-2 promulgated under the Securities Exchange Act of 1934, as amended, or the Exchange Act. We may remain a smaller reporting company until we have a non-affiliate public float in excess of $250 million and annual revenues in excess of $100 million, or a non-affiliate public float in excess of $700 million, each as determined on an annual basis. A smaller reporting company may take advantage of relief from some of the reporting requirements and other burdens that are otherwise applicable generally to public companies. These provisions include:

- being permitted to provide only two years of audited financial statements, in addition to any required unaudited interim financial statements, with correspondingly reduced "Management's Discussion and Analysis of Financial Condition and Results of Operations" disclosure;

- not being required to comply with the auditor attestation requirements in the assessment of our internal control over financial reporting; and
- reduced disclosure obligations regarding executive compensation in our periodic reports, proxy statements and registration statements.

Securities We May Offer

We may offer shares of our common stock, warrant shares of our common stock to purchase, either individually or in combination, and/or units consisting of some or all of such securities for total gross proceeds of up to $40 million, from time to time under this prospectus, together with the applicable prospectus supplement and any related free writing prospectus, at prices and on terms to be determined by market conditions at the time of any offering. This prospectus provides you with a general description of the securities we may offer. We will describe in the applicable prospectus supplement relating to any securities the particular terms of the securities offered by that prospectus supplement. If we indicate in the applicable prospectus supplement, the terms of the securities may differ from the terms we have summarized below. We may also include in

the prospectus supplement information about material United States federal income tax considerations relating to the securities, and the securities exchange, if any, on which the securities will be listed.

We may sell from time to time, in one or more offerings:

- Common stock;
- Warrants to purchase shares of common stock; and
- Units consisting of any combination of the securities listed above.

In this prospectus, we refer to the common stock, warrants and units collectively as "securities". The total dollar amount of all securities that we may sell pursuant to this prospectus will not exceed $40,000,000.

This prospectus may not be used to consummate a sale of securities unless it is accompanied by a prospectus supplement.

RISK FACTORS

Investing in our securities involves a high degree of risk. You should carefully review the risks and uncertainties described under the heading "Risk Factors" contained in the applicable prospectus supplement and any related free writing prospectus, and under similar headings in our Annual Report on Form 10-K for the year ended December 31, 2021, as updated or supplemented by any subsequently filed periodic reports and other documents as filed with the SEC and incorporated by reference into this prospectus, before deciding whether to purchase any of the securities being registered pursuant to the registration statement of which this prospectus is a part. Each of the risk factors described in the documents referenced above could adversely affect our business, operating results and financial condition, as well as adversely affect the value of an investment in our securities, and the occurrence of any of these risks might cause you to lose all or part of your investment. Additional risks not presently known to us or that we currently believe are immaterial may also significantly impair our business operations.

SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus and the documents incorporated by reference herein contain forward-looking statements. These are based on our management's current beliefs, expectations and assumptions about future events, conditions and results and on information currently available to us. Discussions containing these forward-looking statements may be found, among other places, in the sections entitled "Business," "Risk Factors" and "Management's Discussion and Analysis of Financial Condition and Results of Operations" contained in the documents incorporated by reference herein.

Any statements in this prospectus, or incorporated herein, about our expectations, beliefs, plans, objectives, assumptions or future events or performance are not historical facts and are forward-looking statements. Within the meaning of Section 27A of the Securities Act and Section 21E of the Exchange Act, these forward-looking statements include statements regarding:

- We have incurred significant operating losses since our inception and cannot assure you that we will generate revenues or achieve profitability;
- We will need to raise additional capital to fully implement our business strategy and we may not be able to do so;
- Our financial capacity and performance, including our ability to obtain funding, non-dilutive or otherwise, necessary to do the research, development, manufacture and commercialization of any one or all of our product candidates;
- The timing, progress and results of clinical trials of our product candidates, including statements regarding the timing of initiation and completion of pre-clinical studies or clinical trials or related preparatory work, the period during which the results of the trials will become available and our research and development programs;
- The timing of any submission of filings for regulatory approval of our product candidates and our ability to obtain and maintain regulatory approvals for our product candidates for any indication;
- Our expectations regarding the potential benefits, activity, effectiveness and safety of our product candidates including as to administration, distribution and storage;
- Our expectations regarding the size of the patient populations, market acceptance and opportunity for and clinical utility of our product candidates, if approved for commercial use;
- Our manufacturing capabilities and strategy, including the scalability and commercial viability of our manufacturing methods and processes, and those of our contractual partners;
- Our expectations regarding the scope of any approved indications for our product candidates;
- Our ability to successfully commercialize our product candidates;
- The potential benefits of, and our ability to maintain, our relationships and collaborations with the NIAID, the NIH, the NRC and other potential collaboration or strategic relationships;
- Our ability to use our lantibiotic platform to develop future product candidates;
- Our estimates of our expenses, ongoing losses, future revenue, capital requirements and our needs for or ability to obtain additional funding, including any application for future grants or funding;
- Our ability to identify, recruit and retain key personnel and consultants;

- Our ability to obtain, retain, protect and enforce our intellectual property position for our product candidates, and the scope of such protection;
- Our ability to advance the development of our new NT-CoV2-1 vaccine product candidate under the timelines and in accord with the milestones projected;

- Our inability to achieve success in our identification of lantibiotic homologs or the manufacture and nonclinical testing of our lantibiotic product candidates;
- Our need to comply with extensive and costly regulation by worldwide health authorities, who must approve our product candidates prior to substantial research and development and could restrict or delay the future commercialization of certain of our product candidates;
- Our ability to successfully complete pre-clinical and clinical development of, and obtain regulatory approval of our product candidates and commercialize any approved products on our expected timeframes or at all;
- The safety, efficacy and benefits of our product candidates;
- The content and timing of submissions to and decisions made by the FDA, other regulatory agencies and nongovernmental bodies and actors, such as investigational review boards;
- The effects of government regulation and regulatory developments, and our ability and the ability of the third parties with whom we engage to comply with applicable regulatory requirements;
- The capacities and performance of our suppliers and manufacturers and other third parties over whom we have limited control;
- Our ability to maintain our listing on the NYSE American and the effects of our contemplated 1 for 60 reverse stock split on our price per share and the trading market of our common stock;
- The impact of the COVID-19 pandemic on our financial condition and business operations and our ability to continue research and development for existing product candidates on previously-projected timelines or in accord with ordinary practices, as well as the broader governmental, global health and macro- and microeconomic responses to and consequences of the pandemic;
- We may be adversely impacted by any significant broad-based financial crises and its impact on consumers, retailers and equity and debt markets as well as our inability to obtain required additional funding to conduct our business;
- As a public company, we must implement additional and expensive finance and accounting systems, procedures and controls as we grow our business and organization to satisfy reporting requirements, which add to our costs and require additional management time and resources;
- Our competitive position and the development of and projections relating to our competitors or our industry; and
- The impact of laws and regulations, including those that may not yet exist.

In some cases, you can identify forward-looking statements by the words “may,” “might,” “can,” “will,” “to be,” “could,” “would,” “should,” “expect,” “intend,” “plan,” “objective,” “anticipate,” “believe,” “estimate,” “predict,” “project,” “potential,” “likely,” “continue” and “ongoing,” or the negative of these terms, or other comparable terminology intended to identify statements about the future, although not all forward-looking statements contain these words. These statements involve known and unknown risks, uncertainties and other factors that may cause our actual results, levels of activity, performance or achievements to be materially different from the information expressed or implied by these forward-looking statements.

You should refer to the “Risk Factors” section contained in the applicable prospectus supplement and any related free writing prospectus, and under similar headings in the other documents that are incorporated by reference into this prospectus, for a discussion of important factors that may cause our actual results to differ materially from those expressed or implied by our forward-looking statements. Given these risks, uncertainties and other factors, many of which are beyond our control, we cannot assure you that the forward-looking statements in this prospectus will prove to be accurate, and you should not place undue reliance on these forward-looking statements. Furthermore, if our forward-looking statements prove to be inaccurate, the inaccuracy may be material. In light of the significant uncertainties in these forward-looking statements, you should not regard these statements as a representation or warranty by us or any other person that we will achieve our objectives and plans in any specified time frame, or at all.

Except as required by law, we assume no obligation to update these forward-looking statements publicly, or to revise any forward-looking statements to reflect events or developments occurring after the date of this prospectus, even if new information becomes available in the future.

USE OF PROCEEDS

We will retain broad discretion over the use of the net proceeds from the sale of the securities offered hereby. Except as described in any applicable prospectus supplement or in any free writing prospectuses that we may authorize to be provided to you in connection with a specific offering, we currently intend to use the net proceeds from the sale of the securities offered hereby for working capital, capital expenditures and general corporate purposes, which may include, without limitation, funding research, clinical and process development and manufacturing of our product candidates. We may also use a portion of the net proceeds to invest in, collaborate with, acquire, or in-licensing of products or product candidates, business or technologies that we believe are complementary to our own, although we have no current plans, commitments or agreements with respect to any acquisitions as of the date of this prospectus. We will set forth in the applicable prospectus supplement or free writing prospectus our intended use for the net proceeds received from the sale of any securities sold pursuant to the prospectus supplement or free writing prospectus. Pending these uses, we intend to invest the net proceeds in investment-grade, interest-bearing securities.

DIVIDEND POLICY

We have never paid cash dividends on our common stock. Moreover, we do not anticipate paying periodic cash dividends on our common stock for the foreseeable future. We intend to use all available cash and liquid assets in the operation and growth of our business. Any future determination about the payment of dividends will be made at the discretion of our board of directors and will depend upon our earnings, if any, capital requirements, operating and financial conditions and on such other factors as our board of directors deems relevant.

DESCRIPTION OF CAPITAL STOCK

The following descriptions are summaries of the material terms that are included in our amended and restated articles of incorporation (as amended) and our bylaws (as

amended) as well as the specific agreements such descriptions relate to. This summary is qualified in its entirety by the specific terms and provisions contained in our restated articles of incorporation, bylaws and the specific agreements described herein, copies of which we have filed as exhibits to the registration statement of which this prospectus is a part, and by the provisions of applicable law.

Overview

Authorized Capital Stock

Our authorized capital stock consists of 250,000,000 (4,166,666 following the effectiveness of our 1 for 60 reverse stock on January 20, 2023) shares of common stock, par value $0.001, and 50,000,000 shares of preferred stock, without par value.

Common Stock

Voting

The holders of our common stock are entitled to one vote for each share held of record on all matters submitted to a vote of the shareholders. Approval of an amendment of our articles of incorporation, a merger, a share exchange, a sale of all our property or dissolution must be approved by a majority of all votes entitled to be cast. Such votes may be cast in person or by proxy as provided in Article I Section 8 of our bylaws. One third of our shares entitled to vote constitute a quorum for purposes of a meeting of our shareholders.

Dividends

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

In the event of the liquidation, dissolution or winding up of the Company, the holders of our common stock are entitled to share ratably in all assets remaining after payment of liabilities, subject to prior distribution rights of preferred stock, if any, then outstanding. The common stock has no preemptive or conversion rights. There are no redemption or sinking fund provisions applicable to the common stock. All outstanding shares of common stock are fully paid and non-assessable.

Rights upon Liquidation

Upon our liquidation, dissolution or winding-up, after payment in full of our liabilities and the amounts required to be paid to holders of any outstanding shares of preferred stock, if any, all holders of our common stock, along with the holders of our Series A Convertible Preferred Stock and Series B Convertible Preferred Stock on an "as if" converted basis, will be entitled to receive a pro rata distribution of all of our assets and funds legally available for distribution.

Redemption and Pre-Emptive Rights

No shares of our common stock are subject to redemption or have preemptive rights to purchase additional shares of our common stock or any of our other securities.

Fully Paid and Nonassessable

All of our outstanding shares of common stock are, and the shares of common stock to be issued in this offering will be, fully paid and nonassessable.

Preferred Stock

Our Board of Directors has the authority, without action by our shareholders, to designate and issue up to 50,000,000 shares of preferred stock in one or more series or classes and to designate the rights, preferences and privileges of each series or class, which may be greater than the rights of our common stock. These rights, preferences and privileges could include dividend rights, conversion rights, voting rights, redemption rights, liquidation preferences, the number of shares constituting any class or series and the designation of the class or series. Terms selected by our Board of Directors in the future could decrease the amount of earnings and assets available for distribution to holders of shares of common stock or adversely affect the rights and powers, including voting rights, of the holders of shares of common stock without any further vote or action by the stockholders. As a result, the rights of holders of our common stock will be subject to, and may be adversely affected by, the rights of the holders of the Series A Convertible Preferred Stock, and Series B Convertible Preferred Stock or any other preferred stock that may be issued by us in the future, which could have the effect of decreasing the market price of our common stock.

Series A Convertible Preferred Stock

On May 10, 2017 and on July 25, 2017, we issued an aggregate of 12,000,000 shares of convertible preferred stock, designated as the Series A Convertible Preferred Stock pursuant to the certificate of designation and rights filed by us with the Secretary of State of the State of Florida, with an aggregate original purchase price and initial liquidation preference of $3.0 million. Each share of Series A Convertible Preferred Stock was issued for an amount equal to $0.25 per share, which we refer to as the original purchase price. On March 9, 2018 and August 26, 2022, certain holders of Series A Convertible Preferred Stock elected to convert to common stock and, as a result of such conversions, 5,417,000 shares of Series A Preferred remain outstanding.

The following description is a summary of the material provisions of the Series A Convertible Preferred Stock and the certificate of designation and rights and does not purport to be complete. This summary is subject to and is qualified by reference to all the provisions of the Series A Convertible Preferred Stock and certificate of designation and rights of Series A Convertible Preferred Stock, including the definitions of certain terms used in the certificate of designation and rights. We urge you to read this document because it, and not this description, defines the rights of a holder of the Series A Convertible Preferred Stock. A copy of the form of certificate of designation and rights that we filed with the Secretary of State of the State of Florida effective May 10, 2017 as amended and restated effective November 8, 2017 has been incorporated by reference as an exhibit to the registration statement of which this prospectus forms a part.

No Mandatory Redemption Date or Sinking Fund

The shares of Series A Convertible Preferred Stock do not have a mandatory redemption date and are not subject to any sinking fund. The shares of Series A Convertible Preferred Stock will remain outstanding indefinitely unless we elect to redeem them under the circumstances described below in "Redemption" or we otherwise repurchase them or they are converted into shares of our common stock as described below under "Conversion Rights".

Dividends

The shares of Series A Convertible Preferred Stock are entitled to participate in all dividends declared and paid on shares of company common stock on an "as if" converted basis.

Liquidation Preference

Upon any liquidation, dissolution or winding-up of the Company, whether voluntary or involuntary that is not a Fundamental Transaction (as defined in the certificate of designation), the holders of Series A Convertible Preferred Stock shall be entitled to receive out of the assets, the greater of (i) the product of the number of shares of Series A Preferred Stock then held by such holder, multiplied by the original issue price; and (ii) the amount that would be payable to such holder in the liquidation in respect of Common Stock issuable upon conversion of such shares of Series A Preferred Stock if all outstanding shares of Series A Preferred Stock were converted into Common Stock immediately prior to the Liquidation.

Ranking

The Series A Convertible Preferred Stock ranks (i) on par with the Common Stock and Series B Convertible Preferred Stock and junior to Series C Non-Convertible Preferred Stock as to dividend rights and (ii) on par with Series B Convertible Preferred Stock, junior to Series C Non-Convertible Preferred Stock and senior to Common Stock as to rights upon liquidation, dissolution or winding up of the Company, whether voluntarily or involuntarily.

See "Voting Rights—Matters Requiring Approval of Holders of Series A Convertible Preferred Stock" for a description of the types of issuances of equity securities and other securities of our company requiring approval of holders of a majority of shares of Series A Convertible Preferred Stock then outstanding, voting together as a class.

Redemption

To the extent we have funds legally available therefor, at any time after the fifth anniversary of the original issue date of the Series A Convertible Preferred Stock, we have the right to redeem all or any portion of the outstanding shares of Series A Convertible Preferred Stock at the original issue price of $0.25 by providing at least seventy five (75) days written notice of such redemption to all holders of the then outstanding shares of Series A Convertible Preferred Stock.

Conversion Rights

The holders of shares of Series A Convertible Preferred Stock will, at any time, be entitled to convert some or all of their Series A Convertible Preferred Stock into the number of shares of our common stock obtained by dividing the original purchase price of the shares to be converted by the aggregate Series A conversion price (which originally equaled the original purchase price, but is subject to adjustment), which amount we refer to as the conversion price.

The conversion price will be adjustable upon the occurrence of certain events and transactions to prevent dilution as described under "Adjustments to Conversion Price to Prevent Dilution". Any shares of our common stock issued upon conversion of the shares of Series A Convertible Preferred Stock shall be validly issued, fully paid and non-assessable. The Company shall in lieu of fractional shares rounded up to the next whole share. The initial conversion price was $0.25 but was adjusted to $2.50 as a result of the Company's reverse split of 1 for 10 on January 19, 2018 and will be subject to further adjustment following the Company's contemplated 1 for 60 reverse stock split expected to be effective on January 20, 2023.

Adjustments to Conversion Price to Prevent Dilution

The Series A Convertible Preferred Stock is subject to provisions that protect the holders against dilution by adjustment of the conversion price and/or number of shares of common stock issuable upon conversion in certain events such as a subdivision, combination or reclassification of our outstanding common stock.

Voting Rights—Matters Requiring Approval of Holders of Series A Convertible Preferred Stock

Except as otherwise required by law, the Series A Convertible Preferred Stock shall have no voting rights. However, as long as any shares of Series A Convertible Preferred Stock are outstanding, we shall not, without the affirmative vote of the holders of a majority of the then outstanding shares of the Series A Convertible Preferred Stock, (a) alter or change adversely the powers, preferences or rights given to the Series A Convertible Preferred Stock or alter or amend the certificate of designation, (b) amend its articles of incorporation or other charter documents in any manner that adversely affects any rights of the holders of Series A Convertible Preferred Stock, (c) increase the number of authorized shares of Series A Convertible Preferred Stock, or (d) enter into any agreement with respect to any of the foregoing.

Registration Rights

The holders of the Series A Convertible Preferred Stock were granted certain demand registration rights and piggyback registration rights with respect to the shares of our Common Stock issuable upon conversion of the Series A Preferred Stock and exercise of their associated warrants, subject to customary cutbacks, blackout periods and other exceptions.

Series B Convertible Preferred Stock

On November 8, 2017, we issued 6,600,000 shares of convertible preferred stock, designated as the Series B Convertible Preferred Stock pursuant to the certificate of designation and rights filed by us with the Secretary of State of the State of Florida, with an aggregate original purchase price and initial liquidation preference of $3.3 million. Each share of Series B Convertible Preferred Stock was issued for an amount equal to $0.50 per share, which we refer to as the original purchase price. On August 26, 2022 a certain holder of Series B Convertible Preferred Stock elected to convert to common stock and, as a result of such conversion, 4,050,000 shares of Series B Convertible Preferred Stock remain outstanding.

The following description is a summary of the material provisions of the Series B Convertible Preferred Stock and the certificate of designation and rights and does not purport to be complete. This summary is subject to and is qualified by reference to all the provisions of the Series B Convertible Preferred Stock and certificate of designation and rights of Series B Convertible Preferred Stock, including the definitions of certain terms used in the certificate of designation and rights. We urge you to read this document because it, and not this description, defines the rights of a holder of the Series B Convertible Preferred Stock. A copy of the form of certificate of designation and rights that we filed with the Secretary of State of the State of Florida effective November 8, 2017 has been incorporated by reference as an exhibit to the registration statement of which this prospectus forms a part.

No Mandatory Redemption Date or Sinking Fund

The shares of Series B Convertible Preferred Stock do not have a mandatory redemption date and are not subject to any sinking fund. The shares of Series B Convertible Preferred Stock will remain outstanding indefinitely unless we elect to redeem them under the circumstances described below in "Redemption" or we otherwise repurchase them or they are converted into shares of our common stock as described below under "Conversion Rights".

Dividends

The shares of Series B Convertible Preferred Stock are entitled to participate in all dividends declared and paid on shares of company common stock on an "as if" converted

basis.

Liquidation Preference

Upon any liquidation, dissolution or winding-up of the Company (any such event, a "Liquidation"), whether voluntary or involuntary, each holder of shares of Series B Convertible Preferred Stock shall be entitled to receive, after payment to the Series C Non-Convertible Preferred Stock as provided in the Certificate of Designation of Series C Non-Convertible Preferred Stock, but on par with Series A Convertible Preferred Stock and in preference to the holders of Common Stock, an amount of cash equal to the greater of (i) the product of the number of shares of Series B Convertible Preferred Stock then held by such holder, multiplied by the original issue price; and (ii) the amount that would be payable to such holder in the Liquidation in respect of Common Stock issuable upon conversion of such shares of Series B Convertible Preferred Stock if all outstanding shares of Series B Convertible Preferred Stock were converted into Common Stock immediately prior to the Liquidation (disregarding for this purpose any and all limitations of any kind on such conversion).

Ranking

The Series B Convertible Preferred Stock ranks (i) on par with the Common Stock and Series A Convertible Preferred Stock and junior to Series C Non-Convertible Preferred Stock as to dividend rights and (ii) junior to Series C Non-Convertible Preferred Stock, on par with Series A Convertible Preferred Stock and senior to the Common Stock as to distributions of assets upon liquidation, dissolution or winding up of the Corporation, whether voluntarily or involuntarily.

See "Voting Rights—Matters Requiring Approval of Holders of Series B Convertible Preferred Stock" for a description of the types of issuances of equity securities and other securities of our company requiring approval of holders of a majority of shares of Series B Convertible Preferred Stock then outstanding, voting together as a class.

Redemption

To the extent we have funds legally available therefor, at any time after the fifth anniversary of the original issue date of the Series B Convertible Preferred Stock, we have the right to redeem all or any portion of the outstanding shares of Series B Convertible Preferred Stock at the original issue price of $0.50 by providing at least seventy five (75) days written notice of such redemption to all holders of the then outstanding shares of Series B Convertible Preferred Stock.

Conversion Rights

The holders of shares of Series B Convertible Preferred Stock will, at any time, be entitled to convert some or all of their Series B Convertible Preferred Stock into the number of shares of our common stock obtained by dividing the original purchase price of the shares to be converted by the aggregate Series B conversion price (which originally equaled the original purchase price, but is subject to adjustment), which amount we refer to as the conversion price and then multiplying such product by two (2).

The conversion price will be adjustable upon the occurrence of certain events and transactions to prevent dilution as described under "Adjustments to Conversion Price to Prevent Dilution". Any shares of our common stock issued upon conversion of the shares of Series B Convertible Preferred Stock shall be validly issued, fully paid and non-assessable. The Company shall either pay cash in lieu of fractional shares or round up to the next whole share. The initial conversion price was $0.50 but was adjusted to $5.00 as a result of the Company's reverse split of 1 for 10 on January 19, 2018 and will be subject to further adjustment following the Company's contemplated 1 for 60 reverse stock split expected to be effective on January 20, 2023.

Adjustments to Conversion Price to Prevent Dilution

The Series B Convertible Preferred Stock is subject to provisions that protect the holders against dilution by adjustment of the conversion price and/or number of shares of common stock issuable upon conversion in certain events such as a subdivision, combination or reclassification of our outstanding common stock.

Voting Rights—Matters Requiring Approval of Holders of Series B Convertible Preferred Stock

Except as otherwise required by law, the Series B Convertible Preferred Stock shall have no voting rights. However, as long as any shares of Series B Convertible Preferred Stock are outstanding, we shall not, without the affirmative vote of the holders of a majority of the then outstanding shares of the Series B Convertible Preferred Stock, (a) amend, alter, repeal, restate or supplement (in each case, whether by reclassification, merger, consolidation, reorganization or otherwise) the certificate of designation in any manner that would adversely affect the holders of the Series B Convertible Preferred Stock, (b) authorize or agree to authorize any increase in the number of shares of Series B Convertible Preferred Stock or issue any additional shares of Series B Convertible Preferred Stock, (c) amend, alter or repeal any provision of the Certificate of Incorporation or Bylaws of the Company which would adversely affect any right, preference, privilege or voting power of the Series B Convertible Preferred Stock or the holders thereof or (d) agree to take any of the foregoing actions.

Registration Rights

The holders of the Series B Convertible Preferred Stock were granted certain demand registration rights and piggyback registration rights with respect to the shares of our Common Stock issuable upon conversion of the Series B Preferred Stock and exercise of their associated warrants, subject to customary cutbacks, blackout periods and other exceptions.

Series C Non-Voting, Non-Convertible Preferred Stock

On November 8, 2017, we issued to a single older 100 shares of non-convertible preferred stock, designated as the Series C Non-Voting, Non-Convertible Preferred Stock pursuant to the certificate of designation and rights filed by us with the Secretary of State of the State of Florida, with a stated value and liquidation preference equal to $33,847.9874 per share, which we refer to as the Stated Value. The shares of Series C Non-Voting, Non-Convertible Preferred Stock were entitled to payment-in-kind ("PIK") dividends thereon at the annual rate of twelve percent (12%) (the "Initial Rate") of its Stated Value, payable by issuing additional shares of Series C Non-Voting, Non-Convertible Preferred Stock within thirty days after the end of each calendar year, pro-rata for partial years. During the three months ended March 31, 2021, the Company provided a notice of redemption, to the holder of the Company's Series C Preferred Stock to redeem all outstanding Series C Preferred Stock (which included the dividend of 26.697 shares paid on January 28, 2021 and any accrued dividends due through the redemption date of March 13, 2021). The Series C Preferred Stock redemption amount of approximately $5.6 million was paid on March 15, 2021 and all outstanding shares of Series C Preferred Stock were cancelled.

Series D Preferred Stock-Converted to Common Stock

On July 13, 2018, our board of directors designated 9,364,000 shares of our preferred stock as Series D Convertible Preferred Stock ("Series D Preferred Stock"), which were subsequently issued on July 17, 2018, none of which are currently issued and outstanding. The preferences and rights of the Series D Preferred Stock was set forth in a Certificate of Designation (the "Series D Certificate of Designation"). Pursuant to a transfer agency agreement between us and Continental Stock Transfer & Trust Company, as transfer agent, the Series D Preferred Stock was issued in book-entry form and represented only by one or more global certificates deposited with The Depository Trust

Company, or DTC, and registered in the name of Cede & Co., a nominee of DTC, or as otherwise directed by DTC. Prior to the end of 2018, all of 9,364,000 shares of Series D Preferred Stock had converted to common stock and as such, the Company no longer has any Series D Preferred Stock outstanding.

Registration Rights

Series A Preferred Stock Private Placement. Pursuant to the May 10, 2017 Registration Rights Agreement, we granted certain demand registration rights and piggyback registration rights with respect to the shares of our Common Stock issuable upon conversion of the Series A Preferred Stock and the exercise of the common stock warrants that were issued commensurate with the issuance of the Series A Preferred Stock.

Series B Preferred Stock Private Placement. Pursuant to the November 8, 2017 Amended and Restated Registration Right Agreement, we granted certain demand registration rights and piggyback registration rights with respect to the shares of our Common Stock issuable upon conversion of the Series B Preferred Stock and the exercise of the common stock warrants that were issued commensurate with the issuance of the Series B Preferred Stock.. The Amended and Restated Registration Rights Agreement amended the previous registration rights agreement entered into in connection with our Series A Preferred Stock Financing in May 2017.

The following descriptions are summaries of the material terms that are included in our amended and restated articles of incorporation (as amended) and our bylaws (as amended) as well as the specific agreements such descriptions relate to. This summary is qualified in its entirety by the specific terms and provisions contained in our restated articles of incorporation, bylaws and the specific agreements described herein, copies of which we have filed as exhibits to the registration statement of which this prospectus is a part, and by the provisions of applicable law.

Certain Anti-Takeover Provisions

Florida Law

We are not subject to the statutory anti-takeover provisions under Florida law because in our articles of incorporation we have specifically elected to opt out of both the "control-share acquisitions" (F.S. 607.0902) and the "affiliated transactions" (F.S. 607.0901) statutes. Since these anti-takeover statutes do not apply to a corporation that has specifically elected to opt out of such provisions, we would not be able to invoke the protection of such statutes in the event of a hostile takeover attempt.

Articles of Incorporation and Bylaw Provisions

Our articles of incorporation and bylaws contain provisions that could have an anti-takeover effect. These provisions include

- authorization of the issuance of "blank check" preferred stock that could be issued by our Board of Directors without shareholder approval and that may be substantially dilutive or contain preferences or rights objectionable to an acquiror;
- the ability of the Board of Directors to amend the bylaws without shareholder approval;
- vacancies on our board may only be filled by the remaining Directors and not our shareholders; and
- requirements that only our Board, our President or holders of more than 10% of our shares can call a special meeting of shareholders.

These provisions in our articles of incorporation and bylaws could delay or discourage transactions involving an actual or potential change in control of us, including transactions in which shareholders might otherwise receive a premium for their shares over their current prices. Such provisions could also limit the ability of shareholders to approve transactions that shareholders may deem to be in their best interests and could adversely affect the price of our common stock.

Listing of Common Stock

Our common stock is currently listed on the NYSE American under the trading symbol "OGEN".

Transfer Agent and Registrar

The transfer agent and registrar of our common stock is Continental Stock Transfer & Trust Company, 1 State Street 30th Floor, New York, New York 10004, telephone: (212) 509-4000.

DESCRIPTION OF WARRANTS

The following description, together with the additional information that we include in any applicable prospectus supplement and in any related free writing prospectus that we may authorize to be distributed to you, summarizes the material terms and provisions of the warrants that we may offer under this prospectus, which may be issued in one or more series. Warrants may be offered independently or in combination with other securities offered by any prospectus supplement. While the terms we have summarized below will apply generally to any warrants that we may offer under this prospectus, we will describe the particular terms of any series of warrants in more detail in the applicable prospectus supplement. The following description of warrants will apply to the warrants offered by this prospectus unless we provide otherwise in the applicable prospectus supplement. The applicable prospectus supplement for a particular series of warrants may specify different or additional terms.

Any warrants issued under this prospectus may be evidenced by warrant certificates. Warrants also may be issued under an applicable warrant agreement that we enter into with a warrant agent. We will indicate the name and address of the warrant agent, if applicable, in the prospectus supplement relating to the particular series of warrants being offered.

We will file as exhibits to the registration statement of which this prospectus is a part, or will incorporate by reference from reports that we file with the SEC, the form of warrant and/or the warrant agreement and warrant certificate, as applicable, that contain the terms of the particular series of warrants we are offering, and any supplemental agreements, before the issuance of such warrants. The following description summarizes the material terms and provisions of the warrants and is subject to, and qualified in its entirety by reference to, all the provisions of the form of warrant and/or the warrant agreement and warrant certificate, as applicable, and any supplemental agreements applicable to a particular series of warrants that we may offer under this prospectus. We urge you to read the applicable prospectus supplement related to the particular series of warrants that we may offer under this prospectus, as well as any related free writing prospectuses, and the complete form of warrant and/or the warrant agreement and warrant certificate, as applicable, and any supplemental agreements, that contain the terms of the warrants.

General

We will describe in the applicable prospectus supplement the terms of the series of warrants being offered, including:

- the title of such securities;
- the offering price and aggregate number of warrants offered;

- the currency or currencies for which the warrants may be purchased;
- if applicable, the designation and terms of the securities with which the warrants are issued and the number of warrants issued with each such security or each principal amount of such security;
- if applicable, the date on and after which the warrants and the related securities will be separately transferable;
- if applicable, the minimum or maximum amount of such warrants which may be exercise at any one time;
- in the case of warrants to purchase common stock, the number of shares of common stock, purchasable upon the exercise of one warrant and the price at which, and the currency in which, these shares may be purchased upon such exercise;
- the effect of any merger, consolidation, sale or other disposition of our business on the warrant agreements and the warrants;
- the dates on which the right to exercise the warrants shall commence or expire;
- the terms of any rights to redeem or call the warrants;
- the terms of any rights to force the exercise of the warrants;

- any provisions for changes to or adjustments in the exercise price or number of securities issuable upon exercise of the warrants;
- the dates on which the right to exercise the warrants will commence and expire;
- the manner in which the warrant agreements and warrants may be modified;
- a discussion of any material or special U.S. federal income tax considerations of holding or exercising the warrants;
- the antidilution provisions of the warrant, if any;
- the terms of the securities issuable upon exercise of the warrants; and
- any other specific terms, preferences, rights or limitations of or restrictions on the warrants.

Before exercising their warrants, holders of warrants will not have any of the rights of holders of the securities purchasable upon such exercise, including: in the case of warrants to purchase common stock, the right to receive dividends, if any, or, payments upon our liquidation, dissolution or winding up or to exercise voting rights, if any.

Exercise of Warrants

Each warrant will entitle the holder to purchase the securities that we specify in the applicable prospectus supplement at the exercise price that we describe in the applicable prospectus supplement. The warrants may be exercised as set forth in the prospectus supplement relating to the warrants offered. Unless we otherwise specify in the applicable prospectus supplement, warrants may be exercised at any time up to the close of business on the expiration date set forth in the prospectus supplement relating to the warrants offered thereby. After the close of business on the expiration date, unexercised warrants will become void.

Unless we otherwise specify in the applicable prospectus supplement, holders of the warrants may exercise the warrants by delivering the warrant certificate representing the warrants to be exercised together with specified information, and paying the required amount to the warrant agent in immediately available funds, as provided in the applicable prospectus supplement. We will set forth on the reverse side of the warrant certificate and in the applicable prospectus supplement the information that the holder of the warrant will be required to deliver to the warrant agent in connection with the exercise of the warrant.

Upon receipt of payment and the warrant or warrant certificate, as applicable, properly completed and duly executed at the corporate trust office of the warrant agent, if any, or any other office, including ours, indicated in the prospectus supplement, we will, as soon as practicable, issue and deliver the securities purchasable upon such exercise. If less than all of the warrants (or the warrants represented by such warrant certificate) are exercised, a new warrant or a new warrant certificate, as applicable, will be issued for the remaining warrants.

Governing Law

Unless we otherwise specify in the applicable prospectus supplement, the warrants and any warrant agreements will be governed by and construed in accordance with the laws of the State of New York.

Enforceability of Rights by Holders of Warrants

Each warrant agent, if any, will act solely as our agent under the applicable warrant agreement and will not assume any obligation or relationship of agency or trust with any holder of any warrant. A single bank or trust company may act as warrant agent for more than one issue of warrants. A warrant agent will have no duty or responsibility in case of any default by us under the applicable warrant agreement or warrant, including any duty or responsibility to initiate any proceedings at law or otherwise, or to make any demand upon us. Any holder of a warrant may, without the consent of the related warrant agent or the holder of any other warrant, enforce by appropriate legal action its right to exercise, and receive the securities purchasable upon exercise of, its warrants.

DESCRIPTION OF UNITS

Units

We may issue units consisting of any combination of our common stock and warrants. We will issue each unit so that the holder of the unit is also the holder of each security included in the unit. As a result, the holder of a unit will have the rights and obligations of a holder of each included security. The unit agreement under which a unit is issued may provide that the securities included in the unit may not be held or transferred separately, at any time or at any time before a specified date.

The summary below and that contained in any prospectus supplement is qualified in its entirety by reference to all of the provisions of the unit agreement and/or unit certificate,

and depositary arrangements, if applicable. We urge you to read the applicable prospectus supplements and any related free writing prospectuses related to the units that we may offer under this prospectus, as well as the complete unit agreement and/or unit certificate, and depositary arrangements, as applicable, that contain the terms of the units.

We will file as exhibits to the registration statement of which this prospectus is a part, or will incorporate by reference from reports that we file with the SEC, the form of unit agreement and/or unit certificate, and depositary arrangements, as applicable, that contain the terms of the particular series of units we are offering, and any supplemental agreements, before the issuance of such units.

The applicable prospectus supplement, information incorporated by reference or free writing prospectus may describe:

- the designation and terms of the units and of the securities comprising the units, including whether and under what circumstances those securities may be held or transferred separately;
- any provisions for the issuance, payment, settlement, transfer, or exchange of the units or of the securities composing the units;
- whether the units will be issued in fully registered or global form; and
- any other terms of the units.

The applicable provisions described in this section, as well as those described under "Common Stock" and "Warrants" above, will apply to each unit and to each security included in each unit, respectively

LEGAL OWNERSHIP OF SECURITIES

We can issue securities in registered form or in the form of one or more global securities. We describe global securities in greater detail below. We refer to those persons who have securities registered in their own names on the books that we or any applicable trustee, depositary or warrant agent maintain for this purpose as the "holders" of those securities. These persons are the legal holders of the securities. We refer to those persons who, indirectly through others, own beneficial interests in securities that are not registered in their own names, as "indirect holders" of those securities. As we discuss below, indirect holders are not legal holders, and investors in securities issued in book-entry form or in street name will be indirect holders.

Book-Entry Holders

We may issue securities in book-entry form only, as we will specify in the applicable prospectus supplement. This means securities may be represented by one or more global securities registered in the name of a financial institution that holds them as depositary on behalf of other financial institutions that participate in the depositary's book-entry system. These participating institutions, which are referred to as participants, in turn, hold beneficial interests in the securities on behalf of themselves or their customers.

Only the person in whose name a security is registered is recognized as the holder of that security. Global securities will be registered in the name of the depositary or its participants. Consequently, for global securities, we will recognize only the depositary as the holder of the securities, and we will make all payments on the securities to the depositary. The depositary passes along the payments it receives to its participants, which in turn pass the payments along to their customers who are the beneficial owners. The depositary and its participants do so under agreements they have made with one another or with their customers; they are not obligated to do so under the terms of the securities.

As a result, investors in a global security will not own securities directly. Instead, they will own beneficial interests in a global security, through a bank, broker or other financial institution that participates in the depositary's book-entry system or holds an interest through a participant. As long as the securities are issued in global form, investors will be indirect holders, and not legal holders, of the securities.

Street Name Holders

We may terminate a global security or issue securities that are not issued in global form. In these cases, investors may choose to hold their securities in their own names or in "street name". Securities held by an investor in street name would be registered in the name of a bank, broker or other financial institution that the investor chooses, and the investor would hold only a beneficial interest in those securities through an account he or she maintains at that institution.

For securities held in street name, we or any applicable trustee or depositary will recognize only the intermediary banks, brokers and other financial institutions in whose names the securities are registered as the holders of those securities, and we or any such trustee or depositary will make all payments on those securities to them. These institutions pass along the payments they receive to their customers who are the beneficial owners, but only because they agree to do so in their customer agreements or because they are legally required to do so. Investors who hold securities in street name will be indirect holders, not legal holders, of those securities.

Legal Holders

Our obligations, as well as the obligations of any applicable trustee or third party employed by us or a trustee, run only to the legal holders of the securities. We do not have obligations to investors who hold beneficial interests in global securities, in street name or by any other indirect means. This will be the case whether an investor chooses to be an indirect holder of a security or has no choice because we are issuing the securities only in global form.

For example, once we make a payment or give a notice to the holder, we have no further responsibility for the payment or notice even if that holder is required, under agreements with its participants or customers or by law, to pass it along to the indirect holders but does not do so. Similarly, we may want to obtain the approval of the holders to amend an indenture, to relieve us of the consequences of a default or of our obligation to comply with a particular provision of an indenture, or for other purposes. In such an event, we would seek approval only from the holders, and not the indirect holders, of the securities. Whether and how the legal holders contact the indirect holders is up to the legal holders.

Special Considerations for Indirect Holders

If you hold securities through a bank, broker or other financial institution, either in book-entry form because the securities are represented by one or more global securities or in street name, you should check with your own institution to find out:

- how it handles securities payments and notices;
- whether it imposes fees or charges;
- how it would handle a request for the holders' consent, if ever required;

- whether and how you can instruct it to send you securities registered in your own name so you can be a holder, if that is permitted in the future;
- how it would exercise rights under the securities if there were a default or other event triggering the need for holders to act to protect their interests; and
- if the securities are in book-entry form, how the depositary's rules and procedures will affect these matters.

Global Securities

A global security is a security that represents one or any other number of individual securities held by a depositary. Generally, all securities represented by the same global securities will have the same terms.

Each security issued in book-entry form will be represented by a global security that we issue to, deposit with and register in the name of a financial institution or its nominee that we select. The financial institution that we select for this purpose is called the depositary. Unless we specify otherwise in the applicable prospectus supplement, The Depository Trust Company, New York, New York, known as DTC, will be the depositary for all securities issued in book-entry form.

A global security may not be transferred to or registered in the name of anyone other than the depositary, its nominee or a successor depositary, unless special termination situations arise. We describe those situations below under "—Special Situations When a Global Security Will Be Terminated". As a result of these arrangements, the depositary, or its nominee, will be the sole registered owner and legal holder of all securities represented by a global security, and investors will be permitted to own only beneficial interests in a global security. Beneficial interests must be held by means of an account with a broker, bank or other financial institution that in turn has an account with the depositary or with another institution that does. Thus, an investor whose security is represented by a global security will not be a legal holder of the security, but only an indirect holder of a beneficial interest in the global security.

If the prospectus supplement for a particular security indicates that the security will be issued as a global security, then the security will be represented by a global security at all times unless and until the global security is terminated. If termination occurs, we may issue the securities through another book-entry clearing system or decide that the securities may no longer be held through any book-entry clearing system.

Special Considerations for Global Securities

As an indirect holder, an investor's rights relating to a global security will be governed by the account rules of the investor's financial institution and of the depositary, as well as general laws relating to securities transfers. We do not recognize an indirect holder as a holder of securities and instead deal only with the depositary that holds the global security.

If securities are issued only as global securities, an investor should be aware of the following:

- an investor cannot cause the securities to be registered in his or her name, and cannot obtain non-global certificates for his or her interest in the securities, except in the special situations we describe below;
- an investor will be an indirect holder and must look to his or her own bank or broker for payments on the securities and protection of his or her legal rights relating to the securities, as we describe above;
- an investor may not be able to sell interests in the securities to some insurance companies and to other institutions that are required by law to own their securities in non-book-entry form;
- an investor may not be able to pledge his or her interest in the global security in circumstances where certificates representing the securities must be delivered to the lender or other beneficiary of the pledge in order for the pledge to be effective;
- the depositary's policies, which may change from time to time, will govern payments, transfers, exchanges and other matters relating to an investor's interest in the global security;
- we and any applicable trustee have no responsibility for any aspect of the depositary's actions or for its records of ownership interests in the global security, nor will we or any applicable trustee supervise the depositary in any way;
- the depositary may, and we understand that DTC will, require that those who purchase and sell interests in the global security within its book-entry system use immediately available funds, and your broker or bank may require you to do so as well; and
- financial institutions that participate in the depositary's book-entry system, and through which an investor holds its interest in the global security, may also have their own policies affecting payments, notices and other matters relating to the securities.

There may be more than one financial intermediary in the chain of ownership for an investor. We do not monitor and are not responsible for the actions of any of those intermediaries.

Special Situations When a Global Security Will Be Terminated

In a few special situations described below, a global security will terminate and interests in it will be exchanged for physical certificates representing those interests. After that exchange, the choice of whether to hold securities directly or in street name will be up to the investor. Investors must consult their own banks or brokers to find out how to have their interests in securities transferred to their own names, so that they will be direct holders. We have described the rights of holders and street name investors above.

Unless we provide otherwise in the applicable prospectus supplement, a global security will terminate when the following special situations occur:

- if the depositary notifies us that it is unwilling, unable or no longer qualified to continue as depositary for that global security and we do not appoint another institution to act as depositary within 90 days;
- if we notify any applicable trustee that we wish to terminate that global security; or
- if an event of default has occurred with regard to securities represented by that global security and has not been cured or waived.

The applicable prospectus supplement may also list additional situations for terminating a global security that would apply only to the particular series of securities covered by the prospectus supplement. When a global security terminates, the depositary, and neither we nor any applicable trustee, is responsible for deciding the names of the institutions that will be the initial direct holders.

PLAN OF DISTRIBUTION

We may sell the securities from time to time pursuant to underwritten public offerings, direct sales to the public, direct sales to the public, negotiated transactions, block trades or a combination of these methods. We may sell the securities to or through underwriters or dealers, through one or more agents, or directly to one or more purchasers. We may distribute securities from time to time in one or more transactions:

- at a fixed price or prices, which may be changed;
- at market prices prevailing at the time of sale;
- at prices related to such prevailing market prices;
- at varying prices determined at the time of sale; or
- at negotiated prices.

We may also sell equity securities covered by this registration statement in an "at the market" offering as defined in Rule 415(a)(4) under the Securities Act. Such offering may be made into an existing trading market for such securities in transactions at other than a fixed price on or through the facilities of NYSE American or any other securities exchange or quotation or trading service on which such securities may be listed, quoted or traded at the time of sale. Such at the market offerings, if any, may be conducted by underwriters acting as principal or agent.

A prospectus supplement or (and any related free writing prospectus that we may authorize to be provided to you) will describe the terms of the offering of the securities, including, to the extent applicable:

- the name or names of any underwriters, dealers or agents, if any;
- the purchase price of the securities and the proceeds we will receive from the sale;
- any over-allotment options under which underwriters may purchase additional securities from us;
- any agency fees or underwriting discounts and other items constituting agents' or underwriters' compensation;
- any public offering price;
- any discounts or concessions allowed or reallowed or paid to dealers; and
- any securities exchange or market on which the securities may be listed.

Only the agents or underwriters named in each prospectus supplement will be agents or underwriters in connection with the securities offered by a prospectus supplement.

Offers to purchase the securities being offered by this prospectus may be solicited directly. Agents may also be designated to solicit offers to purchase the securities from time to time. Any agent involved in the offer or sale of our securities will be identified in a prospectus supplement. Unless the prospectus supplement states otherwise, our agent will act on a best-efforts basis for the period of its appointment.

If a dealer is utilized in the sale of the securities being offered by this prospectus, the securities will be sold to the dealer, as principal. The dealer may then resell the securities to the public at varying prices to be determined by the dealer at the time of resale.

If an underwriter is utilized in the sale of the securities being offered by this prospectus, an underwriting agreement will be executed with the underwriter at the time of sale and the name of any underwriter will be provided in the prospectus supplement that the underwriter will use to make resales of the securities to the public. In connection with the sale of the securities, we, or the purchasers of securities for whom the underwriter may act as agent, may compensate the underwriter in the form of underwriting discounts or commissions. The underwriter may sell the securities to or through dealers, and those dealers may receive compensation in the form of discounts, concessions or commissions from the underwriters and/or commissions from the purchasers for which they may act as agent. Unless otherwise indicated in a prospectus supplement, an agent will be acting on a best efforts basis and a dealer will purchase securities as a principal, and may then resell the securities at varying prices to be determined by the dealer.

Any compensation paid to underwriters, dealers or agents in connection with the offering of the securities, and any discounts, concessions or commissions allowed by underwriters to participating dealers will be provided in the applicable prospectus supplement. Underwriters, dealers and agents participating in the distribution of the securities may be deemed to be underwriters within the meaning of the Securities Act, and any discounts and commissions received by them and any profit realized by them on resale of the securities may be deemed to be underwriting discounts and commissions. We may enter into agreements to indemnify underwriters, dealers and agents against civil liabilities, including liabilities under the Securities Act, or to contribute to payments they may be required to make in respect thereof and to reimburse those persons for certain expenses.

Any common stock will be listed on the NYSE American, but any other securities may or may not be listed on a national securities exchange. To facilitate the offering of securities, certain persons participating in the offering may engage in transactions that stabilize, maintain or otherwise affect the price of the securities. This may include over-allotments or short sales of the securities, which involve the sale by persons participating in the offering of more securities than were sold to them. In these circumstances, these persons would cover such over-allotments or short positions by making purchases in the open market or by exercising their over-allotment option, if any. In addition, these persons may stabilize or maintain the price of the securities by bidding for or purchasing securities in the open market or by imposing penalty bids, whereby selling concessions allowed to dealers participating in the offering may be reclaimed if securities sold by them are repurchased in connection with stabilization transactions. The effect of these transactions may be to stabilize or maintain the market price of the securities at a level above that which might otherwise prevail in the open market. These transactions may be discontinued at any time.

We may authorize underwriters, dealers or other persons acting as our agents to solicit offers by certain institutions or other suitable purchasers to purchase securities from us at the public offering price set forth in the prospectus supplement, pursuant to delayed delivery contracts providing for payment and delivery on the date stated in each applicable prospectus supplement. Each contract will be for an amount not less than, and the aggregate amount of securities sold pursuant to such contracts shall not be less nor more than, the respective amounts stated in each applicable prospectus supplement. Institutions with whom the contracts, when authorized, may be made include commercial and savings banks, insurance companies, pension funds, investment companies, educational and charitable institutions and other institutions, but shall in all cases be subject to our approval.

Delayed delivery contracts will be subject only to those conditions set forth in each applicable prospectus supplement and include the condition that the purchase of the securities covered by the delayed delivery contracts will not at the time of delivery be prohibited under the laws of any jurisdiction in the United States to which the purchaser is subject. Each prospectus supplement will set forth any commissions we pay for solicitation of these contracts. The underwriters and agents will not have any responsibility with respect to the validity or performance of these contracts.

All securities we may offer, other than common stock, will be new issues of securities with no established trading market. Any agents or underwriters may make a market in these securities, but will not be obligated to do so and may discontinue any market making at any time without notice. We cannot guarantee the liquidity of the trading markets for any securities. There is currently no market for any of the offered securities, other than our common stock which is listed on the on the NYSE American. Any common stock will be listed on the NYSE American but any other securities may or may not be listed on a national securities exchange. We have no current plans for listing of the, warrants on any securities exchange or quotation system; any such listing with respect to any particular warrants will be described in the applicable prospectus supplement or other offering materials, as the case may be.

Any agents and underwriters who are qualified market makers on the NYSE American may engage in passive market making transactions in the securities on the NYSE American in accordance with Regulation M, during the business day prior to the pricing of the offering, before the commencement of offers or sales of the securities. Passive market makers must comply with applicable volume and price limitations and must be identified as passive market makers. In general, a passive market maker must display its bid at a price not in excess of the highest independent bid for such security; if all independent bids are lowered below the passive market maker's bid, however, the passive market maker's bid must then be lowered when certain purchase limits are exceeded. Passive market making may stabilize the market price of the securities at a level above that which might otherwise prevail in the open market and, if commenced, may be discontinued at any time.

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

The specific terms of any lock-up provisions in respect of any given offering will be described in the applicable prospectus supplement.

The underwriters, dealers and agents may engage in transactions with us, or perform services for us, in the ordinary course of business for which they receive compensation.

In compliance with guidelines of the Financial Industry Regulatory Authority, Inc., or FINRA, the maximum compensation to be received by any FINRA member or independent broker dealer may not exceed 8% of the aggregate amount of the securities offered pursuant to this prospectus and any applicable prospectus supplement.

LEGAL MATTERS

Unless otherwise indicated in the applicable prospectus supplement, certain legal matters in connection with the offering and the validity of the securities offered by this prospectus, and any supplement thereto, will be passed upon for us by Shumaker, Loop & Kendrick, LLP. Additional legal matters may be passed upon for us or any underwriters, dealers or agents, by counsel that we will name in the applicable prospectus supplement.

EXPERTS

The audited financial statements of Oragenics, Inc. as of December 31, 2021 and 2020, and for the years ended December 31, 2021 and 2020, as set forth in its report included in our Annual Report on Form 10-K for the year ended December 31, 2021, incorporated by reference in this prospectus have been audited by Mayer Hoffman McCann P.C., an independent registered public accounting firm, as stated in their report dated March 24, 2022, which is incorporated by reference herein, and has been so incorporated in reliance upon the report of such firm given upon their authority as experts in accounting and auditing.

WHERE YOU CAN FIND ADDITIONAL INFORMATION

This prospectus is part of a registration statement we filed with the SEC. This prospectus does not contain all of the information set forth in the registration statement and the exhibits to the registration statement. For further information with respect to us and the securities we are offering under this prospectus, we refer you to the registration statement and the exhibits and schedules filed as a part of the registration statement. You should rely only on the information contained in this prospectus or incorporated by reference in this prospectus. We have not authorized anyone else to provide you with different information. We are not making an offer of these securities in any state where the offer is not permitted. You should not assume that the information in this prospectus is accurate as of any date other than the date on the front page of this prospectus, regardless of the time of delivery of this prospectus or any sale of the securities offered by this prospectus.

We file annual, quarterly and current reports, proxy statements and other information with the SEC. Our SEC filings are available to the public at the SEC's website at *http://www.sec.gov*.

Copies of certain information filed by us with the SEC are also available on our website at*www.Oragenics.com* Information contained in or accessible through our website does not constitute a part of this prospectus and is not incorporated by reference in this prospectus. We have included our website address as an inactive textual reference only.

INCORPORATION OF CERTAIN DOCUMENTS BY REFERENCE

The SEC allows us to incorporate by reference the information we file with it, which means that we can disclose important information to you by referring you to another document that we have filed separately with the SEC. You should read the information incorporated by reference because it is an important part of this prospectus. We incorporate by reference the following information or documents that we have filed with the SEC, excluding any portions of any Current Report on Form 8-K that are not deemed "filed" pursuant to the General Instructions of Form 8-K:

- Our Annual Report on Form 10-K for the year ended December 31, 2021, filed with the SEC on March 24, 2022 and our Form 10-K/A for the year ended December 31, 2021, filed with the SEC on July 29, 2022;

- Our Quarterly Reports on Form 10-Q for the quarter ended March 31, 2022, filed with the SEC on May 13, 2022, for the quarter ended June 30, 2022 filed with the SEC on August 9, 2022 and for the quarter ended September 30, 2022 filed with the SEC on November 14, 2022;

- Our Definitive Proxy Statement on Schedule 14A, filed with the SEC on October 31, 2022;

- Our Current Reports on Form 8-K, filed January 26, 2022, February 28, 2022, March 10, 2022, April 6, 2022, April 19, 2022, May 17, 2022, June 23, 2022, July 8, 2022, August 3, 2022, August 24, 2022, September 30, 2022, October 3, 2022, November 16, 2022, December 15, 2022, December 19, 2022, December 20, 2022, December 22, 2022 and December 23, 2022;

- The description of our common stock set forth in our registration statement on Form 8-A12B, filed April 8, 2013, including any amendments or reports filed for purposes of updating such description.

Any information in any of the foregoing documents will automatically be deemed to be modified or superseded to the extent that information in this prospectus or in a later filed document that is incorporated or deemed to be incorporated herein by reference modifies or replaces such information.

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

We will provide to each person, including any beneficial owner, to whom a prospectus is delivered, without charge upon written or oral request, a copy of any or all of the documents that are incorporated by reference into this prospectus but not delivered with the prospectus, including exhibits which are specifically incorporated by reference into such documents. You may request a copy of these filings at no cost, by writing to or telephoning us at the following address: Oragenics, Inc., 1990 Main St Suite 750 Sarasota, Florida 34236, Attention: Corporate Secretary.

Any statement contained in this prospectus or contained in a document incorporated or deemed to be incorporated by reference into this prospectus will be deemed to be modified or superseded to the extent that a statement contained in this prospectus or any subsequently filed supplement to this prospectus, or document deemed to be incorporated by reference into this prospectus, modifies or supersedes such statement.

Up to $10,000,000 Shares of Common Stock

PROSPECTUS SUPPLEMENT

Dawson James Securities, Inc.

October 11, 2024