Table of Contents

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

FORM 10-K

(Mark One)

x **ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the fiscal year ended December 31, 2022

OR

o **TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the transition period from to

Commission file number: 001-37941

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

Delaware	**20-2079805**
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification No.)
23460 N. 19th Ave, Suite 110 Phoenix, AZ	**85027**
(Address of principal executive offices)	(Zip Code)

(928) 779-4143
(Registrant's telephone number, including area code)

(Former name, former address and former fiscal year, if changed since last report)

Securities registered pursuant to Section 12(b) of the Act:

Title of each class	**Trading symbol**	**Name of each exchange on which registered**
Common Stock, $0.001 par value	SNES	The Nasdaq Stock Market LLC (Nasdaq Capital Market)

Securities registered pursuant to Section 12(g) of the Act:
NONE

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes o No x

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or 15(d) of the Act. Yes o No x

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes x No o

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§ 232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). Yes x No o

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

Large accelerated filer	o	Accelerated filer	o	Non-accelerated filer	x	Smaller reporting company	x	Emerging growth company	o

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. o

Indicate by check mark whether the registrant has filed a report on and attestation to its management's assessment of the effectiveness of its internal control over financial reporting under Section 404(b) of the Sarbanes-Oxley Act (15 U.S.C. 7262(b)) by the registered public accounting firm that prepared or issued its audit report. o

If securities are registered pursuant to Section 12(b) of the Act, indicate by check mark whether the financial statements of the registrant included in the filing reflect the correction of an error to previously issued financial statements. o

Indicate by check mark whether any of those error corrections are restatements that required a recovery analysis of incentive-based compensation received by any of the registrant's executive officers during the relevant recovery period pursuant to §240.10D-1b. o

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Act). Yes o No x

The aggregate market value of the registrant's common stock held by non-affiliates on June 30, 2022 (the last business day of the registrant's most recently completed second fiscal quarter) as reported by the Nasdaq Capital Market on such date was approximately $6,442,000. There were 610,648 shares of the registrant's common stock outstanding on June 30, 2022.

As of March 15, 2023, there were 2,052,873 shares of common stock outstanding.

Documents Incorporated by Reference

Portions of the registrant's definitive proxy statement for the 2023 Annual Meeting of Stockholders are incorporated by reference into Part III of this Form 10-K.

SENESTECH, INC.
FORM 10-K
FOR THE YEAR ENDED DECEMBER 31, 2022

TABLE OF CONTENTS

Definitions

The abbreviations or acronym defined below are used throughout this form 10-K:

Abbreviation or Acronym	Definition
ASC	Accounting Standards Codification
CARES Act	Coronavirus Aid, Relief, and Economic Security Act
COVID-19	Coronavirus
EPA	Environmental Protection Agency
FCPA	Foreign Corrupt Practices Act
FIFRA	Federal Insecticide Fungicide and Rodenticide Act]
GAAP	Generally accepted accounting principles
GRAS	Generally recognized as safe
IPM	Integrated pest management
IRC	Internal Revenue Code
Nasdaq	Nasdaq Capital Market
PCAOB	Public Company Accounting Oversight Board
PMP	Pest Management Provider
PPP	Paycheck Protection Program
ROU	Right-of-use
RUP	Restricted use product
SEC	Securities and Exchange Commission
VCD	Vinylcyclohexene diepoxide

CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS

The statements contained in this Annual Report on Form 10-K that are not historical are forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended, or the Exchange Act. All statements other than statements of historical facts contained or incorporated herein by reference in this Annual Report on Form 10-K, including statements regarding our future operating results, future financial position, business strategy, objectives, goals, plans, prospects, markets, and plans and objectives for future operations, are forward-looking statements. In some cases, you can identify forward-looking statements by terms such as “anticipates,” “believes,” “estimates,” “expects,” “intends,” “suggests,” “targets,” “contemplates,” “projects,” “predicts,” “may,” “might,” “plan,” “would,” “should,” “could,” “can,” “potential,” “continue,” “objective,” or the negative of those terms, or similar expressions intended to identify forward-looking statements. However, not all forward-looking statements contain these identifying words. Specific forward-looking statements in this Annual Report on Form 10-K include statements regarding:

- our belief the most effective, long-term way to manage rats is by using a combination of tools that work together to magnify the efficacy of the pest management protocol; integrated pest management (“IPM”) is based upon this concept;
- our belief that our field research indicates the addition of ContraPest to an IPM program has demonstrated improved efficacy of more than 90% with sustained population suppression;
- our belief that we can achieve our goal for ContraPest fertility control to be standard tool utilized in pest management in IPM programs across all verticals;
- our belief that maintaining a ContraPest program reduces the reproduction and therefore the risk of future population spikes of rodent populations, known as the rebound effect;
- our belief that the size of the rat control market is sufficient for our near-term focus;
- our belief that there is nothing else like ContraPest on the market;
- our belief that first and second generation anti-coagulants will come under increased scrutiny for bioaccumulation and impact on non-target species as they travel up the food chain and their use is being restricted or banned in select areas across the United States and globally;
- our belief that the current market environment creates opportunity for accelerating adoption of ContraPest as industry professional are looking for effective tools to serve their customers and gain control of rat populations;
- our belief that the pest industry in the United States has demonstrated a reluctance to adopt new technologies;
- our belief that three core sales channels drive revenue allowing SenesTech to reach a wider customer base and target different segments of the market;
- our belief that because ContraPest is not a retail product, e-commerce provides a hub to push end-users for further education as well as providing 24/7 availability for purchasing products and managing subscriptions;
- our belief that field sales allow for personal interaction, consultation, and development of potential customers;
- our belief that distributors and resellers increase our reach by leveraging the established networks and connections of third-party businesses;
- our belief that the logistics and marketing support offered through distributors and resellers reduces cost and effort required to expand our sales;
- our belief that ContraPest consumption should not cause rats to become ill or change their behavior, which reduces risks of non-target species exposure;
- our belief that a certain non-registered product being sold online that claims to control rodent reproduction is not a competitive product;

- our plan to attempt to accelerate the reformulation process through partnerships with others in the industry that will be able to give us access to proven technologies, thus reducing potential development time;
- the exclusive patent license with the University of Arizona for background intellectual property that we plan to employ for future product development in the domestic animal fertility control market;
- our plan to continue to utilize various forms of stock-based awards to hire, retain, and motivate talented employees consultants, and directors;
- our expectation that our expenses will continue or increase in connection with our ongoing activities, particularly as we focus on marketing and sales of ContraPest;
- our ability to maintain and obtain regulatory approval for our product and product candidates;
- our ability to gain market acceptance, commercial viability and profitability of ContraPest and other products;
- our ability to market our products and establish an effective sales force and marketing infrastructure to generate significant revenue;
- the success of our research and development;
- our ability to retain and attract key personnel to develop, operate, and grow our business;
- our ability to meet our working capital needs;
- our estimates or expectations related to our revenue, cash flow, expenses, capital requirements and need for additional financing;
- our plans for our business, including for research and development;
- our belief the claims against us do not have merit and our intention to aggressively defend against these accusations;
- our belief the litigation against us is not likely to have a material effect on our operations;
- our financial performance, including our ability to fund operations;
- developments and projections relating to our projects, competitors and our industry, including legislative developments and impacts from those developments; and
- other risks and uncertainties, including those described or incorporated by reference under the caption “Risk Factors” in this Annual Report on Form 10-K.

These forward-looking statements are not guarantees of future performance and involve known and unknown risks, uncertainties and situations that are difficult to predict and that may cause our own, or our industry’s, actual results to be materially different from the future results that are expressed or implied by these statements. Accordingly, actual results may differ materially from those anticipated or expressed in such statements as a result of a variety of factors, including those discussed in Item 1A-“Risk Factors” of Part II of in this Annual Report on Form 10-K. A number of factors could cause our actual results to differ materially from those indicated by the forward-looking statements. Such factors include, among others, the following:

- the impacts and implications of the COVID-19 pandemic;
- the successful commercialization of our products;
- market acceptance of our products; and
- regulatory approval and regulation of our products and other factors and risks identified from time to time in our filings with the Securities and Exchange Commission, including this Annual Report on Form 10-K.

All forward-looking statements included herein are based on information available to us as of the date hereof and speak only as of such date. Except as required by law, we undertake no obligation to update any forward-looking statements to

reflect events or circumstances after the date of such statements. The forward-looking statements contained in or incorporated by reference into this Annual Report on Form 10-K reflect our views as of the date of this Annual Report on Form 10-K about future events and are subject to risks, uncertainties, assumptions, and changes in circumstances that may cause our actual results, performance, or achievements to differ significantly from those expressed or implied in any forward-looking statement. Although we believe that the expectations reflected in the forward-looking statements are reasonable, we cannot guarantee future events, results, performance, or achievements.

We are subject to the information requirements of the Exchange Act, and we file or furnish reports, proxy statements and other information with the Securities and Exchange Commission, or the SEC. Such reports and other information we file with the SEC are available free of charge at www.senestech.com as soon as practicable after such reports are available on the SEC's website at www.sec.gov. The SEC's website contains reports, proxy and information statements, and other information regarding issuers that file electronically with the SEC.

PART I

ITEM 1. BUSINESS.

Overview

We have developed and are commercializing a global, proprietary technology for managing animal pest populations, initially rat populations, through fertility control.

As far back as we can trace, rats have been foe to mankind. Posing threats to human and animal health, food security, and infrastructure around the world, we have spent centuries trying to solve the problem. Rats carry or can spread at least 35 diseases, globally posing a dangerous risk to public health and safety and protein production. Through consumption and contamination, rats destroy at least 20% of the global stored food supply every year. Additionally, rats cause over $27 billion in damage to public and private infrastructure annually in the United States alone by burrowing beneath foundations and gnawing on electrical wiring, insulation, fire proofing systems, electronics and computer equipment.

Over the centuries, the most prevalent response to rat infestations has been to try to eliminate them through the use of lethal tools such as traps and rodenticides. However, there are growing concerns about secondary exposure and bioaccumulation of rodenticides through documentation of rats becoming resistant to their lethal effects or learning to avoid them altogether. While some of these challenges are new, the efficacy of the response to rat infestations has always been limited by the rat's extraordinary reproduction.

ContraPest®, our initial product, is novel liquid bait in the pest control industry. ContraPest targets the reproductive systems of both male and female Norway and roof rats, which can lead to sustained reductions of the rat population.

ContraPest is a liquid bait containing the active ingredients 4-vinylcyclohexene diepoxide ("VCD") and triptolide. ContraPest limits the reproduction of male and female rats beginning with the first breeding cycle following consumption. Accordingly, it offers a new tool used in coordination with rodenticides as part of an integrated pest management program, or an alternative to traditional rodenticides altogether. It is an important option in the increasing number of jurisdictions that are restricting the use of second-generation anti-coagulant products.

The registration process with the United States Environmental Protection Agency (the "EPA") for ContraPest began on August 23, 2015. On August 2, 2016, the EPA granted an unconditional registration for ContraPest as a Restricted Use Product ("RUP"), due to the need for applicator expertise for deployment. On October 18, 2018, the EPA approved the removal of the RUP designation and was reclassified as a general-use pesticide. ContraPest is registered in all 50 states, 49 of which have approved the removal of the RUP designation, as well as the District of Columbia and five major U.S. territories. In certain cases, our registrations are conditional and require completion of testing. We continue to actively seek to comply with these requirements. On March 10, 2022, the EPA granted a sub-label for ContraPest allowing for an alternative delivery system in a hanging bait station designed to target roof rat habitats and infestations, currently marketed as Elevate Bait™.

We are continuously enhancing ContraPest to align with the unique needs and environments of our customers in our target verticals while simultaneously pursuing regulatory approvals and amendments to the existing U.S. registration to broaden its use and marketability. When regulatory and financial conditions permit, we will seek regulatory approval for additional jurisdictions beyond the United States.

We were incorporated in the state of Nevada in July 2004. On November 12, 2015, we subsequently reincorporated in the state of Delaware. Our corporate headquarters and manufacturing site are in Phoenix, Arizona. On December 8, 2016, we went public and are currently traded on the Nasdaq Capital Market ("Nasdaq") under the symbol SNES.

In November 2022, we amended our amended and restated certificate of incorporation to effect a 1-for-20 reverse split of our issued and outstanding shares of common stock. The accompanying financial statements and notes thereto give retrospective effect to the reverse stock split for all periods presented. All issued and outstanding common stock, options and warrants exercisable for common stock, restricted stock units, and per share amounts contained in our financial statements have been retrospectively adjusted.

Current Challenges in Pest Control Methodologies

Two base rats, a male and female, can produce 15,000 descendants in approximately 12 months. Lethal control measures such as traps and rodenticides are often at the forefront of rat control programs, but this reproduction rate, intelligence, and genetic resistance to the active ingredients in rodenticides can negatively impact results of traditional mitigation efforts.

Rats reach sexual maturity at approximately nine weeks of age. Females can give birth to six litters per year, an average of five to ten offspring each. This rapid reproduction rate can cause populations to rebound quickly after implementing a lethal control program.

Rat behavior, either learned or innate, can negatively affect pest control efforts. Neophobia, or the fear and avoidance of new objects, is an innate behavior that often impacts control efforts. Rats avoid bait stations, loose bait, or traps until they are confident that these new objects pose no danger. Over time rats will begin to sample new foods to determine if there are any negative side effects. If the food or rodenticide causes illness in rats but they do not die, they will avoid that food or rodenticide in the future.

Resistance to traditional rodenticides creates challenges for rodent control programs. Rats are hard-wired to survive and some rats may develop a genetic mutation making them resistant to certain rodenticides. Studies show that resistance is increasing in rat species. This resistance is passed onto their offspring who will then carry this resistant trait into future generations.

Because of the above factors, traditional rodenticide producers are continually challenged to develop new, more lethal chemicals to control future rat populations.

Rodenticides may affect other species within the food chain. It has been reported that animals that prey on rats such as raptors and large cats, have significant levels of rodenticide present in their bodies due to persistence of the rodenticide in the rat tissue. Additionally, there is growing concern about the rise in reported cases of adverse effects that rodenticides have on children and pets due to accidental, and direct exposure.

In November 2022, the EPA released an update to its Endangered Species Act workplan which intends to expand the mitigation efforts for 90 species potentially affected by rodenticides. The EPA will perform biological evaluations to analyze the potential effects of the rodenticides on listed species and their designated critical habitats and will identify mitigation measures for these species and critical habitats to avoid or minimize exposure from the rodenticides. When the plan is described, they will consider it the Rodenticide Strategy.

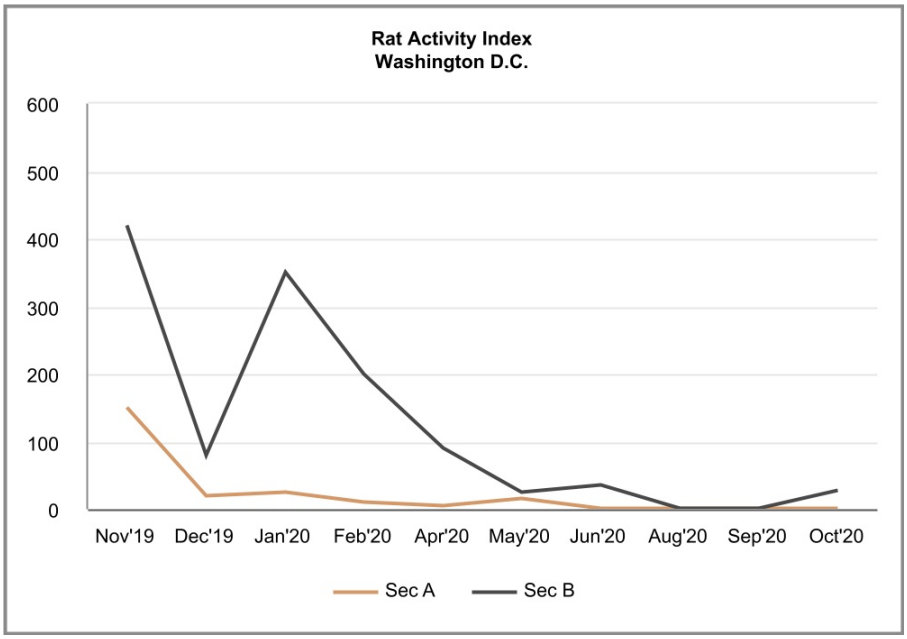
A portion of the draft plan includes a focus on addressing effects to primary consumers of rodenticide bait (mammals and birds) and to secondary consumers that consume primary consumers (mammals, birds, and reptiles). These changes to the EPA's review and registration policies could affect filings with the agency due to expanded test requirements for mammals, birds, reptiles, and critical habitats. Even though ContraPest is not a traditional rodenticide, these requirements (or a subset) may impact our registration in the future since it is classified in the rodenticide category with the EPA. We will maintain close contact with the EPA as their final draft of this policy is due November 2023 with an intended final biological evaluation due November 2024.

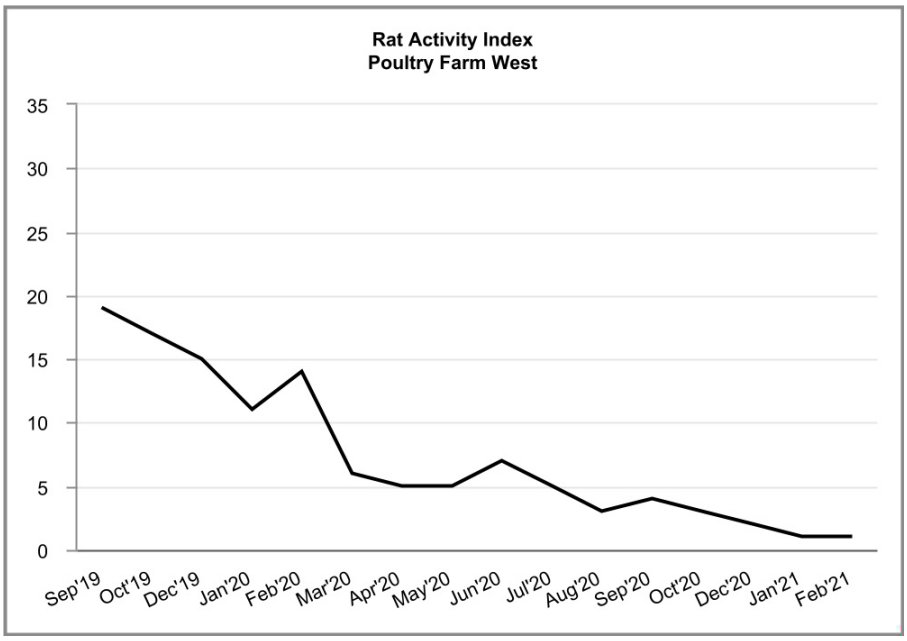
Integrated Pest Management and Fertility Control

The most effective, long-term way to manage rats is by using a combination of tools that work together to magnify the efficacy of the pest management protocol; IPM is based upon this concept. An effective IPM program needs to reduce the existing rat population while preventing the population from rebounding. Based on company field research, the addition of ContraPest to an IPM program has demonstrated improved efficacy of more than 90% with sustained population suppression. Maintaining a ContraPest program reduces the reproduction and therefore the risk of future population spikes, known as the rebound effect.

Ongoing monitoring of the program locations has indicated that there has been no rebound in the rodent population from the current low levels.

ContraPest is a highly palatable liquid formulation that reduces fertility in both male and female rats. Rats require 10% of their body weight in water per day.The high-fat content and sweet taste of ContraPest promotes sustained consumption even when other sought-after food sources are present. In both field and laboratory settings, consumption of ContraPest occurs even in the presence of abundant water sources and plentiful food choices, including animal feed, trash and other options. Additionally, ContraPest does not cause illness in rats, and therefore, it does not change behavior or result in bait aversion.





(source: company studies)

Other Applications

While our proprietary technology is effective on rat species, our technology can be applied to other mammalian species. We have explored and continue to evaluate fertility control in mice, feral dogs, and other species. This preliminary data indicates potential for the continued development of fertility control technology in general. We believe that the size of the rat control market is sufficient for our near-term focus. We remain open to the potential to license our technology to other strategic partners to explore its applicability to other mammalian species.

Business Strategy

Our goal is for ContraPest fertility control to be a standard tool utilized in pest management in IPM programs across all verticals. We will achieve this through the following:

End User Awareness and Adoption.

Our focus is educating end users on the rapid reproduction rate of rats, drawing attention to the complex issue of gaining control of an infestation if you do not have control of rat fertility. As more rodenticides come to market to address rat populations, attention will be drawn to the impact other rodenticides may have to other species due to bioaccumulation, and the benefit of ContraPest having a low potential for bioaccumulation.

Tailored Value Propositions.

While the desire to achieve and maintain control of rat populations is universal among end users, each vertical has a specific pain point and therefore inherent value may be achieved through the use of ContraPest. By working with our existing customers and conducting field research, we are understanding and leveraging these unique opportunities in our sales strategies across verticals. Our value statements include, but are not limited to the following:

- Product Development. The needs of customers in each vertical vary due to environment and limitations, requiring ongoing innovation, exploration of additional species, and the pursuit of additional regulatory approvals for ContraPest both in the United States and globally.

- Strategic Partnerships. Alignment with industry leaders and organizations accelerate awareness, adoption, product innovation and development.

- Efficiencies. Through securing more reliable, affordable suppliers for our raw materials, and continuous development of our manufacturing process, we will be able to increase profits while scaling to meet rising product demand, and production of additional registered products.

Marketing and Sales Approach

ContraPest is differentiated in what is otherwise a very crowded rodenticide market. It is the only product registered with the EPA that restricts fertility in both male and female rats and is designed to be non-lethal. As first and second generation anti-coagulants come under increased scrutiny for bioaccumulation and impact on non-target species as they travel up the food chain, their use is being restricted or even banned in select areas across the United States and globally. These increasing restrictions and bans create an opportunity for ContraPest, as industry professionals are looking for effective tools to serve their customers and gain control of rat populations through nontraditional means.

Because the pest industry in the United States has demonstrated a reluctance to adopt new technologies, the marketing of ContraPest has primarily been aimed at end-user awareness, creating pull through demand with Pest Management Providers (“PMP”) by applying pressure for PMPs to use ContraPest as part of their IPM. Additionally, within our target verticals, agribusiness, commercial, distributors, e-commerce, pest management, municipalities, and zoos and sanctuaries, many large targets employ internal pest management teams as opposed to contracting with service providers. For these reasons, the end-user is our primary target in order to grow market penetration for ContraPest. While pain points and benefits are unique to each vertical, they have shared core value propositions.

- ContraPest is effective. Lab tests and field research demonstrate more than 90% reduction in rat populations when added to an IPM with sustained population suppression;
- Our proprietary, patent-protected formulation and gravity feeding system optimizes consumption and provides targeted delivery for maximum efficacy;
- ContraPest is specifically designed to minimize exposure hazard for handlers and non-targeted species such as wildlife, livestock, and pets; and
- ContraPest can be used as an anchor or enhancement for an IPM program, or as a stand-alone solution to decrease reliance on lethal control options.

Three core sales channels drive revenue allowing SenesTech to reach a wider customer base and target different segments of the market.

- e-Commerce. Because ContraPest is not a retail product, e-commerce provides a hub to push end-users for further education as well as providing 24/7 availability for purchasing products and managing subscriptions.
- Field Sales. Field sales allows for personal interaction, consultation, and development of potential customers. Field sales representatives, in charge of regional territories across the United States, focus in the larger account segments, attending trade shows and educational opportunities within target verticals.
- Distributors and resellers. Distributors and resellers serve as an expansion of our sales team, increasing our reach by leveraging the established networks and connections of these third-party businesses. Additionally, the logistics and marketing support offered through these partners reduces cost and effort required to expand our sales.

Our current focus is successful commercialization of ContraPest in the United States. Aware of the global need for effective rat fertility control, we evaluate requests and inquiries for licensing and manufacturing ContraPest in other regions on a regular basis. There is a sustained focus on building strategic partnerships now for future globalization of ContraPest.

Raw Materials and Manufacturing Process

ContraPest contains two active ingredients, VCD, an industrial chemical, and Triptolide, a plant derived chemical. ContraPest also contains several other inactive, generally recognized as safe (“GRAS”), ingredients. Currently, we source VCD from standard industrial chemical supply providers. Triptolide is derived from the Thunder god vine, Tripterygium wilfordii, which is commonly cultivated and harvested wild in southeastern China and other Asian countries. Triptolide is available from a variety of sources, but the process to purify triptolide for use in ContraPest is expensive. Thus, we are investigating other, less costly sources of triptolide.

Our manufacturing process involves the incorporation of our two active ingredients, in low concentrations, into several inactive ingredients. Once incorporated, the entire product goes through a proprietary process in order to stabilize the final formulation. This process allows ContraPest to be delivered to rats in a palatable, effective manner, and it is designed to be non-lethal.

Currently, we have production scale capability in our facilities in Arizona to manufacture ContraPest. Our internal production capabilities allow us to meet our current and anticipated demand through 2023 for ContraPest.

Scientific Background Regarding our Product

Female rats are born with a finite number of eggs, or oocytes, and remain fertile until death. Within the ovary, eggs develop within structures called follicles. The non-regenerating and least mature follicles are called primordial. The primordial follicles mature through primary, secondary and antral stages and ultimately ovulate. Once the primordial follicles have become depleted, ovarian failure occurs, which terminates reproductive capability. VCD causes specific loss of small ovarian follicles (both primordial and primary). Triptolide causes specific loss of growing follicles (secondary and antral). In males, triptolide exerts a significant suppression of male fertility by preventing sperm maturation and impairing the movement of sperm.

The safety and efficacy of VCD, triptolide, and ContraPest are supported by considerable evidence. VCD and triptolide are rapidly metabolized by the rat, limiting the possibility of bioaccumulation or effect on non-target species. Further, based on our toxicology studies, ContraPest should not cause rats to become ill, or change their behavior.

Furthermore, ContraPest is a contraceptive, not a sterilant, limiting fertility in male and female rats beginning with the first breeding cycle following consumption. The average duration of infertility post consumption ranges from 77 to over 180 days.

Other Potential Products

We have begun work on new formulations of ContraPest – particularly solid and semi-solid variants. Although solid bait is not essential to our near-term plans, the non-liquid formulations may expand the potential uses and applications of ContraPest. Our plan is to accelerate the reformulation process through partnerships with others in the industry that will be able to give us access to proven technologies, thus reducing potential development time.

Competition

Currently, we are unaware of any other non-lethal fertility control products targeting rats that are registered by the EPA. There is a non-registered product being sold online that claims to control rodent reproduction. We do not believe this to be a competitive product.

Our principal competition is the substitution of other tools that PMPs use in their IPM.

Government Regulation and Product Approval

Federal, state and local government authorities in the United States regulate, among other things, the testing, manufacturing, quality control, approval, labeling, packaging, storage, record-keeping, distribution and marketing of the products we develop. The process for obtaining regulatory approval and compliance with appropriate federal, state and local regulations is rigorous and requires the expenditure of substantial time and financial resources.

United States Review and Approval Processes

In the United States, the EPA regulates the sale, distribution and use of any pesticide under the Federal Insecticide, Fungicide and Rodenticide Act (“FIFRA”). The EPA’s definition of a pesticide includes “any substance or mixture of substances intended for preventing, destroying, repelling, or mitigating any pest.” FIFRA defines a pest as “any insect, rodent, nematode, fungus, or weed.” To register a new product with the EPA, all active ingredients within the product must be registered with the EPA.

The EPA granted registration for ContraPest effective August 2, 2016. This initial EPA approval labeled ContraPest as a restricted-use product, due to the need for applicator expertise for deployment. On October 18, 2018, the EPA removed the Restricted Use designation, meaning that we can sell ContraPest to consumers who do not have applicator expertise. ContraPest is currently limited by EPA requirements to indoor use and to use within one foot of manmade structures. We intend to diligently pursue additional related regulatory approvals from the EPA to support our product evolution, including

seeking approval for full outdoor use, alternative formulations and for additional rodent species. This may entail the need to complete and submit to EPA additional studies, principally related to the effects on other animals and fish if ingested or if the product enters the water supply.

In addition to the EPA registration of ContraPest in the United States, we must obtain registration from the various state regulatory agencies prior to selling in each state. To date, we have received registration for ContraPest in all 50 states and the District of Columbia, 49 of which have approved the removal of the Restricted Use designation.

In addition to product registration, the EPA also approves all labeling (the container label, instructional inserts, and the Safety Data Sheet) of ContraPest. Generally, states accept the EPA approved label as is. ContraPest's labeling was submitted to states at initial registration and is resubmitted during state scheduled reregistration or for any significant labeling change requiring EPA approval.

In certain cases, our EPA and state registrations require completion of testing and certifications even after we have received approval for the product or its labeling. We continue to seek to comply with these requirements.

International Review and Approval Processes

We are researching potential international markets and will evaluate the regulatory landscapes of each prospective market. Country-specific regulatory laws have provisions that include requirements for certain labeling, safety, efficacy and manufacturers' quality control procedures to assure the consistency of the product, as well as company records and reports. Some specific in-country studies will be required for particular countries, but others will generally accept an EPA or EU compliant dossier.

Personnel

As of December 31, 2022, we had 29 full-time employees and one part-time employee. Within our workforce, eight employees are engaged in research and development and 21 employees are engaged in sales, business development, finance, regulatory, human resources, facilities, information technology and general management and administration.

None of our employees are represented by labor unions or covered by collective bargaining agreements.

Intellectual Property and Other Proprietary Rights

Maintaining a strong position in the rodenticide market requires constant innovation along with a healthy research program to evolve product lines to remain competitive and relevant to the needs of the changing global marketplace. We seek to protect our proprietary data and trade secrets with attention to data exchanges among employees, consultants, collaborators and research and trade partners.

Patent Filings

Our intellectual property portfolio supporting ContraPest consists of nine international patent filings (in the United States, Europe, Canada, Brazil, Russia, Japan, Mexico, South Korea, and Australia) addressing the ContraPest compound. Claims directed toward the compound include composition-of-matter involving a diterpenoid epoxide or salts thereof in combination with an organic diepoxide, use claims for inducing follicle depletion and for reducing the reproductive capability of a mammalian animal or non-human mammalian population. Issued claims will have a patent term extending to 2033 or longer based on patent term determinations in each of the filing countries. The novelty of ContraPest extends to its method of field distribution and has required innovation to perfect the dosing of our product to rodents. We have filed U.S. and international patent applications covering our novel bait station device to effectively and efficiently deliver our rodent bait at individual bait sites that would, if issued, offer patent term protection through at least 2036.

License Agreements

We have an exclusive patent license with the University of Arizona for background intellectual property that we plan to employ for future product development in the domestic animal fertility control market. The patent claims in the United States, Australia and New Zealand cover the use of 4-vinylcyclohexene diepoxide to deplete ovarian follicles in individual mammals and mammal populations. The license agreement, signed in 2005, will terminate with the last-to-expire patent claims, which have a term extending to 2026.

Trade Secrets and Trademarks

Beyond our patent right holdings, we broaden our intellectual property position with trademark, trade secret, know-how and continuous scientific discovery to accompany our product development efforts. We protect these proprietary assets with a combination of confidentiality terms in all commercial agreements or stand-alone confidentiality agreements along with rights-ownership agreements and structured information transfer understandings prior to beginning any collaborative projects. We own and maintain the ContraPest trademark and intend to register new trademarks for products from our evolving rodenticide product line and for products for mammalian species beyond rodentia.

Data Sets

We have exclusive use status with the EPA for the data sets we have developed and submitted to the EPA as part of our application for ContraPest. The exclusive use status applies to new active ingredients and the final formulation of the ContraPest product for a period of 10 years. For five years after the 10-year period of exclusivity, if another applicant or the EPA Administrator chooses to rely on one or more data sets that we submitted in support of an application submitted by another applicant, the new applicant must make a binding offer to compensate us and certify to the EPA that it has done so. If we and the offeror cannot reach agreement on the terms of the compensation for the use of such data sets, FIFRA requires resolution by binding arbitration. The EPA rules do not describe how the compensation should be determined, and there is publicly available information about some, but not all, binding arbitration decisions.

Where You Can Find Additional Information

We electronically file with the SEC our Annual Reports on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K and amendments to those reports filed or furnished pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934. We make available on our website at www.senestech.com, free of charge, copies of these reports, as soon as reasonably practicable after electronically filing such reports with, or furnishing them to, the SEC. The information contained in, or that can be accessed through, our website is not part of, and is not incorporated into, this Annual Report on Form 10-K.

ITEM 1A. RISK FACTORS.

As discussed immediately prior to Item 1 of Part I, “Business” under “Cautionary Note Regarding Forward-Looking Statements,” our actual results could differ materially from those expressed in our forward-looking statements. Factors that might cause or contribute to such differences include, but are not limited to, those discussed below. Additional risks and uncertainties not presently known to us, or that we currently deem immaterial, may also impair our business operations. If any of the following risks occur, our business, financial condition, operating results, cash flows and the trading price of our common stock could be materially adversely affected.

Risks Related to our Business

Our success is dependent on the successful commercialization of ContraPest.

The EPA granted registration approval for ContraPest effective August 2, 2016, and as of July 12, 2018, we have received registration for ContraPest in all 50 states and the District of Columbia. However, we have not yet had significant sales of ContraPest, which is our only product to date that is available for commercialization and the generation of revenue.

ContraPest and our other product candidates, if approved, may not achieve adequate market acceptance necessary for commercial success.

Even following receipt of regulatory approval for ContraPest or future regulatory approval of our other product candidates, such products may not gain market acceptance. Market acceptance of any of our product candidates for which we receive approval depends on a number of factors, including the following:

- the potential and perceived advantages of product candidates over alternative or complementary products;
- the effectiveness of our sales and marketing efforts and those of our collaborators;
- the efficacy and safety of such product candidates as demonstrated in trials;

- the uses, indications or limitations for which the product candidate is approved;
- product labeling or product insert requirements of the EPA or other regulatory authorities;
- the timing of market introduction of our products as well as future competitive or alternative products;
- relative convenience and ease of use; and
- unfavorable publicity relating to the product.

If we cannot successfully commercialize our products, especially ContraPest, we will not become profitable.

If any of our approved product candidates fail to achieve sufficient market acceptance, we will not be able to generate significant revenues or become profitable. The commercial success of ContraPest will depend on a number of factors, including the following:

- the execution of our commercial strategy and the successful expansion of our commercial organization;
- our success in educating end users about the benefits, administration and use of ContraPest;
- the effectiveness of our own or our potential strategic partners' marketing, sales and distribution strategy and operations;
- convincing PMPs to deploy ContraPest in quantity as an enhancement to, or replacement of, their current strategy of rodenticide use;
- continued refinement of our pricing strategy;
- our ability to manufacture quantities of ContraPest using commercially acceptable processes and at a scale sufficient to meet anticipated demand and enable us to reduce our cost of manufacturing; and
- a continued acceptable safety profile of ContraPest.

Many of these factors are beyond our control. If we are unable to successfully commercialize ContraPest, we may not be able to earn sufficient revenues or profits to continue our business.

We will require additional capital to fund our operations. Failure to obtain this necessary capital if needed may force us to delay, limit, or terminate our product development efforts or other operations.

Commercialization of ContraPest and developing further product candidates, including conducting experiments and field studies, obtaining and maintaining regulatory approval and commercializing any products approved for sale, is a time-consuming, expensive and uncertain process that takes years to complete. We expect our expenses to continue and to increase in connection with our ongoing activities, particularly as we advance our commercialization activities. We may expand our operations, and as a result of many factors, some of which may be currently unknown to us, our expenses may be higher than expected. Securing additional financing may divert our management from their day-to-day activities, which may adversely affect our ability to develop and commercialize our product candidates, including ContraPest. In addition, we cannot guarantee that future financing will be available in sufficient amounts or on terms acceptable to us, if at all. If we are unable to raise additional capital when required or on acceptable terms, we may be required to take certain actions, including the following:

- significantly delay, scale back or discontinue the development or commercialization of our product candidates, including ContraPest;
- seek strategic partners for the manufacturing, sales and distribution of ContraPest or any of our other product candidates at an earlier stage than otherwise would be desirable or on terms that are less favorable than might otherwise be available; and

- relinquish, or license on unfavorable terms, our rights to technologies or product candidates that we otherwise would seek to develop or commercialize ourselves.

The occurrence of any of the events described above would have a material adverse effect on our business, operating results and prospects and on our ability to develop our product candidates.

ContraPest is the first product we have marketed, and if we are unable to establish and maintain an effective sales force and marketing and distribution infrastructures, or enter into and rely upon acceptable third-party relationships, we may be unable to generate any revenue.

We continue to develop a functional infrastructure for the sales, marketing, and distribution of our products and the cost of establishing and maintaining such an infrastructure may exceed the cost-effectiveness of doing so. In order to market ContraPest and any other products that may be registered with the EPA and comparable foreign regulatory authorities, we must continue to build our sales, marketing, managerial and other non-technical capabilities or make arrangements with third parties to perform these services for which we would incur substantial costs. If we are unable to establish and maintain adequate sales, marketing, and distribution capabilities, whether independently or with third parties, we may not be able to generate sufficient product revenue to become profitable. Without an effective internal commercial organization or the support of a third party to perform sales and marketing functions, we may be unable to compete successfully.

The misuse of our products may harm our reputation in the marketplace, result in injuries that lead to product liability suits or result in costly investigations, fines or sanctions by regulatory bodies if we are deemed to have engaged in the promotion of these uses, any of which could be costly to our business.

Customers, technicians, or service providers could use our products in a manner that is inconsistent with the products' intended use. We train our marketing personnel and sales representatives to not promote our products for uses outside of the intended use, however, we cannot otherwise prevent all instances of misuse. Further, the marketing and sales representatives that we have hired to help meet the demand for our products may not have received proper training or have the working knowledge needed to adequately advise our customers how to safely use our products. Misuse of our products may cause an increased risk of injury to customers, which could harm our reputation in the marketplace, as well as lead to potential product liability lawsuits.

The coronavirus pandemic may continue to adversely affect our business, and other similar public health crises could result in similar or other harms.

The outbreak of the novel coronavirus ("COVID-19") pandemic resulted in widespread travel and transportation restrictions and closures of commercial spaces, industrial facilities and other spaces and businesses in and across the United States and the world, including in the locations we operate or target sales. As a result, our business has been impacted and we could face continued or more adverse effects. In addition to any continuing effects of COVID-19 on our business, another public health crisis with similar effects could develop and harm our business, financial results and liquidity. Our results and financial condition may be adversely affected by federal or state legislation, or other similar laws, regulations, orders or other governmental or regulatory actions or best practices, that would impose new restrictions on our ability to operate our business or customers to operate their businesses. The degree to which the continuing effects of the COVID-19 pandemic or similar public health crises may impact our results of operations and financial condition is unknown at this time and will depend on future developments, including the ultimate severity and the duration of the public health impacts, and further actions that may be taken by governmental authorities or businesses or individuals on their own initiatives in response to a public health threat.

We are currently operating in a period of economic uncertainty and capital markets disruption, which has been significantly impacted by geopolitical instability due to the ongoing invasion of Ukraine by Russia.

U.S. and global markets are experiencing volatility and disruption following the escalation of geopolitical tensions and Russia's launch of a full-scale military invasion of Ukraine in February 2022. Although the length and impact of the ongoing military conflict is highly unpredictable, the war in Ukraine has led to market disruptions, including significant volatility in commodity prices, credit, and capital markets. Additionally, Russia's prior annexation of Crimea, recent recognition of two separatist republics in the Donetsk and Luhansk regions of Ukraine, and subsequent military invasion in Ukraine have led to sanctions and other penalties being levied by the United States, the European Union, and other countries against Russia, Belarus, the Crimea Region of Ukraine, the so-called Donetsk People's Republic, and the so-called Luhansk People's Republic, including the agreement by the U.S. and the EU to remove certain Russian financial

institutions from the Society for Worldwide Interbank Financial Telecommunication payment system. Additional potential sanctions and penalties have also been proposed and/or threatened. Russian military actions and the resulting sanctions could adversely affect the global economy and financial markets and lead to instability and lack of liquidity in capital markets, potentially making it more difficult for us to obtain additional equity or debt funding. Any of the above-mentioned factors could affect our business, prospects, financial condition, and operating results. The extent and duration of the war, sanctions, and resulting market disruptions are impossible to predict, but could be substantial. Any such disruptions may also magnify the impact of other risks described herein.

In addition, as a result of the ongoing conflict between Russia and Ukraine, we may experience other risks, difficulties and challenges in the way we conduct our business and operations generally. For example, there may be an increased risk of cybersecurity attacks due to the current conflict between Russia and Ukraine, including cybersecurity attacks perpetrated by Russia or others at its direction in response to economic sanctions and other actions taken against Russia as a result of its invasion of Ukraine. Any increase in such attacks on us or our third-party providers or other systems could adversely affect our network systems or other operations. At this time, to the best of our knowledge, we do not believe we have experienced any cyberattacks that are related to the conflict between Russia and Ukraine. Although we have taken steps to enhance our protections against such attacks, we may not be able to address these cybersecurity threats proactively or implement adequate preventative measures and there can be no assurance that we will promptly detect and address any such disruption or security breach, if at all. A protracted conflict between Ukraine and Russia, any escalation of that conflict, and the financial and economic sanctions and import and/or export controls imposed on Russia by the United States, the UK, the EU, Canada and others, and the above-mentioned adverse effect on our operations (both in this region and generally) and on the wider global economy and market conditions could, in turn, have a material adverse impact on our business, financial condition, cash flows and results of operations and could cause the market value of our common shares to decline.

Risks Related to Regulatory Matters

Regulatory approval processes of the EPA and comparable foreign regulatory authorities are lengthy, time-consuming and unpredictable, and if we are ultimately unable to obtain regulatory approval for our product candidates, our business may fail.

The EPA review process for a product with one or more new active ingredients typically takes approximately two years to complete and approval is never guaranteed. In addition, we continue to seek approvals to expand labels and use designations for ContraPest to broaden its market and usability. Our efforts could fail to receive approval from the EPA, with respect to ContraPest or our product candidates, or from a comparable foreign regulatory authority for many reasons, including the following:

- disagreement over the design or implementation of our trials;
- failure to demonstrate a product candidate is safe or works according to our claims;
- failure to demonstrate a product candidate’s benefits outweigh its risks;
- disagreement over our interpretation of data;
- disagreement over whether to accept efficacy results from trials;
- the insufficiency of data collected from trials to obtain regulatory approval;
- irreparable or critical compliance issues relating to our manufacturing process; or
- changes in the approval policies or regulations that render our data insufficient for approval.

Any of these factors, some of which are beyond our control, could jeopardize our ability to obtain regulatory approval of submittals. Any such setback in our pursuit of regulatory approval could have a material adverse effect on our business and prospects.

Even following receipt of any regulatory approval for ContraPest and our other product candidates, we will continue to face extensive regulatory requirements and our products may face future development and regulatory difficulties.

Even following receipt of any regulatory approval for ContraPest or our product candidates, our products will be subject to ongoing requirements by the EPA and comparable state and foreign regulatory authorities governing the manufacture, quality control, further development, labeling, packaging, storage, distribution, safety surveillance, import, export, advertising, promotion, recordkeeping and reporting of safety and other post-market information.

The safety profile of any product will continue to be closely monitored by the EPA, state and comparable foreign regulatory authorities after approval. In addition, we may be required, from time to time, to provide further testing results and certifications to the EPA and state regulatory agencies for ContraPest.

For instance, we have found it challenging to produce applicable stability test results for one of our active ingredients, due in part to the small quantity used in the final product and continue to work with the EPA to develop appropriate biological and/or chemical measurements for active ingredient stability. Because our data continues to demonstrate the long-term efficacy of ContraPest, we believe that the testing is a matter we will resolve.

If the EPA or comparable foreign regulatory authorities become aware of new information after approval of ContraPest or any other product candidate, or we are unable to adequately complete required testing and certification requirements, a number of potentially significant negative consequences could result, including the following:

- we may be forced to suspend marketing of such product;
- regulatory authorities may withdraw their approvals of such product after certain procedural requirements have been met;
- regulatory authorities may require additional warnings on the label that could diminish the usage or otherwise limit the commercial success of such product;
- the EPA or other regulatory bodies may issue safety alerts, press releases or other communications containing warnings about such product;
- the EPA may require the establishment or modification of restricted use, or a comparable foreign regulatory authority may require the establishment or modification of a similar strategy that may, for instance, restrict distribution of our product and impose burdensome implementation requirements on us;
- we may be required to change the way the product is administered or conduct additional trials;
- we could be sued and held liable for harm caused;
- we may be subject to litigation or product liability claims; and
- our reputation may suffer.

Any of these events could prevent us from achieving or maintaining market acceptance of the particular product candidate, if approved, and could significantly harm our business, results of operations and prospects.

Moreover, existing government regulations may change, and additional government regulations may be enacted that could prevent, limit or delay regulatory approval of ContraPest or any other product candidates. If we are slow or unable to adapt to changes in existing requirements or the adoption of new requirements or policies, or if we are not able to maintain regulatory compliance, we may lose any marketing approval that we may have obtained and/or be subject to different marketing requirements or fines or enhanced government oversight and reporting obligations, which would adversely affect our business, prospects, and ability to achieve or sustain profitability.

Our future success may also be dependent on regulatory approval and commercialization of other product candidates.

We are actively working on a semi-solid product and a product to control fertility in mice. We cannot commercialize our product candidates in the United States without first obtaining regulatory approval for each product and each use pattern

from the EPA, and from any related applicable state authorities. Before obtaining regulatory approvals for the commercial sale of any product candidate for a target indication, the law requires that applicants demonstrate through laboratory and field studies and related data showing that the product candidate will perform its intended function without causing unreasonable adverse effects on the environment. The EPA or a comparable foreign regulatory authority may require more information, including additional data to support approval that may delay or prevent approval.

Even following receipt of any regulatory approval for ContraPest and our other product candidates, we will continue to be subject to regulation of our manufacturing processes and advertising practices.

As a manufacturer of pest control products, we are subject to continual government oversight and periodic inspections by the EPA and other regulatory authorities. If we or a regulatory agency discover problems with a facility where our products are manufactured, a regulatory agency may impose restrictions on the manufacturing facility, including requiring recall or withdrawal of the product from the market or suspension of manufacturing until certain procedural requirements have been met. The occurrence of any such event or penalty could limit our ability to market ContraPest or any other product candidates and generate revenue.

In addition, the EPA strictly regulates the advertising and promotion of pest control products, and these pest control products may only be marketed or promoted for their EPA approved uses, consistent with the product's approved labeling. Advertising and promotion of any product candidate that obtains approval in the U.S. will be heavily scrutinized by the EPA, other applicable state regulatory agencies and the public. Violations, including promotion of our products for unapproved or off-label uses, are subject to enforcement actions, inquiries and investigations, and civil, criminal and/or administrative sanctions imposed by the EPA.

Failure to obtain regulatory approval in foreign jurisdictions would prevent ContraPest or any other product candidates from being marketed in those jurisdictions.

To market and sell our products globally, we must obtain separate marketing approvals and comply with numerous and varying regulatory requirements. The approval procedure varies among countries and can involve additional testing. Obtaining foreign regulatory approvals and maintaining compliance with foreign regulatory requirements could result in significant delays, difficulties, and cost for us and could delay or prevent the introduction of our products in certain countries. Approval by the EPA does not ensure approval by regulatory authorities in other countries or jurisdictions, but EPA approval may influence decisions by the foreign regulatory authority. If we are unable to obtain approval of ContraPest or for any of our other product candidates by regulatory authorities in the world market, the commercial prospects of that product candidate may be significantly diminished and our business prospects could decline.

Risks Related to our Operations and Supply Chain

We depend on key personnel to operate our business. If we are unable to retain, attract and integrate qualified personnel, our ability to develop and successfully grow our business could be harmed.

We believe that our success is highly dependent on our ability to attract and retain highly skilled and experienced managerial, sales, research and development, and other personnel. If one or more of our executive officers or key employees terminates employment or becomes disabled or experiences long-term illness, we may not be able to replace their expertise, fully integrate new personnel or replicate the prior working relationships, and the loss of their services might significantly delay or prevent the achievement of our research and development and business objectives. Qualified individuals with the breadth of skills and experience in our industry that we require are in high demand, and we may incur significant costs to attract them. Many of the other companies that we compete against for qualified personnel have greater financial and other resources, different risk profiles and a more established history in the industry. They also may provide more diverse opportunities and better chances for career advancement. Our failure to attract and/or retain key personnel could impede the achievement of our research and development and commercialization objectives.

We have internal manufacturing capabilities to meet our current and near term forecasted demand for ContraPest, however, we must develop additional manufacturing capability or rely upon third parties to manufacture our products to meet future demand and our single location manufacturing operations could be disrupted.

Our existing internal manufacturing platform is adequate for meeting our current and near term forecasted demand for ContraPest. We may be required to spend significant time and resources to expand these manufacturing facilities to fully meet future demand. If we are unable to develop full-scale manufacturing capabilities, we may not be able to meet demand

of our products without relying on third party manufacturers, which could adversely affect our operations or financial condition.

In addition, if our manufacturing operations fail or are disrupted for any reason, including because of labor, disasters, and/or equipment malfunctions, among others, our ability to timely produce ContraPest may be adversely affected, which would harm our sales and reputation. We only operate in a single location, which means we do not have back-up facilities to produce our products during a time when our manufacturing facility becomes unavailable.

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

As of December 31, 2022, we had 29 full-time employees. As our development and commercialization plans and strategies develop, we will need additional managerial, operational, sales, marketing, scientific and financial headcount and other resources. Our management, personnel, and systems currently in place may not be adequate to support this future growth. Future growth would impose significant added responsibilities on members of management, including the following:

- identifying, recruiting, maintaining, motivating and integrating additional employees with the expertise and experience we will require;
- managing our internal development efforts effectively while complying with our contractual obligations to licensors, licensees, contractors and other third parties;
- managing additional relationships with various strategic partners, suppliers and other third parties;
- managing our trials effectively, which we anticipate being conducted at numerous field study sites; 19
- improving our managerial, development, operational, marketing, production and finance reporting systems and procedures; and
- expanding our facilities.

Our failure to accomplish any of these tasks could prevent us from successfully growing our business.

Business or supply chain disruptions could seriously harm our future revenues and financial condition and increase our costs and expenses, particularly because we have limited suppliers and a critical ingredient is currently sourced from China.

Our operations could be subject to a variety of potential business disruptions, including power shortages, telecommunications failures, water shortages, floods, fires, earthquakes, extreme weather conditions, medical epidemics and other natural or man-made disasters or other interruptions, for which we are predominantly self-insured. We do not carry insurance for all categories of risk that our business may encounter. The occurrence of any of these business disruptions could seriously harm our operations and financial condition and increase our costs and expenses. Moreover, we rely on third parties to supply various ingredients and other items which are critical for producing our product candidates.

We currently use one supplier for each of our two active ingredients, triptolide and VCD. Our ability to produce our product candidates would be disrupted if the operations of these suppliers are affected by a man made or natural disaster or other business interruption. Because triptolide is sourced from China and other Asian countries, we have a greater risk of supply interruption, including as a result of tariff and trade disputes, or disruptive events like the outbreak of COVID-19. The ultimate impact on our operations from any business interruption impacting us or any of our significant suppliers is unknown, but our operations and financial condition would likely suffer adverse consequences. Further, any significant uninsured liability may require us to pay substantial amounts, which would adversely affect our business, results of operations, financial condition and cash flows from future prospects.

We are dependent on triptolide, a key ingredient for ContraPest, which has limited sources and must be in a very refined condition.

If we are unable to develop additional sources of or alternatives to triptolide, a key ingredient for ContraPest, our long-term ability to produce ContraPest at a cost effective price could be in jeopardy. If market demand for triptolide causes the price

to increase beyond our ability to market at a competitive price or causes the quality of the refined ingredient to be less than needed for our production, our ability to commercialize ContraPest could be limited or delayed, which would adversely affect our business, results of operations and financial condition.

A variety of risks associated with marketing our product candidates internationally could materially adversely affect our business.

We may seek regulatory approval of our product candidates outside of the United States and, in that case, we expect that we will be subject to additional risks related to operating in foreign countries if we obtain the necessary approvals, including the following:

- differing regulatory requirements in foreign countries;
- unexpected changes in tariffs, trade barriers, price and exchange controls and other regulatory requirements;
- economic weakness, including inflation or political instability in particular foreign economies and markets;
- compliance with tax, employment, immigration and labor laws for employees living or traveling internationally;
- foreign taxes, including withholding of payroll taxes;
- foreign currency fluctuations, which could result in increased operating expenses and reduced revenue, and other obligations incident to doing business in another country;
- difficulties staffing and managing foreign operations;
- workforce uncertainty in countries where labor unrest is more common than in the United States;
- potential liability under the U.S. Foreign Corrupt Practices Act of 1977, as amended, or the FCPA, or comparable foreign regulations;
- challenges enforcing our contractual and intellectual property rights, especially in those foreign countries that do not respect and protect intellectual property rights to the same extent as the United States;
- production shortages resulting from any events affecting raw material supply or manufacturing capabilities internationally; and
- business interruptions resulting from geopolitical actions, including war and terrorism.

These and other risks associated with our international operations may materially adversely affect our ability to attain or maintain profitable operations.

Risks Related to Our Intellectual Property and Legal Actions

If we fail to obtain or protect intellectual property rights, our competitive position could be harmed.

We depend on our ability to protect our proprietary technology. We rely on trade secret, patent, copyright and trademark laws, and confidentiality, licensing, and other agreements with employees and third parties, all of which offer only limited protection. Our commercial success will depend in part on our ability to obtain and maintain intellectual property protection in the United States and other countries with respect to our proprietary technology and products. Where we deem appropriate, we seek to protect our proprietary position by filing patent applications in the United States and internationally related to our novel technologies and products that are important to our business. However, our financial resources constrain us from seeking protection in every instance, so we may rationalize and selectively pursue expensive patent protection. Patent positions can be highly uncertain, involve complex legal and factual questions and be the subject of litigation. As a result, the issuance, scope, validity, enforceability and commercial value of our patents, including those patent rights licensed to us by third parties, are highly uncertain.

The steps we have taken to protect our proprietary rights may not be adequate to preclude misappropriation of our proprietary information or infringement of our intellectual property rights, both inside and outside the United States. The rights already granted under any of our currently issued patents and those that may be granted under future issued patents may not provide us with the proprietary protection or competitive advantages we are seeking. If we are unable to obtain and maintain protection for our technology and products, or if the scope of the protection obtained is not sufficient, our competitors could develop and commercialize technology and products similar or superior to ours, and our ability to successfully commercialize our technology and products may be adversely affected.

With respect to patent rights, we do not know whether any of our pending patent applications for any of our technologies or products will result in the issuance of patents that protect such technologies or products, or if our licensed patent will effectively prevent others from commercializing competitive technologies and products. Our pending patent applications cannot be enforced against third parties practicing the technology claimed in such applications unless and until a patent issues from such applications. Further, the examination process may require us to narrow the claims for our pending patent applications, which may limit the scope of patent protection that may be obtained if these applications issue. Because the issuance of a patent is not conclusive as to its inventorship, scope, validity or enforceability, issued patents that we own or have licensed from third parties may be challenged in the courts or patent offices in the U.S. and internationally. Such challenges may result in the loss of patent protection, the narrowing of claims in such patents, or the invalidity or unenforceability of such patents, which could limit our ability to stop others from using or commercializing similar or identical technology and products or limit the duration of the patent protection for our technology and products. Protecting against the unauthorized use of our patented technology, trademarks and other intellectual property rights, is expensive, difficult, and in some cases, may not be possible. In some cases, it may be difficult or impossible to detect third party infringement or misappropriation of our intellectual property rights, even in relation to issued patent claims, and proving any such infringement may be even more difficult.

Intellectual property rights do not necessarily address all potential threats to any competitive advantage we may have.

The degree of future protection afforded by our intellectual property rights is uncertain because intellectual property rights have limitations, and may not adequately protect our business, or permit us to maintain our competitive advantage. The following examples are illustrative:

- others may be able to make compounds that are the same as or similar to our future products but that are not covered by the claims of the patents that we own or have exclusively licensed;
- we might not have been the first to file patent applications covering certain of our inventions;
- others may independently develop similar or alternative technologies or duplicate any of our technologies without infringing on our intellectual property rights;
- issued patents that we own or have exclusively licensed may not provide us with any competitive advantages, or may be held invalid or unenforceable, as a result of legal challenges by our competitors;
- our competitors might conduct research and development activities in the U.S. and other countries that provide a safe harbor from patent infringement claims for certain research and development activities, as well as in countries where we do not have patent rights and then use the information learned from such activities to develop competitive products for sale in our major commercial markets;
- we may not develop additional proprietary technologies that are patentable or otherwise protectable;
- employees may violate confidentiality and proprietary invention assignment agreements and we may not have the resources to enforce those agreements or otherwise enforce our patent rights; and
- the patents of others may have an adverse effect on our business.

Our technology may be found to infringe third party intellectual property rights.

Third parties may in the future assert claims or initiate litigation related to their patent, copyright, trademark and other intellectual property rights in technology that is important to us. The asserted claims and/or litigation could include claims against us, our licensors, or our suppliers alleging infringement of intellectual property rights with respect to our product

candidates or components of those products. Regardless of the merit of the claims, they could be time consuming, resulting in costly litigation and diversion of technical and management personnel, or require us to develop non-infringing technology or enter into license agreements. We cannot assure you that licenses will be available on acceptable terms, if at all. Furthermore, because of the potential for significant damage awards, which are not necessarily predictable, it is not unusual to find even arguably unmeritorious claims resulting in large settlements. If any infringement or other intellectual property claim made against us by any third party is successful, or if we fail to develop non-infringing technology or license the proprietary rights on commercially reasonable terms and conditions, our business, operating results and financial condition could be materially adversely affected.

If our product candidates, methods, processes and other technologies infringe the proprietary rights of other parties, we could incur substantial costs and we may have to take certain actions, including the following:

- obtain licenses, which may not be available on commercially reasonable terms, if at all;
- redesign our product candidates or processes to avoid infringement;
- stop using the subject matter claimed to be held by others;
- pay damages; or
- defend litigation or administrative proceedings which may be costly whether we win or lose, and which could result in a substantial diversion of our financial and management resources.

We may need to license intellectual property from third parties, and such licenses may not be available or may not be available on commercially reasonable terms.

A third party may hold intellectual property, including patent rights that are important or necessary to the development of our product candidates. It may be necessary for us to use the patented or proprietary technology of a third party to manufacture or otherwise commercialize our own technology or products, in which case we would be required to obtain a license from such third party. Licensing such intellectual property may not be available or may not be available on commercially reasonable terms, which could have a material adverse effect on our business and financial condition.

We may be subject to legal proceedings in the ordinary course of our business that could result in significant harm to our business, financial condition and operating results.

We could be subject to legal proceedings and claims from time to time in the ordinary course of our business, including actions arising from tort, contract or other claims. See the information set forth under the headings “Legal Proceedings” and in the related notes to financial statements in the Company’s periodic reports on Form 10-K, 10-Q and 8-K incorporated by reference herein. Litigation is expensive, time consuming, and could divert management’s attention away from running our business. The outcome of litigation or other proceedings is subject to significant uncertainty, and it is possible that an adverse resolution of one or more such proceedings could result in reputational harm and/or significant monetary damages, injunctive relief or settlement costs that could adversely affect our results of operations or financial condition as well as our ability to conduct our business as it is presently being conducted. Insurance might not cover such claims, might not provide sufficient payments to cover all the costs to resolve one or more such claims and might not be available on terms acceptable to us. In addition, regardless of merit or outcome, claims brought against us that are uninsured or under insured could result in unanticipated costs, which could harm our business, financial condition and operating results and reduce the trading price of our stock.

For example, we have become aware that we were involved in a transaction in which an investor of the Company may have resold approximately 175,000 shares of our common stock pursuant to a registration statement that had not yet been declared effective by the Securities and Exchange Commission (SEC). As a result, it is possible that the SEC could bring an action against us, or we may ultimately be responsible for an action for rescission by purchasers of the securities that were resold. If the SEC were to bring such an enforcement action against us, or if purchasers were to bring such an action for rescission, it may have a material adverse effect on our financial position.

Product liability lawsuits against us could cause us to incur substantial liabilities and to limit commercialization of any products that we may develop.

We face an inherent risk of product liability exposure related to the use of ContraPest and any of our other products. If we cannot successfully defend ourselves against claims from our product users, we could incur substantial liabilities. Regardless of merit or eventual outcome, liability claims may result in the following:

- decreased demand for any product that we may develop;
- termination of field studies or other research and development efforts;
- injury to our reputation and significant negative media attention;
- significant costs to defend the related litigation;
- substantial monetary awards to plaintiffs;
- loss of revenue;
- diversion of management and scientific resources from our business operations; and
- the inability to commercialize our product candidates.

We may be unable to obtain commercially reasonable product liability insurance for any products approved for marketing. Large judgments have been awarded in class action lawsuits based on products that had unanticipated side effects, including, without limitation, any potential adverse effects of our products on humans or other species. A successful product liability claim or series of claims brought against us, particularly if judgments exceed our insurance coverage, could decrease our cash and adversely affect our business.

Risks Related to our Reporting and Cybersecurity

We have not fully assessed our internal control over financial reporting. If we experience material weaknesses in the future or otherwise fail to maintain an effective system of internal controls, we may not be able to accurately or timely report our financial condition or results of operations, which may adversely affect investor confidence in us and, as a result, the value of our common stock.

A material weakness is a deficiency, or combination of deficiencies, in internal control over financial reporting such that there is a reasonable possibility that a material misstatement of our financial statements will not be prevented or detected on a timely basis.

Our Annual Report on Form 10-K for the year ended December 31, 2022 does not include an attestation report of our registered public accounting firm due to a transition period established by rules of the SEC for smaller reporting companies. As a result, we have not yet fully assessed our internal control over financial reporting and are unable to assure that the measures we have taken to date, together with any measures we may take in the future, will be sufficient to remediate the control deficiencies that led to our material weaknesses in our internal control over financial reporting, or to avoid potential future material weaknesses.

If we are unable to develop and maintain an effective system of internal control over financial reporting, successfully remediate any existing or future material weaknesses in our internal control over financial reporting, or identify any additional material weaknesses, the accuracy and timing of our financial reporting may be adversely affected, we may be unable to maintain compliance with securities law requirements regarding timely filing of periodic reports and Nasdaq listing requirements, investors may lose confidence in our financial reporting, and our stock price may decline as a result.

Privacy breaches and other cyber security risks related to our business could negatively affect our reputation, credibility and business.

We are making sales through our new e-Commerce tool, which depends on information technology systems and networks. We are also responsible for storing data relating to our customers and employees and rely on third party vendors for the

storage, processing and transmission of personal and Company information. Consumers, lawmakers and consumer advocates alike are increasingly concerned over the security of personal information transmitted over the Internet, consumer identity theft and privacy. We do not control our third-party service providers and cannot guarantee that they have implemented reasonable security measures to protect our employees' and customers' identity and privacy, or that no electronic or physical computer break-ins or security breaches will occur in the future. Our systems and technology are vulnerable from time-to-time to damage, disruption or interruption from, among other things, physical damage, natural disasters, inadequate system capacity, system issues, security breaches, "hackers," email blocking lists, computer viruses, power outages and other failures or disruptions outside of our control. A significant breach of customer, employee or Company data could damage our reputation and our relationship with customers, and could result in lost sales, sizable fines, significant breach-notification costs and lawsuits, as well as adversely affect our results of operations. We may also incur additional costs in the future related to the implementation of additional security measures to protect against new or enhanced data security and privacy threats, or to comply with state, federal and international laws that may be enacted to address those threats.

Risks Related to our Capital Stock, Funding and Trading in our Stock

We have incurred significant operating losses every quarter since our inception and anticipate that we will continue to incur significant operating losses in the future.

Investment in product development is highly speculative because it entails substantial upfront capital expenditures and significant risk that any potential product candidate will fail to become commercially viable or gain regulatory approval. To date, we have financed our operations primarily through the sale of equity securities and debt financings as well as research grants. We have not generated sufficient revenue from product sales to date to achieve profitability. We continue to incur significant sales, marketing, research, development, and other expenses related to our ongoing operations. As a result, we are not profitable and have incurred losses in every reporting period since our inception. For the years ended December 31, 2022 and 2021, we reported net losses of $9.7 million and $8.3 million, respectively. Thru December 31, 2022, we have accumulated deficits of $122.2 million since inception.

Since inception, we have dedicated a majority of our resources to the discovery and development and marketing of our proprietary product candidates. We expect to continue to incur significant expenses and operating losses for the foreseeable future. The size of our losses will depend, in part, on the rate of future expenditures and our ability to generate revenues. In particular, we expect to incur substantial and increased expenses as we perform the following:

- attempt to achieve market acceptance for our products;
- continue to establish an infrastructure for the sales, marketing and distribution of ContraPest and any other product candidates for which we may receive regulatory approval;
- scale up manufacturing processes and quantities for the commercialization of ContraPest and any other product candidates for which we receive regulatory approval;
- continue the research and development of ContraPest and our other product candidates, including engaging in any necessary field studies;
- seek regulatory approvals for ContraPest in various jurisdictions and for our other product candidates;
- expand our research and development activities and advance the discovery and development programs for other product candidates;
- maintain, expand and protect our intellectual property portfolio; and
- add operational, financial and management information systems and personnel, including personnel to support our clinical development and commercialization efforts and operations as a public company.

We may encounter unforeseen expenses, difficulties, complications, delays, and other unknown factors that may adversely affect our financial condition. Our prior losses and expected future losses have had, and will continue to have, an adverse effect on our financial condition. If ContraPest or any other product candidate does not gain or maintain sufficient regulatory approval, or if approved, fails to achieve market acceptance, we may never become profitable. Even if we

achieve profitability in the future, we may not be able to sustain profitability in subsequent periods. Our failure to become and remain profitable would decrease the value of our company and could impair our ability to raise capital, expand our business, diversify our product offerings or continue our operations. A decline in the value of our company could cause you to lose all or part of your investment.

If we are unable to continue as a going concern, our securities will have little or no value.

We have incurred operating losses since our inception, and we expect to continue to incur significant expenses and operating losses for the foreseeable future. Our financial statements as of December 31, 2022 and 2021 have been prepared under the assumption that we will continue as a going concern. Our independent registered public accounting firm included in its opinion for the years ended December 31, 2022, and 2021 an explanatory paragraph referring to our net loss from operations and net capital deficiency and expressing substantial doubt in our ability to continue as a going concern without additional capital becoming available. If we encounter continued issues or delays in the commercialization of ContraPest or greater than anticipated expenses, our prior losses and expected future losses could have an adverse effect on our financial condition and negatively impact our ability to fund continued operations, obtain additional financing in the future and continue as a going concern. There are no assurances that such financing, if necessary, will be available to us at all or will be available in sufficient amounts or on reasonable terms. Our financial statements do not include any adjustments that may result from the outcome of this uncertainty. If we are unable to generate additional funds in the future through financings, sales of our products, licensing fees, royalty payments or from other sources or transactions, we will exhaust our resources and will be unable to continue operations. If we cannot continue as a going concern, our stockholders would likely lose most or all of their investment in us.

Raising additional capital may cause dilution to our existing stockholders, restrict our operations or require us to relinquish rights to our technologies or product candidates.

Until such time, if ever, as we can generate sufficient product revenues, we expect to finance our cash needs primarily through the sale of equity securities and debt financings, and possibly through credit facilities and government and foundation grants. We may also seek to raise capital through third party collaborations, strategic alliances and similar arrangements. We currently do not have any committed external source of funds.

Raising funds in the future may present additional challenges and future financing may not be available in sufficient amounts or on terms acceptable to us, if at all. The terms of any financing arrangements we enter into may adversely affect the holdings or the rights of our stockholders and the issuance of additional securities by us, or the possibility of such issuance, may cause the market price of our shares to decline. For example, during 2022 and 2020, we completed equity financings that resulted in the issuance of shares of common stock and warrants to purchase common stock, resulting in substantial dilution to the existing stockholders. Similarly, in the first quarter of 2021, we again issued shares of common stock and warrants to purchase common stock, resulting in additional substantial dilution to the existing stockholders. We generally have raised capital as the opportunity arises.

Certain of our agreements with investors and our outstanding warrants contain provisions that impose limitations on our ability to participate in certain variable rate transactions, including at-the-market transactions, which may limit our opportunities to obtain financing in sufficient amounts or on acceptable terms. The sale of additional equity or convertible debt securities would dilute all of our stockholders, and if such sales occur at a deemed issuance price that is lower than the current exercise price of our outstanding warrants sold to investors in November 2017, the exercise price for those warrants would adjust downward to the deemed issuance price pursuant to price adjustment protection contained within those warrants. Our various warrants contain other terms that may affect our fundraising. In connection with this offering, we may agree to amend the terms of certain of our outstanding warrants held by certain significant purchasers in this offering. Any such amendments may, among other things, decrease the exercise prices or increase the term of exercise of those warrants.

The incurrence of indebtedness through credit facilities would result in increased fixed payment obligations and, potentially, the imposition of restrictive covenants. Those covenants may include limitations on our ability to incur additional debt, making capital expenditures or declaring dividends, and may impose limitations on our ability to acquire, sell, or license intellectual property rights and other operating restrictions that could adversely impact our ability to conduct our business.

If we raise additional funds through collaborations, strategic alliances, or licensing arrangements or other marketing or distribution arrangements with third parties, we may have to relinquish valuable rights to our technologies, future revenue

streams, research programs or product candidates or grant licenses on terms that may not be favorable to us. If we are unable to expand our operations or otherwise capitalize on our business opportunities, our business, financial condition and results of operations could be materially adversely affected.

If we are unable to raise additional funds through equity or debt financings when needed, we may be required to delay, limit, reduce or terminate our product development or commercialization efforts, or grant others rights to develop and market product candidates that we would otherwise prefer to develop and market ourselves.

Our share price is volatile, which could subject us to securities class action litigation and your investment in our securities could decline in value.

Our stock could be subject to wide fluctuation in response to many risk factors listed in this section, and others beyond our control, including the following:

- market acceptance and commercialization of our products;
- our being able to timely demonstrate achievement of milestones, including those related to revenue generation, cost control, cost effective source supply, and regulatory approvals;
- our ability to remain listed on Nasdaq;
- results and timing of our submissions with the regulatory authorities;
- failure or discontinuation of any of our development programs;
- regulatory developments or enforcements in the United States and non-U.S. countries with respect to our products or our competitors' products;
- failure to achieve pricing acceptable to the market;
- regulatory actions with respect to our products or our competitors' products;
- actual or anticipated fluctuations in our financial condition and operating results or our continuing to sustain operating losses;
- competition from existing products or new products that may emerge;
- announcements by us or our competitors of significant acquisitions, strategic arrangements, joint ventures, collaborations or capital commitments;
- issuance of new or updated research or reports by securities analysts;
- announcement or expectation of additional financing efforts, particularly if our cash available for operations significantly decreases or if the financing efforts result in a price adjustment to certain outstanding warrants;
- fluctuations in the valuation of companies perceived by investors to be comparable to us;
- share price and volume fluctuations attributable to inconsistent trading volume levels of our shares;
- disputes or other developments related to proprietary rights, including patents, litigation matters and our ability to obtain patent protection for our technologies;
- entry by us into any material litigation or other proceedings;
- sales of our common stock by us, our insiders, or our other stockholders;
- exercise of outstanding warrants;

- market conditions for equity securities; and
- general economic and market conditions unrelated to our performance.

Furthermore, the capital markets can experience extreme price and volume fluctuations that may affect the market prices of equity securities of many companies. These broad market and industry fluctuations, as well as general economic, political, and market conditions such as recessions, interest rate changes, or international currency fluctuations, may negatively impact the market price of shares of our common stock. In addition, such fluctuations could subject us to securities class action litigation, which could result in substantial costs and divert our management's attention from other business concerns, which could seriously harm our business. You may not realize any return on your investment in us and may lose some or all of your investment.

Future sales, or the possibility of future sales, of a substantial number of our common shares could adversely affect the price of the shares and dilute stockholders.

Future sales of a substantial number of shares of our common stock, or the perception that such sales will occur, could cause a decline in the market price of our common stock. This is particularly true if we sell our stock at a discount. Any future issuance of common stock or securities convertible or exercisable into our common stock could cause a further downward adjustment of the exercise price of these warrants to the deemed issuance price if the issuance price is less than the exercise price of the warrants at the time of the new issuance.

Also, in the future, we may issue additional shares of our common stock or other equity or debt securities convertible into common stock in connection with a financing, acquisition, litigation settlement, employee arrangements, or otherwise. Any such issuance could result in substantial dilution to our existing stockholders and could cause our common share price to decline.

An active market in the shares may not continue to develop in which investors can resell our common stock.

We cannot predict the extent to which an active market for our common stock will continue to develop or be sustained, or how the development of such a market might affect the market price for our common stock. Market conditions in effect at the time you acquire our stock may not be indicative of the price at which our common stock will trade in the future. Investors may not be able to sell their common stock at or above the price they acquired it.

If securities or industry analysts, or other sources of information, do not publish research, or publish inaccurate or unfavorable research or other information about our business, our stock price and trading volume could decline.

The trading market for our common stock may depend on the research, reports and other information that securities or industry analysts, or other third-party sources of information, publish about us or our business. We do not have any control over these analysts or other third-party sources of information. From time to time inaccurate or unfavorable research or other information about our business, financial condition, results of operations and stock ownership may be published. We cannot assure that analysts will cover us or provide favorable coverage. If one or more of the analysts who cover us downgrade our stock or change their opinion of our stock, our share price could decline. If one or more of these analysts cease coverage of us or fail to regularly publish reports on us, we could lose visibility in the financial markets, which could cause our stock price or trading volume to decline. If incorrect or misleading information is disseminated publicly by third parties about us, our stock price could decline.

We may not be able to comply with all applicable listing requirements or standards of The Nasdaq Capital Market and Nasdaq could delist our common stock.

Our common stock is listed on The Nasdaq Capital Market. In order to maintain that listing, we must satisfy minimum financial and other continued listing requirements and standards. Previously, on September 26, 2018, March 20, 2019, February 20, 2020 and, most recently, on March 2, 2022, we received a letter from the listing qualifications staff of Nasdaq providing notification that the bid price for our common stock had closed below $1.00 per share for the previous 30 consecutive business days and our common stock no longer met the minimum bid price requirement for continued listing under Nasdaq Listing Rule 5550(a)(2). In each case, in accordance with Nasdaq Listing Rule 5810(c)(3) (A), we had an initial period of 180 calendar days to regain compliance. To regain compliance, the closing bid price of our common stock had to be $1.00 per share or more for a minimum of 10 consecutive business days at any time before the expiration of the initial compliance period.

In the event that we would have been unable to regain compliance with Rule 5550(a)(2) during the initial compliance, Nasdaq rules provide that we may be eligible for an additional 180 calendar day compliance period. Most recently, we received notice that we are eligible for such an additional 180 calendar days, until February 27, 2023, to regain compliance. To qualify, we needed to meet the continued listing requirement for market value of publicly held shares and all other initial listing standards for the Nasdaq Capital Market, with the exception of the minimum bid price requirement, and to provide written notice of our intention to cure the deficiency during the second compliance period, by effecting a reverse stock split, if necessary. On October 12, 2022, our stockholders approved a reverse stock split of our common stock, par value $.001 per share, at a ratio of not less than 1-for-5 and not more than 1-for-20, with the actual ratio to be determined by our board of directors. On November 15, 2022, the Reverse Split Committee of our Board of Directors approved a final split ratio of one-for-twenty (1:20). Following such approval, we filed an amendment to the Certificate of Incorporation with the Secretary of State of the State of Delaware to effect the reverse stock split, with an effective time of 11:59 p.m., Eastern Time on November 15, 2022. The liquidity of the shares of our common stock may be affected adversely by the reverse stock splits we have undertaken to address such compliance failure, given the reduced number of shares that are outstanding following a reverse stock split. In addition, reverse stock splits may increase the number of stockholders who own odd lots (less than 100 shares) of our common stock, creating the potential for such stockholders to experience an increase in the cost of selling their shares and greater difficulty effecting such sales.

In the event that we are unable to establish compliance, or again become non-compliant, with Rule 5550(a)(2) and cannot re-establish compliance within the require timeframe, our common stock could be delisted from The Nasdaq Capital Market, which could have a material adverse effect on our financial condition and which would cause the value of our common stock to decline. If our common stock is not eligible for listing or quotation on another market or exchange, trading of our common stock could be conducted in the over-the-counter market or on an electronic bulletin board established for unlisted securities such as the Pink Sheets or the OTC Bulletin Board. In such event, it would become more difficult to dispose of, or obtain accurate price quotations for, our common stock, and there would likely be a reduction in our coverage by security analysts and the news media, which could cause the price of our common stock to decline further. In addition, it may be difficult for us to raise additional capital if we are not listed on a national securities exchange.

Our reverse stock splits may decrease the liquidity of the shares of our common stock.

On October 12, 2022, our stockholders approved a reverse stock split of our common stock, par value $0.001 per share, at a ratio of not less than 1-for-5 and not more than 1-for-20, with the actual ratio to be determined by our board of directors. On November 15, 2022, the Reverse Split Committee of our Board of Directors approved a final split ratio of one-for-twenty (1:20) to regain compliance with the Nasdaq minimum bid price requirement. The liquidity of the shares of our common stock may be affected adversely by the reverse stock splits given the reduced number of shares that are outstanding following the reverse stock splits. In addition, the reverse stock splits increased the number of stockholders who own odd lots (less than 100 shares) of our common stock, creating the potential for such stockholders to experience an increase in the cost of selling their shares and greater difficulty effecting such sales.

Following a reverse stock split, the resulting market price of our common stock may not attract new investors, including institutional investors, and may not satisfy the investing requirements of those investors. Consequently, the trading liquidity of our common stock may not improve.

Although we believe that a higher market price of our common stock may help generate greater or broader investor interest, there can be no assurance that a reverse stock split, including the one that we expect to implement shortly prior to the completion of this offering, will result in a share price that will attract new investors, including institutional investors. In addition, there can be no assurance that the market price of our common stock will satisfy the investing requirements of those investors. As a result, the trading liquidity of our common stock may not necessarily improve.

Our corporate documents, Delaware law and certain warrants contain provisions that could discourage, delay or prevent a change in control of our company.

Provisions in our amended and restated certificate of incorporation and our amended and restated bylaws may discourage, delay or prevent a merger or acquisition involving us that our stockholders may consider favorable. For example, our amended and restated certificate of incorporation currently provides for a staggered board of directors, whereby directors serve for three-year terms, with approximately one-third of the directors coming up for reelection each year. Having a staggered board will make it more difficult for a third party to obtain control of our board of directors through a proxy contest, which may be a necessary step in an acquisition of us that is not favored by our board of directors. Additionally,

most of our warrants provide a Black Scholes value-based payment to the warrant holders in connection with certain transactions that may discourage, delay or prevent a merger or acquisition.

We are also subject to the anti-takeover provisions of Section 203 of the Delaware General Corporation Law. Under these provisions, if anyone becomes an "interested stockholder," we may not enter into a "business combination" with that person for three years without special approval, which could discourage a third party from making a takeover offer and could delay or prevent a change of control. For purposes of Section 203, "interested stockholder" means, generally, someone owning 15% or more of our outstanding voting stock or an affiliate of ours that owned 15% or more of our outstanding voting stock during the past three years, subject to certain exceptions as described in Section 203.

ITEM 1B. UNRESOLVED STAFF COMMENTS.

Not applicable.

ITEM 2. PROPERTIES.

As of December 31, 2022, our corporate headquarters and manufacturing facility are located in Phoenix, Arizona. For our corporate headquarters, we lease and occupy approximately 5,500 square feet of office space pursuant to a lease that commenced on December 1, 2019 and expires on November 30, 2024. For our manufacturing facility, we lease and occupy a separate facility with approximately 5,100 square feet of space pursuant to a lease that commenced on August 1, 2020 and expires on November 30, 2024. We believe that our existing facilities are adequate and meet our current needs for business, manufacturing and research.

ITEM 3. LEGAL PROCEEDINGS.

See Note 11, Contingencies in the Notes to Financial Statements in Item 8.— "Financial Statements and Supplementary Data," for information regarding legal proceedings, which is incorporated herein by reference.

ITEM 4. MINE SAFETY DISCLOSURES.

Not applicable.

PART II

ITEM 5. MARKET FOR REGISTRANT'S COMMON EQUITY, RELATED STOCKHOLDER MATTERS AND ISSUER PURCHASES OF EQUITY SECURITIES.

Market Information

Our common stock is traded on the Nasdaq Capital Market under the symbol “SNES.” Our common stock was initially listed for trading on the Nasdaq Capital Market on December 8, 2016.

Holders

As of March 15, 2023, there were approximately 694 holders of record of our common stock. Because many shares of our common stock are held by brokers and other institutions on behalf of stockholders, we are unable to determine the total number of beneficial owners represented by these holders of record.

Dividends

We have never declared or paid any cash dividends on our common stock. We currently intend to retain all available funds and any future earnings to support our operations and finance the growth and development of our business. We do not intend to pay cash dividends on our common stock for the foreseeable future. Any future determination related to our dividend policy will be made at the discretion of our board of directors and will depend upon, among other factors, our results of operations, financial condition, capital requirements, contractual restrictions, business prospects and other factors our board of directors may deem relevant.

Recent Sales of Unregistered Securities

None.

Purchases of Equity Securities by the Company

We withhold shares of common stock in connection with the vesting of restricted stock units to satisfy required tax withholding obligations when they occur. There were no purchases of our equity securities during the 12 months ended December 31, 2022.

ITEM 6. [RESERVED].

ITEM 7. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS.

You should read the following discussion and analysis of our financial condition and results of operations in conjunction with our financial statements and the notes thereto included elsewhere in this Annual Report on Form 10-K. In addition to historical financial information, the following discussion contains forward-looking statements that reflect our plans, estimates, beliefs and expectations that involve risks and uncertainties. Our actual results and the timing of events could differ materially from those discussed in the forward-looking statements. Factors that could cause or contribute to these differences include those discussed below and elsewhere in this Annual Report on Form 10-K, particularly in the sections of this report titled “Risk Factors” and “Cautionary Note Regarding Forward-Looking Statements.”

Overview

Since our inception, we have sustained significant operating losses in the course of our research and development activities and commercialization efforts and expect such losses to continue for the near future. We have generated limited revenue to date from product sales, research grants and licensing fees received under a former license. We have primarily funded our operations to date through the sale of equity securities, including convertible preferred stock, common stock and warrants to purchase common stock; and debt financing, consisting primarily of convertible notes.

Through December 31, 2022, we had received net proceeds of $84.3 million from our sales of common stock, preferred stock and issuance of convertible and other promissory notes, an aggregate of $1.7 million from research grants and licensing fees and an aggregate of $2.5 million in product sales. At December 31, 2022, we had an accumulated deficit of $122.2 million and cash and cash equivalents of $4.8 million.

On April 15, 2020, we also received cash proceeds of $645,700 from the Paycheck Protection Program (or "PPP") of the Coronavirus Aid, Relief, and Economic Security Act ("CARES Act"). We used the proceeds from the PPP Loan to retain employees, maintain payroll and make lease, interest and utility payments. On June 18, 2021, the Company received notification from BMO Harris Bank National Association as the lender in a promissory note pursuant to the CARES Act, that such loan was forgiven in full under the terms of the program.

We have incurred significant operating losses every year since our inception. Our net losses were $9.7 million and $8.3 million for the years ended December 31, 2022 and 2021, respectively. We expect to continue to incur significant expenses and generate operating losses for at least the next 12 months.

We will need additional funding to continue to fund our operations, achieve profitability and become cash flow positive, we will continue to seek additional financing. If such equity or debt financing is not available at adequate levels or on acceptable terms, we may need to delay, limit or terminate commercialization and development efforts or discontinue operations.

While it is difficult to measure the effect and impact of the COVID-19 pandemic on revenue over time, the travel and other restrictions that started in March 2020 resulted in a significant slowdown in our proof-of-concept field studies and sales efforts. We continue to experience delays on certain projects with certain businesses and government entities that have not yet returned to pre-COVID-19 pandemic operations. We have concerns about distributor, pest control operator, individual consumer, and government entity spending as a result of continued financial strain on certain industries due to the COVID-19 pandemic. This may delay or impede near term purchases of our products by these potential consumers. Additionally, while we have stocked certain long lead time inventory raw material ingredients, any prolonged impact on the suppliers we rely on for the purchase of these items by the COVID-19 pandemic could impact future manufacturing operations.

We have historically utilized, and intend to continue to utilize, various forms of stock-based awards in order to hire, retain and motivate talented employees, consultants and directors and encourage them to devote their best efforts to our business and financial success. In addition, we believe that our ability to grant stock-based awards is a valuable and necessary compensation tool that aligns the long-term financial interests of our employees, consultants and directors with the financial interests of our stockholders. As a result, a significant portion of our operating expenses includes stock-based compensation expense. Stock-based compensation expense has been, and will continue to be for the foreseeable future, a significant recurring expense in our business and an important part of our compensation strategy. Specifically, our stock-based compensation expense for the year ended December 31, 2022 and December 31, 2021 was $0.7 million and $0.8 million, respectively, which represented 7.0% and 8.3%, respectively, of our total operating expenses for those periods.

Results of Operations

The following tables provide financial and operational information to be considered in conjunction with management's discussion and analysis of results of operations.

The results of operations are as following for the years presented (dollars in thousands):

	Years Ended December 31,		% Increase (Decrease)
	2022	2021	
Revenues, net	$ 1,019	$ 600	70 %
Cost of sales	555	356	56 %
Gross profit	464	244	90 %
Operating expenses:			
Research and development	1,859	1,954	(5)%
Selling, general and administrative	8,279	7,224	15 %
Total operating expenses	10,138	9,178	10 %
Loss from operations	(9,674)	(8,934)	8 %
Other income (expense), net	(21)	666	(103)%
Net loss	$ (9,695)	$ (8,268)	17 %

Revenues, net

Sales, which are net of any discounts and promotions, were $1.0 million for the year ended December 31, 2022, compared to $576,000 for year ended December 31, 2021. Sales increased by $443,000 in 2022 driven by an increase of $282,000, or 60%, from our e-commerce vertical market, combined with a $161,000, or 28%, increase driven by sales to pest management professionals and zoos and sanctuaries.

Also included in revenues in 2021, was $24,000 of grant revenue for jobs created and related new employee training in the City of Phoenix, Arizona during the year.

Cost of Sales

Cost of sales consist primarily of the cost of products sold, including scrap and reserves for obsolescence and was $555,000, or 54.5% of sales, for the year ended December 31, 2022, compared to $356,000, or 61.8% of sales, exclusive of grant revenue, for the year ended December 31, 2021. Higher costs of sales is driven by increased sales combined with the modification of our shipping policies in April 2022 to significantly reduce free shipping to customers.

Gross Profit

Gross profit for the year ended December 31, 2022 was $464,200, or 45.5%, compared to a gross profit of $244,000, or 42.4%, excluding grant revenue, for the year ended December 31, 2021. The increase in gross profit was primarily due to increased sales volume, which reflects price increases implemented in April 2022, and the impact related to the significant reduction of free shipping to customers both contributed to the improvement in gross profit margin.

Research and Development Expenses

Research and development expenses are expensed as incurred and consist primarily of costs incurred in connection with the research and development of ContraPest and our other product candidates. Such costs include the following:

- employee related expenses, including salaries, related benefits, travel and stock-based compensation expense for employees engaged in research and development functions, including that portion of manufacturing not included in cost of goods sold;
- expenses incurred in connection with the development of our product candidates, including related regulatory and production expenses; and
- facilities, depreciation, and other expenses, which include direct and allocated expenses for rent and maintenance of facilities, insurance, and supplies.

Research and development expense consisted of the following (in thousands):

	Years Ended December 31,		Increase (Decrease)
	2022	2021	
Personnel related, including stock-based compensation	$ 996	$ 847	$ 149
Professional fees	284	371	(87)
Facility related	108	99	9
Depreciation expense	128	258	(130)
Other	343	379	(36)
Total	$ 1,859	$ 1,954	$ (95)

Research and development expenses were $1.9 million for the year ended December 31, 2022, compared to $2.0 million for the year ended December 31, 2021. The $95,000 decrease was primarily driven by lower depreciation expense and lower legal fees related to research and development matters, offset by higher personnel costs, as personnel turnover was higher in 2022 compared to 2021, and higher utility costs related to increased production.

Selling, General and Administrative Expenses

Selling, general and administrative expenses consist primarily of salaries and related costs, including stock-based compensation, for personnel in executive, finance, sales, marketing and administrative functions. Selling, general and

administrative expenses also include direct and allocated facility-related costs as well as professional fees for legal, consulting, accounting and audit services.

Selling, general and administrative expense consisted of the following (in thousands):

	Years Ended December 31,		Increase (Decrease)
	2022	2021	
Personnel related, including stock-based compensation	$ 3,851	$ 3,940	$ (89)
Professional fees	2,193	1,179	1,014
Marketing	631	584	47
Facility-related	155	156	(1)
Depreciation expense	55	46	9
Other	1,394	1,319	75
Total	$ 8,279	$ 7,224	$ 1,055

Selling, general and administrative expenses were $8.3 million for the year ended December 31, 2022, compared to $7.2 million for the year ended December 31, 2021. The $1.1 million increase was driven by higher professional fees related to legal matters, consulting related to advertising and marketing and recruiting costs related to employee turnover. Additionally, costs related to software licenses and marketing efforts for digital and social media outlets were higher in 2022 when compared to 2021, which was partially offset by lower costs related to the timing of personnel changes. In 2022, personnel-related costs includes severance costs of $356,000 related to the termination of the former Chief Executive Officer, while 2021 includes severance-related costs related to certain employee terminations and bonuses.

Other Income (Expense), Net

Other income (expense), net, consists of interest income and expense, as well as any recognized gains or losses related to the sale of fixed assets and other miscellaneous items. For the year ended December 31, 2022, other expense, net largely consisted of a $28,000 loss realized on the sale of research and development equipment, while other income, net for the year ended December 31, 2021 largely consisted of the PPP loan forgiveness in the amount of $645,700.

Liquidity and Capital Resources

Since our inception, we have sustained significant operating losses in the course of our research and development activities and commercialization efforts and expect such losses to continue for the near future. We have generated limited revenue to date from product sales, research grants and licensing fees received under a former license. We have primarily funded our operations to date through the sale of equity securities, including convertible preferred stock, common stock and warrants to purchase common stock; and debt financing, consisting primarily of convertible notes.

Through December 31, 2022, we had received net proceeds of $84.3 million from our sales of common stock, preferred stock and issuance of convertible and other promissory notes, an aggregate of $1.7 million from research grants and licensing fees and an aggregate of $2.5 million in product sales. At December 31, 2022, we had an accumulated deficit of $122.2 million and cash and cash equivalents of $4.8 million.

In April 2020, we received cash proceeds of $645,700 from the PPP of the CARES Act, which we used to retain employees, maintain payroll and make lease, interest and utility payments. This loan was fully forgiven under terms of the PPP in June 2021.

Our ultimate success depends upon the outcome of a combination of factors, including the following: (i) successful commercialization of ContraPest and maintaining and obtaining regulatory approval of our products and product candidates; (ii) market acceptance, commercial viability and profitability of ContraPest and other products; (iii) the ability to market our products and establish an effective sales force and marketing infrastructure to generate significant revenue; (iv) the success of our research and development; (v) the ability to retain and attract key personnel to develop, operate and grow our business; and (vi) our ability to meet our working capital needs.

Based upon our current operating plan, we expect that cash and cash equivalents at December 31, 2022, in combination with anticipated revenue and any additional sales of our equity securities, will be sufficient to fund our current operations for at least the next 12 months. We have evaluated and will continue to evaluate our operating expenses and will concentrate our resources toward the successful commercialization of ContraPest in the United States. However, if

anticipated revenue targets and margin targets are not achieved or expenses are more than we have budgeted, we may need to raise additional financing before that time. If we need more financing, including within the next 12 months, and we are unable to raise the necessary capital through the sale of our securities, we may be required to take other measures that could impair our ability to be successful and operate as a going concern. In any event, we may require additional capital in order to fund our operating losses and research and development activities before we become profitable and may opportunistically raise capital. We may never achieve profitability or generate positive cash flows, and unless and until we do, we will continue to need to raise capital through equity or debt financing. If such equity or debt financing is not available at adequate levels or on acceptable terms, we may need to delay, limit or terminate commercialization and development efforts or discontinue operations.

Additional Funding Requirements

We expect our expenses to continue or increase in connection with our ongoing activities, particularly as we focus on marketing and sales of ContraPest. Further, continuing effects of the COVID-19 pandemic may delay the completion of field studies and achievement of sales, which will further increase our need for financing. In addition, we will continue to incur costs associated with operating as a public company.

In particular, we expect to incur substantial and increased expenses as we:

- work to maximize market acceptance for, and generate sales of, our products, including by conducting field demonstrations at potential lead customers;
- explore strategic partnerships to enable us to penetrate additional target markets and geographical locations;
- manage the infrastructure for sales, marketing and distribution of ContraPest and any other product candidates for which we may receive regulatory approval;
- seek additional regulatory approvals for ContraPest, including to more fully expand the market and use for ContraPest and, if we believe there is commercial viability, for our other product candidates;
- further develop our manufacturing processes to contain costs while being able to scale to meet future demand of ContraPest and any other product candidates for which we receive regulatory approval;
- continue product development of ContraPest and advance our research and development activities and, as our operating budget permits, advance the research and development programs for other product candidates;
- maintain and protect our intellectual property portfolio; and
- add operational, financial and management information systems and personnel, including personnel to support our product development and commercialization efforts and operations as a public company.

We believe we will need additional financing to fund these continuing and additional expenses.

Cash Flows

The following table summarizes our sources and uses of cash for each of the years presented (in thousands):

	Years Ended December 31,	
	2022	**2021**
Cash and cash equivalents, beginning of year	$ 9,326	$ 3,643
Net cash provided by (used in):		
Operating activities	(8,577)	(7,779)
Investing activities	(170)	(99)
Financing activities	4,196	13,561
Net change in cash and cash equivalents	(4,551)	5,683
Cash and cash equivalents, end of year	$ 4,775	$ 9,326

Cash Flows from Operating Activities—Cash flows from operating activities are generally determined by the amount and timing of cash received from customers and payments made to vendors, as well as the nature and amount of non-cash items, including depreciation and amortization and stock-based compensation included in operating results during a given period.

During 2022, net cash flows used in operating activities consisted of our net loss of $9.7 million, offset by changes in our operating assets and liabilities of $191,000 and non-cash charges of $928,000. Our net loss was primarily attributed to research and development activities and our selling, general and administrative expenses, as we generated limited product sales and grant revenue during the year. Net cash generated by changes in our operating assets and liabilities consisted primarily of a $188,000 increase in accrued expenses and accounts payable, a $148,000 decrease in net inventories, and a $44,000 increase in deferred revenue, offset by increases of $148,000 in prepaid expenses and $42,000 in accounts receivable.

During 2021, net cash flows used in operating activities consisted of our net loss of $8.3 million, offset by changes in our operating assets and liabilities of $67,000 and non-cash charges of $422,000. Our net loss was primarily attributed to research and development activities and our selling, general and administrative expenses, as we generated limited product sales and grant revenue during the year. Net cash generated by changes in our operating assets and liabilities consisted primarily of a $215,000 increase in accrued expenses and accounts payable and a $12,000 decrease in other assets, offset by increases of $56,000 in net inventories, $52,000 in prepaid expenses and $52,000 in net accounts receivable.

Cash Flows from Investing Activities—Cash flows used in investing activities primarily consist of the purchase of property and equipment, offset by any proceeds received in connection with sales of property and equipment. In 2022, our purchases were $74,000 higher than 2021, slightly offset by an increase of $3,000 in proceeds received on sales of property and equipment.

Cash Flows from Financing Activities—Financing activities provide cash for both day-to-day operations and capital requirements as needed. In 2022, net cash provided by financing activities consisted of $4.2 million in net proceeds from the issuance of common stock, partially offset by $32,000 of repayments related to notes payable and finance lease obligations. In 2021, net cash provided by financing activities consisted of $12.4 million in net proceeds from the issuance of common stock and $1.3 million in proceeds from warrant exercises, partially offset by $93,000 of repayments related to notes payable and finance lease obligations.

Critical Accounting Policies and Estimates

Our financial statements are prepared in accordance with generally accepted accounting principles in the United States, or U.S. GAAP. The preparation of our financial statements and related disclosures requires us to make estimates and judgments that affect the reported amounts of assets, liabilities, revenue, costs and expenses, and the disclosure of contingent assets and liabilities in our financial statements. We base our estimates on historical experience, known trends and events and various other factors that we believe are reasonable under the circumstances, the results of which form the basis for making judgments about the carrying values of assets and liabilities that are not readily apparent from other sources. We evaluate our estimates and assumptions on an ongoing basis. Our actual results may differ from these estimates under different assumptions or conditions.

We believe that the following critical accounting policies affect our more significant judgments and estimates used in the preparation of our financial statements:

Inventory Valuation. We value inventory at the lower of cost or net realizable value. In addition, we write down any obsolete, unmarketable or otherwise impaired inventory to net realizable value. The determination of obsolete, or excess inventory requires us to estimate the future demand for our products. The estimate of future demand is compared to inventory levels to determine the amount, if any, of obsolete or excess inventory. If actual market conditions are less favorable than those we projected at the time the inventory was written down, additional inventory write-downs may be required. Inventory valuation is re-evaluated on a quarterly basis.

Stock-Based Compensation. Stock-based compensation expenses is measured at the grant date, based on the estimated fair value of the award using the Black-Scholes option pricing model for stock options and market price for restricted stock units. The use of the Black-Scholes option pricing model, requires certain estimates, including expected term of options granted, the method of calculating expected volatilities and the risk-free interest rate used in the option-pricing model. The resulting calculated fair value of stock options is recognized as compensation expenses over the requisite service period, which is generally the vesting period. When there are changes to the assumptions used in the option-pricing model, including fluctuations in the market prices of our common stock, there will be variations in the calculated fair value of our

future stock option awards, which results in variation in the stock-based compensation expensed recognized. Additionally, any modification of an award that increases its fair value will require us to recognize additional expense.

Income Taxes. We record deferred income taxes for temporary difference between the amounts of assets and liabilities for financial and tax reporting purposes and we record a valuation allowance to reduce our deferred tax assets to the amount that is more likely than not to be realized. We also regularly conduct a comprehensive review of our uncertain tax positions. In this regard, an uncertain tax position represents our expected treatment of a tax position taken in a filed tax return, or planned to be taken in a future tax return, that has not been reflected in measuring income tax expense for financial reporting purposes. Until these positions are sustained by the taxing authorities, we do not recognize the tax benefit resulting from such positions and report the tax effect for uncertain tax positions in our balance sheets.

Off-Balance Sheet Arrangements

None.

ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK.

Not applicable.

ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA.

The following financial statements and report are included in Item 8:

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Board of Directors and
Stockholders of SenesTech, Inc.

Opinion on the Financial Statements

We have audited the accompanying balance sheets of SenesTech, Inc. (the Company) as of December 31, 2022 and 2021, and the related statements of operations and comprehensive loss, stockholders' equity, and cash flows for each of the years in the two-year period ended December 31, 2022, and the related notes (collectively referred to as the financial statements). In our opinion, the financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2022 and 2021, and the results of its operations and its cash flows for each of the years in the two-year period ended December 31, 2022, in conformity with accounting principles generally accepted in the United States of America.

Going Concern

The accompanying financial statements have been prepared assuming that the Company will continue as a going concern. As discussed in Note 1 to the financial statements, the Company suffered a net loss from operations and has a net capital deficiency, which raises substantial doubt about its ability to continue as a going concern. Management's plans regarding those matters are also described in Note 1. The financial statements do not include any adjustments that might result from the outcome of this uncertainty.

Basis for Opinion

These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on the Company's financial statements based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (PCAOB) and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud. The Company is not required to have, nor were we engaged to perform, an audit of its internal control over financial reporting. As part of our audits, we are required to obtain an understanding of internal control over financial reporting, but not for the purpose of expressing an opinion on the effectiveness of the Company's internal control over financial reporting. Accordingly, we express no such opinion.

Our audits included performing procedures to assess the risks of material misstatement of the financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the financial statements. We believe that our audits provide a reasonable basis for our opinion.

Critical Audit Matter

The critical audit matter communicated below is a matter arising from the current period audit of the financial statements that were communicated or required to be communicated to the audit committee and that: (1) relate to accounts or disclosures that are material to the financial statements and (2) involved our especially challenging, subjective, or complex judgments. The communication of critical audit matters does not alter in any way our opinion on the financial statements, taken as a whole, and we are not, by communicating the critical audit matter below, providing separate opinions on the critical audit matter or on the accounts or disclosures to which they relate.

Equity Transactions

As discussed in Note 9 to the financial statements, the Company issues options and warrants. The proper valuation of options and warrants requires significant management judgment in determining the volatility and method used to calculate the option and warrant values.

To evaluate the appropriateness of the model and estimates determined by management, we examined and evaluate the model, and the time period and stock prices used in determining the valuation of the options and warrants issued.

/s/ M&K CPAS, PLLC

We have served as the Company's auditor since 2017.

Houston, TX
March 16, 2023

SENESTECH, INC.
BALANCE SHEETS
(In thousands, except share and per share data amounts)

	As of December 31,	
	2022	**2021**
ASSETS		
Current assets:		
Cash and cash equivalents	$ 4,775	$ 9,326
Accounts receivable, net	113	77
Prepaid expenses	378	230
Inventory, net	853	1,001
Total current assets	6,119	10,634
Right to use assets, operating leases	347	511
Property and equipment, net	294	334
Other noncurrent assets	22	22
Total assets	**$ 6,782**	**$ 11,501**
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Short-term debt	$ —	$ 32
Accounts payable	540	333
Accrued expenses	560	578
Current portion of operating lease liability	180	164
Deferred revenue	44	—
Total current liabilities	1,324	1,107
Operating lease liability, less current portion	179	359
Total liabilities	1,503	1,466
Commitments and contingencies (see notes)		
Stockholders' equity:		
Preferred stock, $0.001 par value, 10,000,000 shares authorized, none issued and outstanding	—	—
Common stock, $0.001 par value, 100,000,000 shares authorized, 809,648 and 610,364 shares issued and outstanding as of December 31, 2022 and 2021, respectively	1	1
Additional paid-in capital	127,481	122,542
Accumulated deficit	(122,203)	(112,508)
Total stockholders' equity	5,279	10,035
Total liabilities and stockholders' equity	**$ 6,782**	**$ 11,501**

See accompanying notes to the financial statements.

SENESTECH, INC.
STATEMENTS OF OPERATIONS AND COMPREHENSIVE LOSS
(In thousands, except share and per share data)

	Years Ended December 31,	
	2022	**2021**
Revenues:		
Product sales, net	$ 1,019	$ 576
Grant revenue	—	24
Total revenues	1,019	600
Cost of sales	555	356
Gross profit	464	244
Operating expenses:		
Research and development	1,859	1,954
Selling, general and administrative	8,279	7,224
Total operating expenses	10,138	9,178
Loss from operations	(9,674)	(8,934)
Other income (expense):		
Interest income	7	4
Interest expense	(2)	(11)
Payroll Protection Program loan forgiveness	—	651
Miscellaneous income (expense)	(26)	22
Other income (expense), net	(21)	666
Net loss and comprehensive loss	(9,695)	(8,268)
Weighted average shares outstanding - basic and diluted	625,401	559,591
Loss per share - basic and diluted	$ (15.50)	$ (14.77)

See accompanying notes to the financial statements.

SENESTECH, INC.
STATEMENTS OF CHANGES IN STOCKHOLDERS' EQUITY
(In thousands, except shares)

	Common Stock		Additional Paid-In Capital	Accumulated Deficit	Total
	Shares	Amount			
Balance as of December 31, 2020	254,976	$ —	$ 108,124	$ (104,240)	$ 3,884
Stock-based compensation	—	—	765	—	765
Net proceeds received for issuance of common stock	308,193	—	12,421	—	12,421
Net proceeds received for exchange of warrants for common stock	46,148	—	1,250	—	1,250
Issuance of common stock for services	1,047	—	—	—	—
Shares forfeited for payment of employee withholding taxes related to share based awards	—	—	(17)	—	(17)
Net loss	—	—	—	(8,268)	(8,268)
Balance as of December 31, 2021	610,364	1	122,542	(112,508)	10,035
Stock-based compensation	—	—	707	—	707
Net proceeds received for issuance of common stock and prefunding of warrants	67,572	—	4,228	—	4,228
Issuance of common stock upon exercise of warrants	131,000	—	—	—	—
Issuance of common stock for services	679	—	4	—	4
Issuance of common stock for fractional shares in the 20:1 reverse stock split	33	—	—	—	—
Net loss	—	—	—	(9,695)	(9,695)
Balance as of December 31, 2022	809,648	$ 1	$ 127,481	$ (122,203)	$ 5,279

See accompanying notes to the financial statements.

SENESTECH, INC.
STATEMENTS OF CASH FLOWS
(In thousands)

	Years Ended December 31,	
	2022	**2021**
Cash flows from operating activities:		
Net loss	$ (9,695)	$ (8,268)
Adjustments to reconcile net loss to net cash used in operating activities:		
Depreciation and amortization	183	303
Stock-based compensation	711	765
Paycheck Protection Program loan forgiveness	—	(646)
Loss on sale of equipment	28	—
Bad debt expense	6	—
Changes in operating assets and liabilities:		
Accounts receivable	(42)	(52)
Other assets	—	12
Prepaid expenses	(148)	(52)
Inventory	148	(56)
Accounts payable	206	(71)
Accrued expenses	(18)	286
Deferred revenue	44	—
Net cash used in operating activities	(8,577)	(7,779)
Cash flows from investing activities:		
Proceeds received on sale of property and equipment	4	1
Purchase of property and equipment	(174)	(100)
Net cash used in investing activities	(170)	(99)
Cash flows from financing activities:		
Proceeds from the issuance of common stock, net	4,228	12,421
Repayments of notes payable	(5)	(39)
Repayments of finance lease obligations	(27)	(54)
Proceeds from the exercise of warrants	—	1,250
Payment of employee withholding taxes related to share based awards	—	(17)
Net cash provided by financing activities	4,196	13,561
Increase (decrease) in cash and cash equivalents	(4,551)	5,683
Cash and cash equivalents, beginning of year	9,326	3,643
Cash and cash equivalents, end of year	$ 4,775	$ 9,326
Supplemental disclosures of cash flow information:		
Cash paid for:		
Interest paid	$ 1	$ 11
Income taxes paid	—	—

See accompanying notes to the financial statements.

SENESTECH, INC.
NOTES TO THE FINANCIAL STATEMENTS

NOTE 1: BASIS OF PRESENTATION

Nature of Business

SenesTech, Inc. (referred to in this report as "SenesTech," the "Company," "we" or "us") was incorporated in the state of Nevada in July 2004. On November 15, 2015, the Company subsequently reincorporated in the state of Delaware. Our corporate headquarters and manufacturing site are in Phoenix, Arizona. We have developed and are commercializing a global, proprietary technology for managing animal pest populations, initially rat populations, through fertility control with our product known as ContraPest.

ContraPest is a liquid bait containing the active ingredients 4-vinylcyclohexene diepoxide and triptolide. ContraPest limits reproduction of male and female rats beginning with the first breeding cycle following consumption. ContraPest is being marketed for use in controlling Norway and roof rat populations. In addition to the EPA registration of ContraPest in the United States, we must obtain registration from the various state regulatory agencies prior to selling in each state. To date, we have received registration for ContraPest in all 50 states and the District of Columbia, 48 of which have approved the removal of the Restricted Use designation, as well as the District of Columbia and five major U.S. territories.

Reverse Stock Split

On November 15, 2022, we amended our amended and restated certificate of incorporation to effect a 1-for-20 reverse split of our issued and outstanding shares of common stock. The accompanying financial statements and notes thereto give retrospective effect to the reverse stock split for all periods presented. All issued and outstanding common stock, options and warrants exercisable for common stock, restricted stock units and per share amounts contained in our financial statements have been retrospectively adjusted.

Going Concern

Although our audited financial statements for the years ended December 31, 2022 and December 31, 2021 were prepared under the assumption that we would continue our operations as a going concern, the report of our independent registered public accounting firm that accompanies our financial statements for the years ended December 31, 2022 and December 31, 2021 contains a going concern qualification in which such firm expressed substantial doubt in our ability to continue as a going concern without additional capital from becoming available, based on the financial statements at that time. Specifically, as noted above, we have incurred operating losses since our inception, and we expect to continue to incur significant expenses and operating losses for the foreseeable future. These prior losses and expected future losses have had, and will continue to have, an adverse effect on our financial condition. If we encounter continued issues or delays in the commercialization of ContraPest, our prior losses and expected future losses could have an adverse effect on our financial condition and negatively impact our ability to fund continued operations, obtain additional financing in the future and continue as a going concern. There are no assurances that such financing, if necessary, will be available to us at all or will be available in sufficient amounts or on reasonable terms. Our financial statements do not include any adjustments that may result from the outcome of this uncertainty. If we are unable to generate additional funds in the future through financings, sales of our products, licensing fees, royalty payments or from other sources or transactions, we will exhaust our resources and will be unable to continue operations.

Need for Additional Capital

Since our inception, we have sustained significant operating losses in the course of our research and development and commercialization activities and expect such losses to continue for the near future. We have generated limited revenue to date from product sales, research grants and licensing fees from a former license. We have primarily funded our operations to date through the sale of equity securities, including convertible preferred stock, common stock and warrants to purchase common stock; and debt financing, consisting primarily of convertible notes. As of December 31, 2022, we had an accumulated deficit of $122.2 million and cash and cash equivalents of $4.8 million.

In April 2020, we received cash proceeds of $645,700 from the Paycheck Protection Program ("PPP") of the Coronavirus Aid, Relief, and Economic Security Act ("CARES Act"). We used the proceeds from the PPP loan to retain employees,

maintain payroll and make lease, interest and utility payments. In June 2021, the Company received notification from BMO Harris Bank National Association as the lender in a promissory note pursuant to the CARES Act, that this loan was forgiven in full under the terms of the program.

Our ultimate success depends upon the outcome of a combination of factors, including the following: (i) successful commercialization of ContraPest and maintaining and obtaining regulatory approval of our products and product candidates; (ii) market acceptance, commercial viability and profitability of ContraPest and other products; (iii) the ability to market our products and establish an effective sales force and marketing infrastructure to generate significant revenue; (iv) the success of our research and development; (v) the ability to retain and attract key personnel to develop, operate and grow our business; and (vi) our ability to meet our working capital needs.

Based upon our current operating plan, we expect that cash and cash equivalents at December 31, 2022, in combination with anticipated revenue and any additional sales of our equity securities, will be sufficient to fund our current operations for at least the next 12 months. We have evaluated and will continue to evaluate our operating expenses and will concentrate our resources toward the successful commercialization of ContraPest in the United States. However, if anticipated revenue targets and margin targets are not achieved or expenses are more than we have budgeted, we may need to raise additional financing before that time. If we need more financing, including within the next 12 months, and we are unable to raise necessary capital through the sale of our securities, we may be required to take other measures that could impair our ability to be successful and operate as a going concern. In any event, we may require additional capital in order to fund our operating losses and research and development activities before we become profitable and may opportunistically raise capital. We may never achieve profitability or generate positive cash flows, and unless and until we do, we will continue to need to raise capital through equity or debt financing. If such equity or debt financing is not available at adequate levels or on acceptable terms, we may need to delay, limit or terminate commercialization and development efforts or discontinue operations.

Use of Estimates

The preparation of our financial statements and related disclosures in accordance with U.S. GAAP requires us to make estimates and judgments that affect the reported amounts of assets, liabilities, revenue, costs and expenses, and the disclosure of contingent assets and liabilities in our financial statements. We base our estimates on historical experience, known trends and events and various other factors that we believe are reasonable under the circumstances, the results of which form the basis for making judgments about the carrying values of assets and liabilities that are not readily apparent from other sources. We evaluate our estimates and assumptions on an ongoing basis. Our actual results may differ from these estimates under different conditions.

Reclassifications

To conform with the 2022 presentation, we have reclassified (i) Deposits of $22,000 with Other noncurrent assets and (ii) provided separate presentation of Current portion of operating lease liability of $164,000 from Operating lease liability in the balance sheet as of December 31, 2021. In addition, we have reclassified $22,000 to Miscellaneous income from Paycheck Protection Program loan forgiveness in the statement of operations and comprehensive loss for the year ended December 31, 2021. These reclassifications had no impact on our statement of cash flows for the year ended December 31, 2021.

NOTE 2: SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Cash and Cash Equivalents

Highly liquid investments with maturities of three months or less as the date of acquisition are classified as cash equivalents, of which we had $4.4 million and $8.8 million as of December 31, 2022 and 2021, respectively, included within Cash and cash equivalents in the balance sheets.

Accounts Receivable

Accounts receivable are recorded at invoiced amounts based on standard prices and do not bear interest. We provide an allowance for doubtful receivables equal to the estimated uncollectible amounts. That estimate is based on historical

collection experience, current economic and market conditions and a review of the current status of each customer's trade accounts receivable. Provisions for uncollectible accounts receivable are charged to Selling, general and administrative expense, with an offsetting credit to the allowance for uncollectible accounts.

Inventories

Inventories consist of raw materials, work in progress and finished goods and are stated at the lower of cost or market value, using the first-in, first-out convention. Cost includes the acquired cost of raw materials, with work-in-progress and finished goods including the application of labor and overhead costs related to the manufacturing process. Raw materials are stocked to reduce the risk of impact on manufacturing for any potential supply interruptions or long lead times on certain ingredients.

Reserves for obsolete inventory consist of reserves primarily related to obsolete product containers and delivery systems.

Property and Equipment

Property and equipment are stated at cost less accumulated depreciation. Equipment held under finance leases are stated at the present value of minimum lease payments less accumulated amortization.

Depreciation on property and equipment is computed using the straight-line method over the estimated useful lives of the respective assets as follows:

Research and development equipment	5 years
Office and computer equipment	3 years
Autos	5 years
Furniture and fixtures	7 years

The cost of leasehold improvements is amortized over the life of the improvement or the term of the lease, whichever is shorter. Equipment held under finance leases are amortized over the shorter of the lease term or estimated useful life of the asset. The Company incurs maintenance costs on its major equipment. Repair and maintenance costs are expensed as incurred.

Impairment of Long-Lived Assets

Long-lived assets, such as property and equipment, are reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount of an asset may not be recoverable. If circumstances require long-lived assets or asset groups to be tested for possible impairment, the Company compares the undiscounted cash flows expected to be generated from the use of the asset or asset group to its carrying amount. If the carrying amount of the long-lived asset or asset group is not recoverable on an undiscounted cash flow basis, an impairment charge is recognized to the extent that the carrying amount exceeds its fair value. Fair value is determined through various valuation techniques, such as discounted cash flow models and the use of third-party independent appraisals. We have not recorded an impairment of long-lived assets since our inception.

Revenue Recognition

In accordance with Accounting Standards Codification ("ASC") 606 — *Revenue from Contracts with Customers* ("ASC 606"), we recognize revenue from the commercial sales of products, licensing agreements and contracts to perform pilot studies by applying the following steps: (1) identify the contract with a customer; (2) identify the performance obligations in the contract; (3) determine the transaction price; (4) allocate the transaction price to each performance obligation in the contract; and (5) recognize revenue when each performance obligation is satisfied.

We recognize revenue when product is shipped at a fixed selling price on payment terms of 30 to 120 days from invoicing. We recognize other revenue earned from pilot studies, consulting and implementation services upon the performance of specific services under the respective service contract.

We derive revenue primarily from commercial sales of products, net of discounts and promotions, as well as consulting and implementation services provided in conjunction with our product deployments.

Research and Development

Research and development costs are expensed as incurred. Research and development expenses primarily consist of salaries and benefits for research and development employees, stock-based compensation, consulting fees, lab supplies, costs incurred related to conducting scientific trials and field studies, regulatory compliance costs, as well as manufacturing costs associated with process improvement and other research. Research and development expenses include an allocation of facilities related costs, including depreciation of equipment.

Stock-based Compensation

Stock-based awards, consisting of stock options and restricted stock units expected to be settled in shares of our common stock, are recorded as equity awards. The grant date fair value of these awards is measured using the Black-Scholes option pricing model for stock options and grant date market value for restricted stock units. We expense the grant date fair value of our stock-based awards on a straight-line basis over their respective vesting periods.

Advertising Costs

Advertising costs are expensed as incurred and was $369,000 and $431,000 for the years ended December 31, 2022 and 2021, respectively.

Income Taxes

We account for income taxes under the asset and liability method, which requires the recognition of deferred tax assets and liabilities for the expected future tax consequences of events that have been included in the financial statements. Under this method, deferred tax assets and liabilities are determined based on the differences between the financial statements and tax bases of assets and liabilities and net operating loss carryforwards using enacted tax rates in effect for the year in which the differences are expected to reverse. The effect of a change in tax rates on deferred tax assets and liabilities is recognized in the period that includes the enactment date.

We record net deferred tax assets to the extent we believe these assets will more likely than not be realized. These deferred tax assets are subject to periodic assessments as to recoverability and if it is determined that it is more likely than not that the benefits will not be realized, valuation allowances are recorded which would increase the provision for income taxes. In making such determination, we consider all available positive and negative evidence, including future reversals of existing taxable temporary differences, projected future taxable income, tax planning strategies and recent financial operations. We currently maintain a full valuation allowance against its deferred tax assets.

We apply a more-likely-than-not recognition threshold for all tax uncertainties. Only those benefits that have a greater than fifty percent likelihood of being sustained upon examination by the taxing authorities are recognized. Based on our evaluation, we have concluded there are no significant uncertain tax positions requiring recognition in our financial statements.

We recognize interest and/or penalties related to uncertain tax positions in income tax expense. There are no uncertain tax positions as of December 31, 2022 or December 31, 2021 and as such, no interest or penalties were recorded in income tax expense.

Comprehensive Loss

We have no other comprehensive income items for the periods presented. As a result, our net loss and comprehensive loss were the same for all periods presented and a separate statement of comprehensive loss is not included in the accompanying financial statements.

NOTE 3: BALANCE SHEET COMPONENTS

Accounts Receivable, Net

Accounts receivable, net consist of the following (in thousands):

	As of December 31,	
	2022	2021
Accounts receivable	$ 119	$ 77
Allowance for uncollectible accounts	(6)	—
Accounts receivable, net	$ 113	$ 77

The following is the activity in the allowance for uncollectible accounts (in thousands):

	Years Ended December 31,	
	2022	2021
Balance as of beginning of year	$ —	$ —
Increase in provision	8	—
Amounts written off, less recoveries	(2)	—
Balance as of end of year	$ 6	$ —

Inventory, Net

Inventory, net consist of the following (in thousands):

	As of December 31,	
	2022	2021
Raw materials	$ 772	$ 937
Work in progress	0	5
Finished goods	99	88
Total inventory	871	1,030
Reserve for obsolescence	(18)	(29)
Inventory, net	$ 853	$ 1,001

The following is the activity in the reserve for obsolescence (in thousands):

	Years Ended December 31,	
	2022	2021
Balance as of beginning of year	$ 29	$ 123
Increase in reserve	—	13
Amounts relieved	(11)	(107)
Balance as of end of year	$ 18	$ 29

Prepaid Expenses

Prepaid expenses consist of the following (in thousands):

	As of December 31,	
	2022	2021
Software licenses	$ 157	$ 14
Marketing programs and conferences	74	66
Insurance	61	109
Patents	39	41
Professional services	41	—
Other	6	—
Total prepaid expenses	$ 378	$ 230

Property and Equipment, Net

Property and equipment, net consist of the following (in thousands):

	As of December 31,	
	2022	2021
Research and development equipment	$ 1,558	$ 1,425
Office and computer equipment	800	762
Autos	54	54
Furniture and fixtures	41	41
Leasehold improvements	119	112
Total in service	2,572	2,394
Accumulated depreciation and amortization	(2,283)	(2,105)
Total in service, net	289	289
Construction in progress	5	45
Property and equipment, net	$ 294	$ 334

During the years ended December 31, 2022 and 2021, depreciation and amortization expense was $183,000 and $303,000, respectively.

Accrued Expenses

Accrued expenses consist of the following (in thousands):

	As of December 31,	
	2022	2021
Compensation, severance and related benefits	$ 497	$ 524
Legal services	36	17
Product warranty	18	18
Personal property and franchise tax	6	5
Other	3	14
Total accrued expenses	$ 560	$ 578

NOTE 4: FAIR VALUE MEASUREMENTS

The accounting guidance for fair value, among other things, establishes a consistent framework for measuring fair value and expands disclosure for each major asset and liability category measured at fair value on either a recurring or nonrecurring basis. Fair value is defined as the price that would be received to sell an asset or paid to transfer a liability (an exit price) in an orderly transaction between market participants at the reporting date. The framework for measuring fair value consists of a three-level valuation hierarchy that prioritizes the inputs to valuation techniques used to measure fair value based upon whether such inputs are observable or unobservable. Observable inputs reflect market data obtained from independent sources, while unobservable inputs reflect market assumptions made by the reporting entity. The three-level hierarchy for the inputs to valuation techniques is briefly summarized as follows:

Level 1 — Inputs are unadjusted, quoted prices in active markets for identical assets or liabilities at the measurement date;

Level 2 — Inputs are observable, unadjusted quoted prices in active markets for similar assets or liabilities, unadjusted quoted prices for identical or similar assets or liabilities in markets that are not active, or other inputs that are observable or can be corroborated by observable market data for substantially the full term of the related assets or liabilities; and

Level 3 — Unobservable inputs that are significant to the measurement of the fair value of the assets or liabilities that are supported by little or no market data.

An asset's or liability's fair value measurement level within the fair value hierarchy is based on the lowest level of any input that is significant to the fair value measurement. Valuation techniques used need to maximize the use of observable inputs and minimize the use of unobservable inputs.

Assets and liabilities measured at fair value are based on one or more of the following three valuation techniques:

A. Market approach: Prices and other relevant information generated by market transactions involving identical or comparable assets or liabilities.

B. Cost approach: Amount that would be required to replace the service capacity of an asset (replacement cost).

C. Income approach: Techniques to convert future amounts to a single present amount based upon market expectations, including present value techniques, option-pricing and excess earnings models.

Financial Instruments Not Carried at Fair Value

The carrying amounts of our financial instruments, including accounts payable and accrued liabilities, approximate fair value due to their short maturities. The estimated fair value of the long-term debt, not recorded at fair value, are recorded at cost or amortized cost, which was deemed to estimate fair value.

NOTE 5: LEASES

We determine if an arrangement is a lease at inception and whether the arrangement is classified as an operating or finance lease. At commencement of the lease, we record a right-of-use ("ROU") asset and lease liability in the balance sheet based on the present value of lease payments over the term of the arrangement. ROU assets represent the right to use an underlying asset for the lease term and lease liabilities represent our obligation to make lease payments arising from the lease. If the implicit rate is not readily determinable in the contract, we use our incremental borrowing rate based on the information available at commencement date in determining the present value of lease payments. Contract terms may

include options to extend or terminate the lease, and, when we deem it is reasonably certain that we will exercise that option, it is included in the ROU asset and liability.

Operating leases reflect lease expense on a straight-line basis, while any finance leases result in the separate presentation of interest expense on the lease liability and amortization expense of the ROU asset.

We have operating leases for our corporate headquarters and our manufacturing and research facility, which expire in 2024. We were obligated under finance leases for certain research and computer equipment, of which the last arrangement expired in July 2023.

The components of lease cost are as follows (in thousands):

	Years Ended December 31,	
	2022	2021
Operating lease cost	$ 222	$ 222
Finance lease cost:		
Amortization of ROU asset	35	86
Interest on lease liability	1	6
Total finance lease cost	$ 36	$ 92

As of December 31, 2022, maturities of operating lease liabilities are follows (in thousands):

Years Ending December 31:	
2023	$ 198
2024	186
Total operating lease payments	384
Less imputed interest	(25)
Total operating lease liabilities	$ 359

NOTE 6: STOCK-BASED COMPENSATION

In 2018, our stockholders approved the adoption of the SenesTech, Inc. 2018 Equity Incentive Plan (the “2018 Plan”). The 2018 Plan has since been amended and restated on certain occasions, most recently on October 12, 2022, when our stockholders approved an increase to the total number of authorized shares to 348,614 shares.

Stock options are generally issued with a per share exercise price equal to the fair market value of our common stock at the date of grant. Options granted generally vest immediately, or ratably over a two- to 36-month period coinciding with their respective service periods, with terms of generally five years. Certain stock option awards provide for accelerated vesting upon a change in control.

As of December 31, 2022, we had 164,486 shares of common stock available for issuance under the 2018 Plan.

Stock Options

We measure the fair value of stock options with service-based vesting criteria to employees, directors and consultants on the date of grant using the Black-Scholes option pricing model. The Black-Scholes valuation model requires us to make certain estimates and assumptions, including assumptions related to the expected price volatility of our stock, the period during which the options will be outstanding, the rate of return on risk-free investments, and the expected dividend yield for our stock.

Fair value of options granted is determined using the Black-Scholes option-pricing model with the following weighted average assumptions:

	2022	2021
Risk-free interest rate	3.7 %	0.5 %
Expected dividend yield	— %	— %
Expected volatility	90.5 %	95.8 %
Expected term (in years)	3.3	3.0

Due to our limited operating history and lack of company-specific historical or implied volatility, the expected volatility assumption was determined based on historical volatilities from traded options of biotech companies of comparable size and stability, whose share prices are publicly available. The expected term of options granted to employees is calculated based on the mid-point between the vesting date and the end of the contractual term according to the simplified method as described in SEC Staff Accounting Bulletin 110 because we do not have sufficient historical exercise data to provide a reasonable basis upon which to estimate the expected term due to the limited period of time our awards have been outstanding. For non-employee options, the expected term of options granted is the contractual term of the options. The risk-free interest rate is determined by reference to the implied yields of U.S. Treasury securities with a remaining term equal to the expected term assumed at the time of grant. The expected dividend assumption is based on our history and expectation of dividend payouts. We have not paid and do not intend to pay dividends.

The stock option activity consists of the following:

	Number of Options	Weighted Average Exercise Price Per Share	Weighted Average Remaining Contractual Term (years)	Aggregate Intrinsic Value (1)
Outstanding as of December 31, 2020	24,824	$ 172.60	3.9	$ —
Granted	29,932	19.40	4.6	$ —
Exercised	—	—	—	$ —
Forfeited	(165)	—	—	$ —
Expired	(200)	—	—	$ —
Outstanding as of December 31, 2021	54,391	172.60	3.9	$ —
Granted	241,962	5.79	4.8	$ —
Exercised	—	—	—	$ —
Forfeited	(15,343)	—	—	$ —
Expired	(200)	—	—	$ —
Outstanding as of December 31, 2022	280,810	17.00	3.9	$ —
Exercisable as of December 31, 2022	71,131	55.40	3.9	$ —

(1) The aggregate intrinsic value on the table was calculated based on the difference between the estimated fair value of our stock and the exercise price of the underlying option. The estimated stock values used in the calculation was $5.96 and $19.60 per share for each of the years ended December 31, 2022 and 2021, respectively.

The weighted average grant date fair value of options granted to employees for the year ended December 31, 2022 was $3.42 per share.

As of December 31, 2022, the unrecognized stock-based compensation cost was $569,000, which is expected to be recognized over a weighted average period of 28 months.

Restricted Stock Units

The restricted stock unit activity consists of the following:

	Number of Units	Weighted Average Grant Date Fair Value Per Unit
Outstanding as of December 31, 2020	1,603	$ 82.60
Granted	—	—
Vested	(1,570)	84.40
Forfeited	—	—
Outstanding as of December 31, 2021	33	36.00
Granted	19,049	2.87
Vested	(283)	17.67
Forfeited	—	—
Outstanding as of December 31, 2022	18,799	2.71

The stock-based compensation expense was recorded as following (in thousands):

	Years Ended December 31,	
	2022	2021
Research and development	$ 3	$ 3
General and administrative	708	762
Total stock-based compensation expense	$ 711	$ 765

NOTE 7: INCOME TAXES

Our losses before income taxes for the years ended December 31, 2022 and December 31, 2021 were generated entirely from U.S. operations.

We have no current or deferred provision for income taxes from continuing operations for the years ended December 31, 2022 and 2021.

The significant differences between the U.S. Federal statutory rate and our effective rate for financial reporting purposes are as follows:

	Years Ended December 31,	
	2022	2021
Federal statutory tax rate	(21.0)%	(21.0)%
State taxed, net of federal tax benefit	(3.7)	(4.0)
Change in valuation allowance	14.3	23.9
Return-to-provision and other	7.9	1.3
Stock-based compensation	2.5	1.4
PPP loan forgiveness	—	(1.7)
Effective tax rate	— %	— %

Deferred income tax assets and liabilities consist of the following (in thousands):

	As of December 31,	
	2022	2021
Deferred income tax assets:		
Federal and state net operating loss carryovers	$ 20,498	$ 19,448
Capitalized research costs	432	—
Stock-based compensation	253	333
Compensation accruals and other	92	139
Operating leases related to ROU assets	89	130
Deferred revenue	11	—
Depreciation	8	—
Other	1	—
Total deferred income tax assets	21,384	20,050
Valuation allowance for deferred income tax assets	(21,298)	(19,916)
Deferred income tax assets, net of valuation allowance	86	134
Deferred income tax liabilities:		
Depreciation	—	(7)
ROU assets	(86)	(127)
Total deferred income tax liabilities	(86)	(134)
Deferred income tax assets, net	$ —	$ —

A valuation allowance has been recognized to offset the net deferred tax assets as realization of such deferred tax assets have not met the more likely than not threshold.

As of December 31, 2022, we had federal and state net operating loss carryforwards of approximately $84.5 million and $71.0 million, respectively, not considering the IRC Section 382 annual limitation discussed below. The federal loss carryforwards begin to expire in 2029, unless previously utilized. In addition, we have approximately $40.1 million of the total $84.5 million of net operating losses that do not expire, as these losses were generated after the law change introduced as part of the Tax Cuts and Jobs Act. The state net operating losses expire if not utilized by 2042.

Additionally, the utilization of the net operating loss carryforwards could be subject to an annual limitation under Section 382 and 383 of the Internal Revenue Code of 1986, and similar state tax provisions due to ownership change limitations that have occurred previously or that could occur in the future. These ownership changes limit the amount of net operating loss carryforwards and other deferred tax assets that can be utilized to offset future taxable income and tax, respectively. In general, an ownership change, as defined by Section 382 and 383, results from transactions increasing ownership of certain stockholders or public groups in the stock of the corporation by more than 50 percentage points over a three-year period. We have not conducted an analysis of an ownership change under section 382. To the extent that a study is completed and an ownership change is deemed to occur, our net operating losses could be limited.

We do not have any unrecognized tax benefits at the beginning and end of the years ended December 31, 2022 and 2021, and do not expect a significant change in unrecognized tax benefits over the next 12 months.

We file income tax returns in the United States and Arizona with general statutes of limitations of three and four years, respectively. Due to net operating losses incurred, our tax returns from inception to date are subject to examination by taxing authorities. Our policy is to recognize interest expense and penalties related to income tax matters as a component of income tax expense. As of December 31, 2022, we had no interest or penalties accrued related to uncertain tax positions.

NOTE 8: STOCKHOLDERS' EQUITY

Preferred Stock

We are authorized to issue 10 million shares of preferred stock with a par value of $0.001. Rights and any series designation would be established at time of issuance of preferred stock. As of December 31, 2022 and 2021 there was no preferred stock outstanding.

Common Stock

We are authorized to issue 100 million shares of common stock with a par value of $0.001 per share. Stockholders of common stock have unlimited voting rights and are entitled to receive the net assets of the Company upon dissolution, subject to the rights of the preferred stockholders, if any.

We had the following common stock offerings in 2022 and 2021:

November 2022. We consummated a private placement with certain institutional and accredited investors and issued an aggregate of 67,572 shares of our common stock at a purchase price of $3.50 per share, pre-funded warrants to purchase up to an aggregate of 1,361,000 shares of common stock at a purchase price of $3.50 per pre-funded warrant ("Pre-Funded Warrants") and associated warrants to purchase up to an aggregate of 2,857,144 share of common stock at $3.165 per share, for gross proceeds of approximately $5.0 million, prior to deducting placement agent fees and offering expenses. In connection with this offering, we issued the placement agent warrants to purchase up to 107,143 shares of common stock with an exercise price of $4.375 per share.

Of the Pre-Funded Warrants, 131,000 were exercised in December 2022, with the remaining 1,230,000 exercised in early 2023.

The common stock, Pre-Funded Warrants and warrants sold in this November 2022 public offering were offered and sold pursuant to a registration statement on Form S-1 (File No. 333-267991) initially filed with the SEC on October 24, 2022, as amended, which was declared effective by the SEC on November 16, 2022.

March 2021. We consummated a registered direct offering with certain institutional investors and issued an aggregate of 98,750 shares of our common stock at a purchase price of $40.00 per share for gross proceeds of approximately $3.95 million, pursuant to a prospectus, dated August 24, 2018, and a prospectus supplement, dated March 22, 2021, in connection with a takedown from our shelf registration statement on Form S-3 (File No. 333-225712). In connection with the offering, we issued the placement agent warrants to purchase up to 7,408 shares of common stock at an exercise price per share of $50.00 per share.

February 2021. We consummated a private placement with certain institutional and accredited investors and issued an aggregate of 198,443 shares of our common stock at a purchase price of $45.57 per share, pre-funded warrants to purchase up to an aggregate of 21,000 shares of common stock at a purchase price of $2.2775 per pre-funded warrant and associated warrants to purchase up to an aggregate of 109,730 shares of common stock, for gross proceeds of approximately $10.0 million, prior to deducting placement agent fees and offering expenses. During 2021, all 420,000 pre-funded shares had been distributed. In connection with the offering, we issued the placement agent warrants to purchase up to 329,164 shares of common stock with an exercise price of $2.8481 per share.

NOTE 9: COMMON STOCK WARRANTS

The following is the activity for common stock warrants:

Issue Date	Warrant Type	Term Date	Exercise Price	Balance December 31, 2020	Issued	Exercised	Expired	Balance December 31, 2021	Issued	Exercised	Expired	Balance December 31, 2022
November 2017	Common Stock Offering	November 2022	$ 27.32	7,175	—	(1,089)	—	6,086	—	—	(6,086)	—
June 2018	Reissue	December 2023	$ 728.00	2,835	—	—	—	2,835	—	—	—	2,835
August 2018	Rights Offering	July 2023	$ 460.00	10,149	—	(25)	—	10,124	—	—	—	10,124
August 2018	Dealer Manager	August 2023	$ 690.00	670	—	—	—	670	—	—	—	670
July 2019	Dealer Manager	July 2024	$ 675.00	419	—	—	—	419	—	—	—	419
January 2020	Registered Direct Offering	July 2025	$ 180.00	8,761	—	—	—	8,761	—	—	—	8,761
January 2020	Dealer Manager	July 2025	$ 200.00	667	—	—	—	667	—	—	—	667
March 2020	Dealer Manager	March 2025	$ 75.13	664	—	—	—	664	—	—	—	664
April 2020	Dealer Manager	April 2025	$ 79.40	5,906	—	—	—	5,906	—	—	—	5,906
April 2020	Registered Direct Offering	April 2025	$ 61.00	2,500	—	—	—	2,500	—	—	—	2,500
October 2020	Private Inducement	April 2026	$ 34.500	35,034	—	(35,034)	—	—	—	—	—	—
October 2020	Private Inducement	November 2027	$ 3.165	50,000	—	—	—	50,000	—	—	—	50,000
October 2020	Dealer Manager	April 2026	$ 43.12	4,254	—	—	—	4,254	—	—	—	4,254
February 2021	Private Placement Agreement	August 2026	$ 44.32	—	82,300	—	—	82,300	—	—	—	82,300
February 2021	Private Placement Agreement	November 2027	$ 3.165	—	27,430	—	—	27,430	—	—	—	27,430
February 2021	Dealer Manager	August 2026	$ 56.96	—	16,460	—	—	16,460	—	—	—	16,460
March 2021	Dealer Manager	March 2026	$ 50.00	—	7,408	—	—	7,408	—	—	—	7,408
November 2022	Pre-Funded Warrants	February 2023	$ 3.50	—	—	—	—	—	1,361,000	(131,000)	—	1,230,000
November 2022	Series A	November 2027	$ 3.165	—	—	—	—	—	1,428,572	—	—	1,428,572
November 2022	Series B	December 2023	$ 3.165	—	—	—	—	—	1,428,572	—	—	1,428,572
November 2022	Dealer Manager	November 2027	$ 4.375	—	—	—	—	—	107,143	—	—	107,143
				129,034	133,598	(35,059)	—	226,484	4,325,287	(131,000)	—	4,414,685

As of December 31, 2022, we had 4,414,685 shares of common stock issuable upon exercise of outstanding common stock warrants, at a weighted-average exercise price of $6.58 per share and expiring as follows:

	Weighted Average Exercise Price	Shares
Years Ending December 31:		
2023	$ 5.99	2,672,201
2024	675.00	419
2025	128.75	18,498
2026	46.54	110,422
2027	3.25	1,613,145
	6.58	4,414,685

Common Stock Warrant Inducement

In June 2018, in order to induce an existing warrant holder to exercise its original warrant representing 2,835 shares of common stock for cash at the $600.00 exercise price for gross proceeds of $1.7 million, we issued to the holder a new warrant to purchase 2,835 shares of common stock at an exercise price of $728.00 per share. In connection with the issuance of these inducement warrants, we recorded stock-based compensation expense of $1,700, representing the fair value of the inducement warrants issued using the Black Scholes model based on the following significant inputs: common stock price of $844.00 per share; comparable company volatility of 72.6%; remaining term of five years; dividend yield of 0%; and risk-free interest rate of 2.8%.

Common Stock Warrants Issued in August 2018 Rights Offering

In August 2018, in connection with a rights offering of 13,393 shares of our common stock, we issued warrants to purchase 13,393 shares of our common stock at an exercise price of $460.00 per share. We estimated the fair value of these warrants to be $3.6 million using a Monte Carlo model based on the following significant inputs: common stock price of $376.00 per share; comparable company volatility of 159.0%; remaining term of five years; dividend yield of 0%; and risk-free interest rate of 2.77%.

In connection with the closing of the August 2018 rights offering, we issued warrants to purchase 670 shares of our common stock at an exercise price of $690.00 per share to Maxim Partners LLC, an affiliate of the dealer-manager of the rights offering. We estimated the fair value of these warrants to be $169,000 using a using a Monte Carlo model based on the following significant inputs: common stock price of $376.00 per share; comparable company volatility of 159.0%; remaining term of five years; dividend yield of 0%; and risk-free interest rate of 2.77%.

Common Stock Warrant Issued to Underwriter of Common Stock Offering

In July 2019, we issued to H.C. Wainwright & Co., as placement agent, a warrant to purchase 419 shares of common stock at an exercise price of $675.00 per share as consideration for providing services in connection with a common stock offering in July 2019.

We estimated the fair value of this warrant to be $127,000 using a lattice model based on the following significant inputs: common stock price of $536.00 per share; comparable company volatility of 133.3%; remaining term of five years; dividend yield of 0%; and risk-free interest rate of 2.07%.

Common Stock Warrants Issued in January 2020 Private Placement

In January 2020, in a private placement concurrent with a registered direct offering of shares of our common stock, we also issued warrants to purchase an aggregate of up to 8,875 shares of common stock to certain institutional and accredited investors that participated in the 2020 Registered Direct Offerings (the “January 2020 Warrants”). These warrants were issued in reliance on the exemption from registration provided by Section 4(a)(2) of the Securities Act and Rule 506(b) of Regulation D promulgated thereunder. Terms used but not otherwise defined herein will have the meanings given them in

the warrants, attached as Exhibit 4.1 to our Current Report on Form 8-K filed with the Securities and Exchange Commission (the "SEC") on January 28, 2020.

We estimated the fair value of the January 2020 Warrants to be $813,000 using a Black Scholes model based on the following significant inputs: common stock price of $158.00 per share; comparable company volatility of 73.8%; remaining term of five years; dividend yield of 0% and risk-free interest rate of 1.53%.

For so long as the January 2020 Warrants remain outstanding, the exercise price and number of shares of common stock issuable upon exercise of these warrants are subject to adjustment as follows: (a) upon payment of a stock dividend or other distribution on a class or series of shares common stock, not including shares issued under this warrant; (b) upon subdivision (by stock spilled, stock dividend, recapitalization, or otherwise) or combination (by reverse stock split or otherwise) of shares of common stock; or (c) upon the issuance of any shares of capital stock by reclassification of shares of the common stock.

In the event that we declare or make any dividend or other distribution of our assets to holders of our common stock, each January 2020 Warrants holder will be entitled to participate in such distribution to the same extent that such holder would have participated therein if the holder had held the number of shares of common stock acquirable upon exercise of the January 2020 Warrants.

In the event of a Fundamental Transaction, as described in the January 2020 Warrants and generally including the sale, transfer or other disposition of all or substantially all of our properties or assets; our consolidation or merger with or into another person or reorganization; a recapitalization, reorganization or reclassification in which our common stock is converted into other securities, cash or property; or any acquisition of our outstanding common stock that results in any person or group becoming the beneficial owner of 50% of the voting power represented by our outstanding common stock, then the holders of the 2020 Warrants will be entitled to receive upon exercise of such warrants the kind and amount of securities, cash, assets or other property that the holders would have received had they exercised the January 2020 Warrants immediately prior to such Fundamental Transaction. Subject to certain limitations, in the event of a Fundamental Transaction the January 2020 Warrants holder may at its option require us or any successor entity to purchase such warrant from the holder by paying to the holder an amount of cash equal to the Black Scholes Value of the remaining unexercised portion of the 2020 Warrant on the date of the consummation of the Fundamental Transaction.

Any time that we grant, issue, or sell any securities pro rata to all of the record holders of our common stock (the "2020 Purchase Right"), each holder of January 2020 Warrants will be entitled to acquire the aggregate amount of securities that the holder could have acquired if the holder had held the number of shares of common stock acquirable upon exercise of the applicable January 2020 Warrants. However, to the extent that an exercise of a 2020 Purchase Right would exceed the Beneficial Ownership Limitation (defined below), then to such extent the 2020 Purchase Right will be held in abeyance until such time, if ever, that complete exercise of the 2020 Purchase Right would not exceed the Beneficial Ownership Limitation.

After the Initial Exercisability Date, the January 2020 Warrants will be exercisable, at the option of each holder, in whole or in part, by delivering to us a duly executed exercise notice accompanied by payment in full for the number of shares of our common stock purchased upon such exercise. If, at the time a holder exercises the January 2020 Warrants (but not sooner than six months following the date of such warrant), a registration statement registering the issuance of the shares of common stock underlying the January 2020 Warrants under the Securities Act is not then effective or available, nor is any current prospectus thereto available, and an exemption from registration under the Securities Act is not available for the issuance of such shares, then in lieu of making the cash payment otherwise contemplated to be made to us upon such exercise in payment of the aggregate exercise price, the holder may elect instead to receive upon such exercise (either in whole or in part) the number of shares of common stock determined according to a formula set forth in the January 2020 Warrants.

Limitations on Exercise. A holder (together with its affiliates) may not exercise any portion of the January 2020 Warrants to the extent that the holder would own more than 4.99% of the outstanding common stock after exercise (the "Beneficial Ownership Limitation"), except that upon at least 61 days' prior notice from the holder to us, the holder may increase the Beneficial Ownership Limitation up to 9.99% of the number of shares of our common stock outstanding immediately after giving effect to the exercise, as such percentage ownership is determined in accordance with the terms of the January 2020

Warrants. No fractional shares of common stock will be issued in connection with the exercise of a January 2020 Warrants. In lieu of fractional shares, we will either pay the holder an amount in cash equal to the fractional amount multiplied by the exercise price or round up to the next whole share.

Except as otherwise provided in the January 2020 Warrants or by virtue of such holder's ownership of shares of our common stock, the holders of the January 2020 Warrants do not have the rights or privileges of holders of our common stock, including any voting rights, unless and until they exercise such warrants.

Common Stock Warrants Issued in April 2020 Public Offering

In April 2020, in connection with a previously announced public offering of our common stock, we issued warrants to purchase 78,715 shares of common stock at an exercise price of $61.00 to the participants in the public offering (the "April 2020 Warrants"). We estimated the fair value of these warrants to be $2.4 million using a Black Scholes model based on the following significant inputs: common stock price of $48.00 per share; comparable company volatility of 87.9%; remaining term of five years; dividend yield of 0%; and risk-free interest rate of 0.18%.

The common stock, pre-funded warrants and warrants sold in this April 2020 public offering were offered and sold pursuant to a registration statement on Form S-1 (File No. 333-236302) initially filed with the SEC on February 7, 2020, as amended ("Registration Statement"), which was declared effective by the SEC on February 14, 2020. The Post-Effective Amendment No. 2 to the Registration Statement was declared effective by the SEC on April 21, 2020.

Common Stock Warrants Issued to Placement Agent in 2020 Private Placements

In connection with the separate private placements concurrent with registered direct offerings of shares of our common stock, we issued to H.C. Wainwright & Co., LLC, as placement agent, in January 2020, warrants to purchase 667 shares of common stock at an exercise price of $200.00 per share and in March 2020, warrant to purchase 664 shares of common stock at an exercise price of $75.13 per share. These warrants were issued in reliance on the exemption from registration provided by Section 4(a)(2) of the Securities Act and Rule 506(b) of Regulation D promulgated thereunder and have substantially similar terms as the January 2020 Warrants described above, except for differing exercise prices.

We estimated the fair value of the January 2020 warrants issued in January to be $58,000 using a Black Scholes model based on the following significant inputs: common stock price of $158.00; comparable company volatility of 73.8%; remaining term of five years; dividend yield of 0% and risk-free interest rate of 1.53%.

We estimated the fair value of the March 2020 warrants to be $17,000 using a Black Scholes model based on the following significant inputs: common stock price of $47.00 per share; comparable company volatility of 74.8%; remaining term of six years; dividend yield of 0%; and risk-free interest rate of 0.39%.

Common Stock Warrants Issued to Placement Agent in 2020 Registered Direct Offering

In connection with the public offering of (preferred or common) stock in April 2020, we issued to H.C. Wainwright & Co., LLC, as placement agent, warrants to purchase 5,906 shares of common stock at an exercise price of $79.40 per share. These warrants were issued in reliance on the exemption from registration provided by Section 4(a)(2) of the Securities Act and Rule 506(b) of Regulation D promulgated thereunder, and have substantially similar terms as the April 2020 Warrants described above, except for differing exercise prices.

We estimated the fair value of these warrants to be $167,000 using a Black Scholes model based on the following significant inputs: common stock price of $48.00 per share; comparable company volatility of 87.9%; remaining term of six years; dividend yield of 0%; and risk-free interest rate of 0.18%.

Common Stock Warrants Issued in October 2020 Private Warrant Inducement

In October 2020, in connection with an inducement agreement with an existing accredited investor to exercise 85,034 outstanding warrants to purchase an equal number of shares of our common stock, we issued new unregistered warrants to purchase up to an aggregate of 85,034 shares of common stock at an exercise price of $34.50 per share. The original

warrants were issued in March and April, 2020, whereby the per share exercise price of the original warrants were reduced from $57.60 per share and $61.00 per share, respectively, to $34.50 per share.

We estimated the fair value of these warrants to be $1.8 million using a Black Scholes model based on the following significant inputs: common stock price of $29.40 per share; comparable company volatility of 96.5%; remaining term of six years; dividend yield of 0%; and risk-free interest rate of 0.18%.

In connection with the November 2022 registered direct offering with certain institutional and accredited investors, we modified the terms of the then outstanding warrants related to 50,000 shares to an exercise price of $3.165 per share and extended the expiration date to November 2027. We estimated the fair value of these warrants to be $110,000 using a Black Scholes model based on the following significant inputs: common stock price of $3.03 per share; comparable company volatility of 93.9%; remaining term of five years; dividend yield of 0%; and risk-free interest rate of 3.83%.

Common Stock Warrants Issued to Placement Agent in October 2020 Inducement Offering

In connection with the private warrant inducement in October 2020 of 85,034 shares of our common warrants, we issued to H.C. Wainwright & Co., LLC, as placement agent, warrants to purchase 4,254 shares of common stock at an exercise price of $43.12 per share. These warrants have substantially similar terms as the January 2020 Warrants described above, except for differing exercise prices.

We estimated the fair value of these warrants to be $86,000 using a Black Scholes model based on the following significant inputs: common stock price of $29.40 per share; comparable company volatility of 96.5%; remaining term of six years; dividend yield of 0%; and risk-free interest rate of 0.18%.

Common Stock Warrants Issued in February 2021 Private Placement Agreement

In February 2021, in connection with a private placement agreement with certain institutional and accredited investors, we issued common stock warrants to purchase up to an aggregate of 109,730 shares of common stock at an exercise price of $44.32 per share. The warrants were exercisable immediately and have an exercise period of five and one-half years from the date of issuance. The warrant holder may not exercise any portion of such holder's warrants to the extent that the holder, together with its affiliates, would beneficially own more than 4.99% (or, at the election of the holder, 9.99%) of our outstanding shares of common stock immediately after exercise, except that upon at least 61 days' prior notice from the holder to us, the holder may increase the beneficial ownership limitation to up to 9.99% of the number of shares of common stock outstanding immediately after giving effect to the exercise.

We estimated the fair value of these warrants to be $3.1 million using a Black Scholes model based on the following significant inputs: common stock price of $38.60 per share; comparable company volatility of 95.6%; remaining term of six years; dividend yield of 0% and risk-free interest rate of 0.18%.

In connection with the November 2022 registered direct offering with certain institutional and accredited investors, we modified the terms related to 27,430 shares of these warrants to an exercise price of $3.165 per share and extended the expiration date to November 2027. We estimated the fair value of these warrants to be $60,000 using a Black Scholes model based on the following significant inputs: common stock price of $3.03 per share; comparable company volatility of 93.9%; remaining term of five years; dividend yield of 0%; and risk-free interest rate of 3.83%.

Common Stock Warrants Issued to Placement Agent in February 2021 Private Placement Agreement

In connection with the private placement in February 2021, we issued to H.C. Wainwright & Co., LLC, as placement agent, warrants to purchase up to 16,460 shares of common stock with an exercise price of $56.96 per share.

We estimated the fair value of these warrants to be $435,000 using a Black Scholes model based on the following significant inputs: common stock price of $38.60 per share; comparable company volatility of 95.6%; remaining term six years; dividend yield of 0%; and risk-free interest rate of 0.18%.

Common Stock Warrants Issued to Placement Agent in March 2021 Registered Direct Offering

In March 2021, we consummated a registered direct offering with certain institutional investors and issued an aggregate of 98,750 shares of our common stock at a purchase price of $40.00 per share for gross proceeds to us of approximately $3.95 million, before deducting fees payable to the placement agent and other estimated offering expenses payable by us. These shares were offered and sold pursuant to a prospectus, dated August 24, 2018, and a prospectus supplement, dated March 22, 2021, in connection with a takedown from our shelf registration statement on Form S-3 (File No. 333-225712).

In connection with the registered direct offering in March 2021, we issued to H.C. Wainwright & Co., LLC, as the placement agent, warrants to purchase up to 7,408 shares of common stock at an exercise price of $50.00 per share . The placement agent warrants, and the shares of common stock issuable upon exercise thereof, will be issued in reliance on the exemption from registration provided in Section 4(a)(2) under the Securities Act of 1933, as amended, and Regulation D promulgated thereunder.

We estimated the fair value of these warrants to be $181,000 using a Black Scholes model based on the following significant inputs: common stock price of $35.20 per share; comparable company volatility of 100.8%; remaining term of five years; dividend yield of 0%; and risk-free interest rate of 0.31%.

Common Stock Warrants Issued in November 2022 Common Stock Offering

In November 2022, in connection with a registered direct offering with certain institutional and accredited investors, we issued common stock warrants as follows:

- Pre-Funded Warrants to purchase up to an aggregate of 1,361,000 shares of common stock at an exercise price of $3.50 per share, which are exercisable immediately and terminate until exercised in full. A portion of the Pre-Funded Warrants were exercised in December 2022, with the last traunch of these warrants being exercised in February 2023. We estimated the fair value of the Pre-Funded Warrants to be $153,000 using a Black Scholes model based on the following significant inputs: common stock price of $3.03 per share; comparable company volatility of 93.9%; remaining term of three months; dividend yield of 0% and risk-free interest rate of 3.83%.

- Series A warrants to purchase up to an aggregate of 1,428,572 shares at an exercise price of $3.165 per share, which are exercisable immediately and expire five years from date of issuance.We estimated the fair value of the Series A warrants to be $3.1 million using a Black Scholes model based on the following significant inputs: common stock price of $3.03 per share; comparable company volatility of 93.9%; remaining term of five years; dividend yield of 0% and risk-free interest rate of 3.83%.

- Series B warrants to purchase up to an aggregate of 1,428,572 shares at an exercise price of $3.165 per share, which are exercisable immediately and expire 13 months from date of issuance. We estimated the fair value of the Series B warrants to be $1.6 million using a Black Scholes model based on the following significant inputs: common stock price of $3.03 per share; comparable company volatility of 93.9%; remaining term of five years; dividend yield of 0% and risk-free interest rate of 3.83%.

Common Stock Warrants Issued to Placement Agent in November 2022 Common Stock Offering

In connection with the registered direct offering in November 2022, we issued to H.C. Wainwright & Co., LLC, as the placement agent, warrants to purchase up to 107,143 shares of common stock. The placement agent warrants will be exercisable commencing six months following the date of issuance, expire five years following the date of sale and have an exercise price per share of $4.375 per share. The placement agent warrants, and the shares of common stock issuable upon exercise thereof, will be issued in reliance on the exemption from registration provided in Section 4(a)(2) under the Securities Act of 1933, as amended, and Regulation D promulgated thereunder.

We estimated the fair value of these warrants to be $240,000 using a Black Scholes model based on the following significant inputs: common stock price of $3.25; comparable company volatility of 93.9%; remaining term five years; dividend yield of 0%; and risk-free interest rate of 3.83%.

NOTE 10: LOSS PER SHARE

Basic loss per share attributable to common stockholders is calculated by dividing the net loss attributable to common stockholders by the weighted average number of common shares outstanding during the period. Diluted loss per share attributable to common stockholders is computed by dividing the loss attributable to common stockholders by the weighted average number of common shares and potentially dilutive securities outstanding for the period determined using the treasury stock and if-converted methods. For purposes of the computation of diluted loss per share attributable to common stockholders, common stock purchase warrants, restricted stock units and common stock options are considered to be potentially dilutive securities but have been excluded from the calculation of diluted loss per share attributable to common stockholders because their effect would be anti-dilutive given the net loss reported for the years ended December 31, 2022 and 2021. Therefore, basic and diluted loss per share attributable to common stockholders was the same for all periods presented.

The following table sets forth the outstanding potentially dilutive securities that have been excluded in the calculation of diluted loss per share attributable to common stockholders (in common stock equivalent shares):

	December 31,	
	2022	2021
Common stock warrants	4,414,810	226,572
Restricted stock units	18,799	33
Common stock options	281,801	54,391
Total	4,715,410	280,996

NOTE 11: CONTINGENCIES

In July 2020, Kennan E. Kaedar, our former corporate general counsel (the “Plaintiff”), commenced an action against us in the Superior Court of the State of California, for the County of San Diego. The complaint alleges, among other things, that we breached the Plaintiff’s employment contract with us, as well as the implied covenant of good faith and fair dealing, by refusing to issue him the balance of stock options he claims we owe him. In September 2021, the Plaintiff also named the following individuals as defendants: Loretta Mayer, Cheryl Dyer, Thomas C. Chesterman, Kim Wolin, Grover Wickersham, Marc Dumont, Bob Ramsey, Matthew Szot, Julia Williams, and Bill Baker. The Plaintiff alleges that such individuals agreed to knowingly and wrongfully withhold the stock options owed to him and are knowingly in receipt of stolen property. The Plaintiff seeks compensatory damages in excess of $500,000, treble damages and reasonable attorneys’ fees. We do not believe the claims described above have merit and intend to aggressively defend against these accusations. We do not believe that this litigation is likely to have a material effect on our operations.

In addition to the matter described above, we may be subject to other legal proceedings and claims arising from contracts or other matters from time to time in the ordinary course of business. Management is not aware of any other pending or threatened litigation where the ultimate disposition or resolution could have a material adverse effect on our financial position, results of operations or liquidity.

NOTE 12: RELATED PARTY TRANSACTIONS

Related party transactions are conducted in the normal course of business and, unless otherwise noted, are measured at the exchange amount, which is the amount of consideration established and agreed to by the related parties. In connection with consulting agreements in place, during each of the years ended December 31, 2022 and 2021, $50,400 of cash payments were made to the Kito Impact Foundation of which Dr. Bechtel, the Chair of our board, serves as chief executive officer.

SENESTECH, INC.
NOTES TO THE FINANCIAL STATEMENTS, continued

NOTE 13: SUBSEQUENT EVENTS

Through February 13, 2023, the Pre-Funded Warrants were exercised in full with the issuance of 1,230,000 shares of common stock.

We have evaluated subsequent events from the balance sheet date through March 16, 2023, the date at which the financial statements were issued, and determined that there were no other items that require adjustment to or disclosure in the financial statements.

ITEM 9. CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURE.

None.

ITEM 9A. CONTROLS AND PROCEDURES.

Evaluation of Disclosure Controls and Procedures

We maintain disclosure controls and procedures that are designed to ensure that the information required to be disclosed in the reports that we file or submit under the Securities Exchange Act of 1934 ("Exchange Act") is recorded, processed, summarized and reported within the time periods specified in the SEC's rules and forms, and that such information is accumulated and communicated to our management, including our Chief Executive Officer and Chief Financial Officer, as appropriate, to allow timely decisions regarding required disclosure.

In connection with the preparation of this Annual Report on Form 10-K, our management carried out an evaluation, under the supervision and with the participation of our Chief Executive Officer and Chief Financial Officer, as of December 31, 2022, of the effectiveness of the design and operation of our disclosure controls and procedures, as such term is defined under Rule 13a-15(e) and 15d-15(e) under the Exchange Act. Based upon this evaluation, our Chief Executive Officer and Chief Financial Officer concluded that our disclosure controls and procedures were effective as of December 31, 2022.

Management's Report on Internal Control Over Financial Reporting

Management is responsible for establishing and maintaining adequate internal control over financial reporting as defined in Rules 13a-15(f) or 15d-15(f) under the Exchange Act of 1934. Our internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with U.S. GAAP. All internal control systems, no matter how well designed, have inherent limitations. Even those systems determined to be effective can provide only reasonable assurance with respect to financial statement preparation and presentation. Management is committed to continue monitoring our internal controls over financial reporting and will modify or implement additional controls and procedures that may be required to ensure the ongoing integrity of our consolidated financial statements.

With the participation of our Chief Executive Officer and Chief Financial Officer, management conducted an evaluation of the effectiveness of internal control over financial reporting as of December 31, 2021. In making this assessment, the Company used the framework established in Internal Control—Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission. Based on this assessment, management has concluded that internal control over financial reporting was effective as of December 31, 2022 based on those criteria.

This annual report does not include an attestation report of the company's registered public accounting firm due to a transition period established by rules of the Securities and Exchange Commission for smaller reporting companies.

Changes in Internal Control over Financial Reporting

There was no change in our internal control over financial reporting that occurred during the quarter ended December 31, 2022, that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

ITEM 9B. OTHER INFORMATION.

Not applicable.

ITEM 9C. DISCLOSURE REGARDING FOREIGN JURISDICTIONS THAT PREVENT INSPECTIONS.

Not applicable.

PART III

ITEM 10. DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE.

The information required by this Item relating to our directors and corporate governance is incorporated herein by reference to the definitive Proxy Statement to be filed pursuant to Regulation 14A of the Exchange Act for our 2023 Annual Meeting of Stockholders.

ITEM 11. EXECUTIVE COMPENSATION.

The information required by this Item relating to our directors and corporate governance is incorporated herein by reference to the definitive Proxy Statement to be filed pursuant to Regulation 14A of the Exchange Act for our 2023 Annual Meeting of Stockholders.

ITEM 12. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED STOCKHOLDER MATTERS.

The information required by this Item relating to our directors and corporate governance is incorporated herein by reference to the definitive Proxy Statement to be filed pursuant to Regulation 14A of the Exchange Act for our 2023 Annual Meeting of Stockholders.

ITEM 13. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS, DIRECTOR INDEPENDENCE.

The information required by this Item relating to our directors and corporate governance is incorporated herein by reference to the definitive Proxy Statement to be filed pursuant to Regulation 14A of the Exchange Act for our 2023 Annual Meeting of Stockholders.

ITEM 14. PRINCIPAL ACCOUNTING FEES AND SERVICES.

The information required by this Item relating to our directors and corporate governance is incorporated herein by reference to the definitive Proxy Statement to be filed pursuant to Regulation 14A of the Exchange Act for our 2023 Annual Meeting of Stockholders.

PART IV

ITEM 15. EXHIBITS, FINANCIAL STATEMENT SCHEDULES.

(a) Financial Statements and Schedules

1. Financial Statements are listed in the Index to Financial Statements on page F-1 of this report.

2. All schedules for which provision is made in the applicable accounting regulations of the Securities and Exchange Commission have been omitted because of the absence of the conditions under which they are required or because the information required is shown in the financial statements or notes above.

(b) Exhibit Listing

Exhibit Number	Description
(3)	**Articles of Incorporation and Bylaws**
3.1*	Amended and Restated Certificate of Incorporation, as amended by the Certificate of Amendment to the Amended and Restated Certificate of Incorporation (Form 10-K filed March 17, 2020, Exhibit 3.1 (File no. 001-37941)).
3.1(a)*	Certificate of Designation of the Series C Preferred Stock of the Registrant (Form 8-K filed August 26, 2022, Exhibit 3.1(a) (File no. 001-37941)).
3.1(b)*	Certificate of Amendment to Amended and Restated Certificate of Incorporation of SenesTech, Inc. (Form 8-K filed November 15, 2022, Exhibit 3.1(a) (File no. 001-37941)).
3.2*	Amended and Restated Bylaws (Form S- 1 filed September 21, 2016, Exhibit 3.5 (File no. 333-213736)).
3.2(a)*	Amendment No. 1 to the Amended and Restated Bylaws of SenesTech, Inc., dated June 16, 2021 (Form 8-K filed June 17, 2021, Exhibit 3.2 (File no. 001-37941)).
(4)	**Instruments defining the rights of security holders, including indentures**
4.1*	Description of Securities (Form 10-K/A filed April 21, 2020, Exhibit 4.1 (File no. 001-37941)).
4.2*	Form of the Registrant's Common Stock certificate (Form S-1 filed October 7, 2016, Exhibit 4.1 (File no. 333-213736)).
4.3*	Form of Restricted Stock Unit Agreement (Form 8-K filed December 21, 2016, Exhibit 4.1 (File no. 001-37941)).
4.4*	Form of Warrant (Form S-1 filed November 16, 2017, Exhibit 4.2 (File no. 333-221433)).
4.5*	Form of Underwriter's Warrant, as amended (Form 8-K filed November 21, 2017, Exhibit 4.1 (File no. 001-37941)).
4.6*	Form of New Warrant (Form 8-K filed June 20, 2018, Exhibit 4.1 (File no. 001-37941)).
4.7*	Form of Warrant issued to investors in Rights Offering (Form 10-Q filed August 14, 2018, Exhibit 4.1 (File no. 001-37941)).
4.8*	Form of Warrant issued to dealer-manager in Rights Offering (Form 10-Q filed August 14, 2018, Exhibit 4.2 (File no. 001-37941)).
4.9*	Warrant Agency Agreement, dated August 13, 2018, between the Registrant and Transfer Online, Inc. (Form 10-Q filed August 14, 2018, Exhibit 4.3 (File no. 001-37941)).
4.10*	Form of Placement Agent Warrant (Form 8-K filed July 17, 2019, Exhibit 4.1 (File no. 001-37941)).
4.11*	Form of Warrant (Form 8-K filed January 28, 2020, Exhibit 4.1 (File no. 001-37941)).
4.12*	Form of Placement Agent Warrant (Form 8-K filed January 28, 2020, Exhibit 4.2 (File no. 001-37941)).
4.13*	Form of Warrant (Form 8-K filed March 6, 2020, Exhibit 4.1 (File no. 001-37941)).
4.14*	Form of Placement Agent Warrant (Form 8-K filed March 6, 2020, Exhibit 4.2 (File no. 001-37941)).
4.15*	Form of Restricted Stock Unit Notice and Agreement (Form 10-K filed March 17, 2020, Exhibit 4.6 (File no. 001-37941)).
4.16*	Form of New Warrant (Form 8-K filed October 27, 2020, Exhibit 4.1 (File no. 001-37941)).
4.17*	Form of Placement Agent Warrant (Form 8-K filed October 27, 2020, Exhibit 4.1 (File no. 001-37941)).
4.18*	Form of Pre-Funded Warrant (Form 8-K filed February 2, 2021, Exhibit 4.1 (File no. 001-37941)).

4.19*	Form of Warrant (Form 8-K filed February 2, 2021, Exhibit 4.2 (File no. 001-37941)).
4.20*	Form of Placement Agent Warrant (Form 8-K filed February 2, 2021, Exhibit 4.3 (File no. 001-37941)).
4.21*	Form of Placement Agent Warrant (Form 8-K filed March 23, 2021, Exhibit 4.1 (File no. 001-37941)).
4.22*	Form of Series A Warrant (Form S-1/A filed November 15, 2022, Exhibit 4.21 (File no. 333-267991)).
4.23*	Form of Series B Warrant (Form S-1/A filed November 15, 2022, Exhibit 4.22 (File no. 333-267991)).
4.24*	Form of Pre-Funded Warrant (Form S-1/A filed November 15, 2022, Exhibit 4.23 (File no. 333-267991)).
4.25*	Form of Placement Agent Warrant (Form S-1/A filed November 15, 2022, Exhibit 4.24 (File no. 333-267991)).
4.26*	Form of SenesTech, Inc. Stock Option Grant Notice and Stand-Alone Option Agreement (Form S-8 filed February 10, 2023, Exhibit 4.2 (File no. 333-269686)).
4.27*	Form of SenesTech, Inc. Restricted Stock Unit Grant Notice and Stand-Alone Restricted Stock Unit Agreement (Form S-8 filed February 10, 2023, Exhibit 4.3 (File no. 333-269686)).
(10)	**Material Contracts**
10.1*	SenesTech, Inc. 2015 Equity Incentive Plan and forms of agreement thereunder (Form S-1 filed September 21, 2016, Exhibit 10.2 (File no. 333-213736)).+
10.2*	Form of Indemnification Agreement (Form S-1 filed September 21, 2016, Exhibit 10.6 (File no. 333-213736)). +
10.3*	Employment Offer Letter by and between the Registrant and Thomas Chesterman dated November 20, 2015 (Form S-1 filed September 21, 2016, Exhibit 10.9 (File no. 333-213736)). +
10.4*	Employment Letter Agreement by and between the Registrant and Kim Wolin dated January 28, 2020 (Form S-1 filed February 13, 2020, Exhibit 10.7 (File no. 333-236302)). +
10.5*	Employment Letter Agreement by and between the Registrant and Steven Krause, dated January 12, 2020 (Form 10-K/A filed April 21, 2020, Exhibit 10.1 (File no. 001-37941)). +
10.6*	Promissory Note, dated April 15, 2020, by and between the Company and BMO Harris Bank National Association (Form 8-K filed April 21, 2020, Exhibit 10.1 (File no. 001-37941)).
10.7*	Employment Letter Agreement by and between SenesTech, Inc. and Kenneth Siegel dated May 16, 2019 (Form 8-K filed May 20, 2019, Exhibit 10.1 (File no. 001-37941)).+
10.8*	Lease by and between the Registrant and Pinnacle Campus Office-Retail, LLC, dated as of November 18, 2019 (Form 10-K filed March 29, 2022, Exhibit 10.1 (File no. 333-236302)).
10.9*	Standard Industrial/Commercial Multi-Tenant Lease, between the Company and Duke Go PP, LLC, dated as of June 22, 2020 (Form 10-Q filed August 13, 2020, Exhibit 10.4 (File no. 001-37941)).
10.10*	Form of Securities Purchase Agreement (Form 8-K filed July 17, 2019, Exhibit 10.1 (File no. 001-37941)).
10.11*	Form of Securities Purchase Agreement (Form 8-K filed January 28, 2020, Exhibit 10.1 (File no. 001-37941)).
10.12*	Form of Securities Purchase Agreement (Form 8-K filed March 6, 2020, Exhibit 10.1 (File no. 001-37941)).
10.13*	Form of Securities Purchase Agreement (Form S-1/A filed February 13, 2020, Exhibit 10.19 (File no. 333-236302)).
10.14*	Form of Securities Purchase Agreement (Form 8-K filed April 21, 2020, Exhibit 10.1 (File no. 001-37941)).
10.15*	Form of Letter Agreement, dated as of October 23, 2020, between the Company and the purchaser thereto (Form 8-K filed October 27, 2020, Exhibit 10.1 (File no. 001-37941)).
10.16*	Form of Securities Purchase Agreement, dated as of January 27, 2021 (Form 8-K filed February 2, 2021, Exhibit 10.1 (File no. 001-37941)).
10.17*	Form of Registration Rights Agreement, dated as of January 27, 2021 (Form 8-K filed February 2, 2021, Exhibit 10.2 (File no. 001-37941)).
10.18*	Form of Securities Purchase Agreement (Form S-1 filed November 15, 2022, Exhibit 10.18 (File no. 333-267991)).
10.19*	SenesTech, Inc. 2018 Equity Incentive Plan, as amended (Form 8-K filed October 14, 2022, Exhibit 10.23 (File no. 001-37941)). +

10.19(a)*	Form of SenesTech, Inc. Stock Option Grant Notice and Option Agreement (Form 8-K filed October 14, 2022, Exhibit 10.23A (File no. 001-37941)).
10.19(b)*	Form of SenesTech, Inc. Restricted Stock Unit Grant Notice and Restricted Stock Unit Agreement (Form 8-K filed October 14, 2022, Exhibit 10.23B (File no. 001-37941)).
10.20*	Form of Securities Purchase Agreement (Form 8-K filed March 19, 2021, Exhibit 10.1 (File no. 001-37941)).
10.21*	Employment Offer Letter by and between the Registrant and Nicole Williams dated May 1, 2021 (Form 8-K filed January 5, 2022, Exhibit 10.1 (File no.001-37941)). +
10.22*	Employment Letter Agreement between SenesTech, Inc. and Joel Freundt dated November 9, 2022 (Form 8-K filed November 14, 2022, Exhibit 10.24 (File no. 001-37941)). +
10.23*	Separation Agreement, by and between SenesTech, Inc. and Kenneth Siegel, dated December 29, 2022 (Form 8-K filed January 5, 2023, Exhibit 10.25 (File no. 001-37941)).
(21)	
21.1	List of Subsidiaries of the Registrant.
(23)	**Consents of Experts and Counsel**
23.1	Consent of Independent Registered Public Accounting Firm M&K CPAS, PLLC.
(31)	**Rule 13a-14(a)/15d-14(a) Certifications**
31.1	Certification of Chief Executive Officer.
31.2	Certification of Chief Financial Officer.
(32)	**Section 1350 Certifications**
32.1	Certifications of Chief Executive Officer and Chief Financial Officer.
(101)	**Interactive Data File**
101.INS	Inline XBRL Instance Document.
101.SCH	Inline XBRL Taxonomy Extension Schema Document.
101.CAL	Inline XBRL Taxonomy Extension Calculation Linkbase Document.
101.LAB	Inline XBRL Taxonomy Extension Labels Linkbase Document.
101.PRE	Inline XBRL Taxonomy Extension Presentation Linkbase Document.
101.DEF	Inline XBRL Taxonomy Extension Definition Linkbase Document.
104	Cover Page Interactive Data File (formatted as Inline XBRL and contained in Exhibit 101).

* Incorporated by reference as indicated.
\+ Indicates a management contract or compensatory plan or arrangement.

ITEM 16. FORM 10-K SUMMARY.

Not applicable.

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

SENESTECH, INC.

Date: March 16, 2023 By: /s/ Joel Freundt
Joel Freundt
Chief Executive Officer

Date: March 16, 2023 By: /s/ Thomas C. Chesterman
Thomas C. Chesterman
Chief Financial Officer and Treasurer

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of the registrant and in the capacities on the dates indicated.

Signature	Title	Date
/s/ Joel Fruendt **Joel Fruendt**	*Chief Executive Officer* (Principal Executive Officer)	March 16, 2023
/s/ Thomas C. Chesterman **Thomas C. Chesterman**	*Chief Financial Officer and Treasurer* (Principal Financial and Accounting Officer)	March 16, 2023
/s/ Jamie Bechtel **Jamie Bechtel**	*Chair of the Board*	March 16, 2023
/s/ Marc Dumont **Marc Dumont**	*Director*	March 16, 2023
/s/ Delphine Francois Chiavarini **Delphine Francois Chiavarini**	*Director*	March 16, 2023
/s/ Phil Grandinetti **Phil Grandinetti**	*Director*	March 16, 2023
/s/ Jake Leach **Jake Leach**	*Director*	March 16, 2023
/s/ Matthew K. Szot **Matthew K. Szot**	*Director*	March 16, 2023

Exhibit 21.1

SUBSIDIARIES OF THE REGISTRANT

The following is a list of subsidiaries of the registrant as of December 31, 2022.

Name	Jurisdiction of incorporation or organization
NONE	

Exhibit 23.1

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We hereby consent to the incorporation by reference in the Registration Statements Nos. 333-251173, 333-237563, and 333-236359 on Form S-1; Registration Nos. 333-261227, 333-252665, and 333-226842 on Form S-3; and Registration Nos. 333-269686, 333-258851, 333-246258, 333-225710, and 333-215026 on Form S-8 of our report dated March 16, 2023, relating to the financial statements of SenesTech, Inc., for the years ended December 31, 2022 and 2021, which appear in this Annual Report on Form 10-K of SenesTech, Inc. for the year ended December 31, 2022.

/s/ M&K CPAS, PLLC

www.mkacpas.com
Houston, Texas
Dated: March 16, 2023

Exhibit 31.1

CERTIFICATION OF CHIEF EXECUTIVE OFFICER PURSUANT TO RULE 13(a)-14(a) UNDER THE SECURITIES EXCHANGE ACT OF 1934

I, Joel Fruendt, certify that:

1. I have reviewed this Annual Report on Form 10-K of SenesTech, Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

   (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

   (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

   (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

   (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

   (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

   (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Dated: March 16, 2023

/s/ Joel Fruendt

Joel Fruendt

Chief Executive Officer

Exhibit 31.2

CERTIFICATION OF CHIEF FINANCIAL OFFICER PURSUANT TO RULE 13(a)-14(a) UNDER THE SECURITIES EXCHANGE ACT OF 1934

I, Thomas C. Chesterman, certify that:

1. I have reviewed this Annual Report on Form 10-K of SenesTech, Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

   (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

   (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

   (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

   (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

   (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

   (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Dated: March 16, 2023

/s/ Thomas C. Chesterman

Thomas C. Chesterman

Chief Financial Officer and Treasurer

Exhibit 32.1

CERTIFICATIONS PURSUANT TO
18 U.S.C. SECTION 1350, AS ADOPTED
PURSUANT TO SECTION 906 OF THE
SARBANES-OXLEY ACT OF 2002

We, Joel Freundt, Chief Executive Officer, and Thomas Chesterman, Chief Financial Officer, of SenesTech, Inc. (the "Company"), hereby certify that the Company's Annual Report on Form 10-K for the year ended December 31, 2022, as filed with the Securities and Exchange Commission on March 16, 2023 pursuant to Section 13(a) of the Securities Exchange Act of 1934 (the "Report"), fully complies with the requirements of that section.

We further certify that the information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

/s/ Joel Fruendt

Joel Fruendt

Chief Executive Officer

Dated: March 16, 2023

/s/ Thomas Chesterman

Thomas Chesterman

Chief Financial Officer

Dated: March 16, 2023